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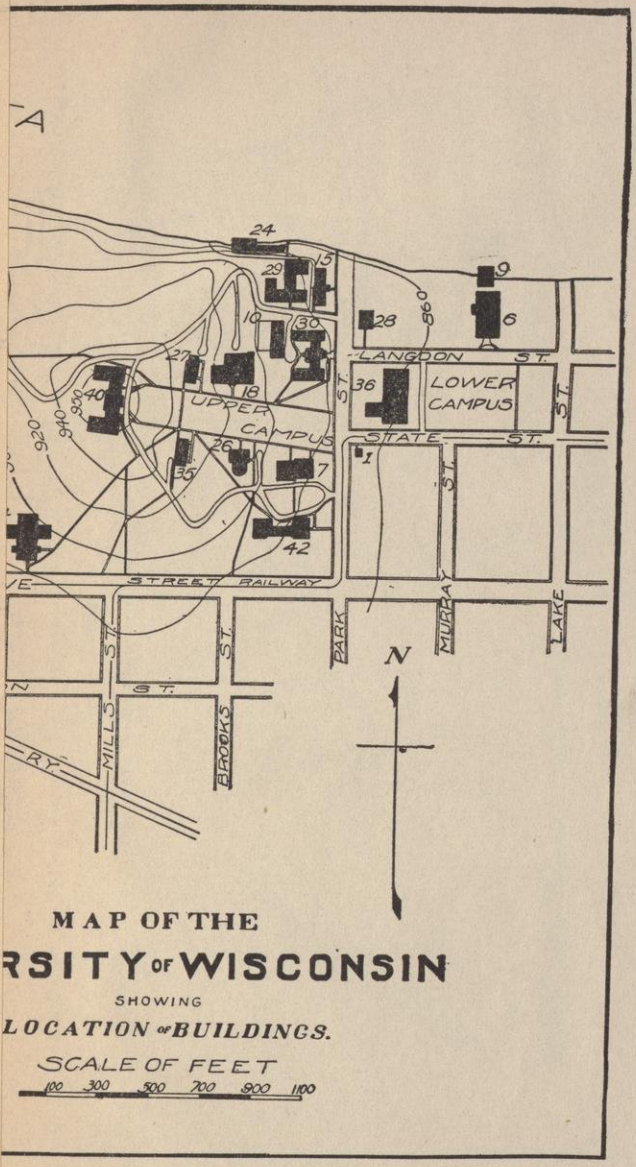
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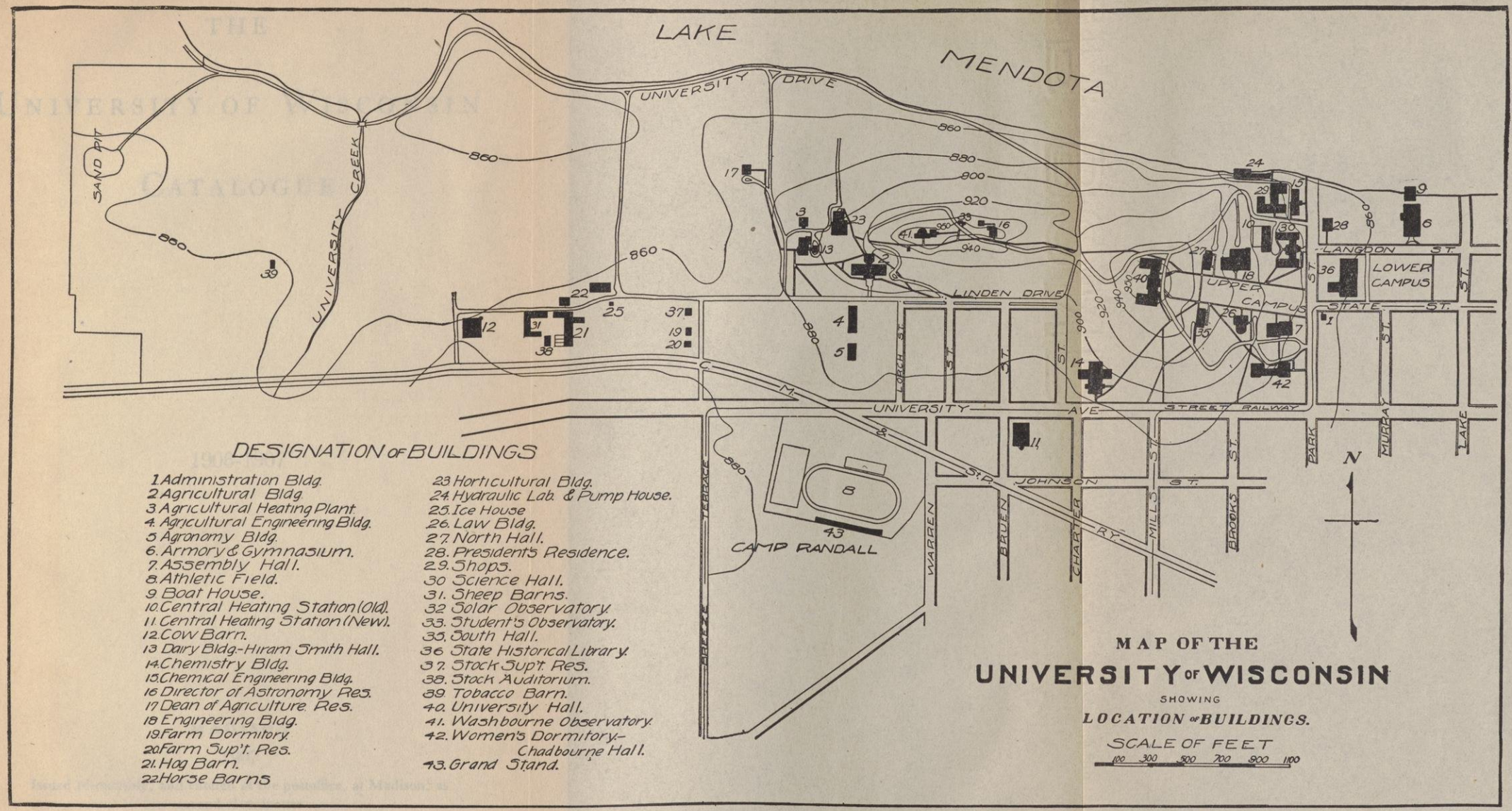
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DESIGNATION of BUILDINGS

1. Administration Bldg.
2. Agricultural Bldg.
3. Agricultural Heating Plant.
4. Agricultural Engineering Bldg.
5. Agronomy Bldg.
6. Armory & Gymnasium.
7. Assembly Hall.
8. Athletic Field.
9. Boat House.
10. Central Heating Station (Old).
11. Central Heating Station (New).
12. Cow Barn.
13. Dairy Bldg.-Hiram Smith Hall.
14. Chemistry Bldg.
15. Chemical Engineering Bldg.
16. Director of Astronomy Res.
17. Dean of Agriculture Res.
18. Engineering Bldg.
19. Farm Dormitory.
20. Farm Sup't. Res.
21. Hog Barn.
22. Horse Barns
23. Horticultural Bldg.
24. Hydraulic Lab. & Pump House.
25. Ice House
26. Law Bldg.
27. North Hall.
28. President's Residence.
29. Shops.
30. Science Hall.
31. Sheep Barns.
32. Solar Observatory.
33. Student's Observatory.
35. South Hall.
36. State Historical Library.
37. Stock Sup't. Res.
38. Stock Auditorium.
39. Tobacco Barn.
40. University Hall.
41. Washbourne Observatory.
42. Women's Dormitory–Chadbourne Hall.
43. Grand Stand.

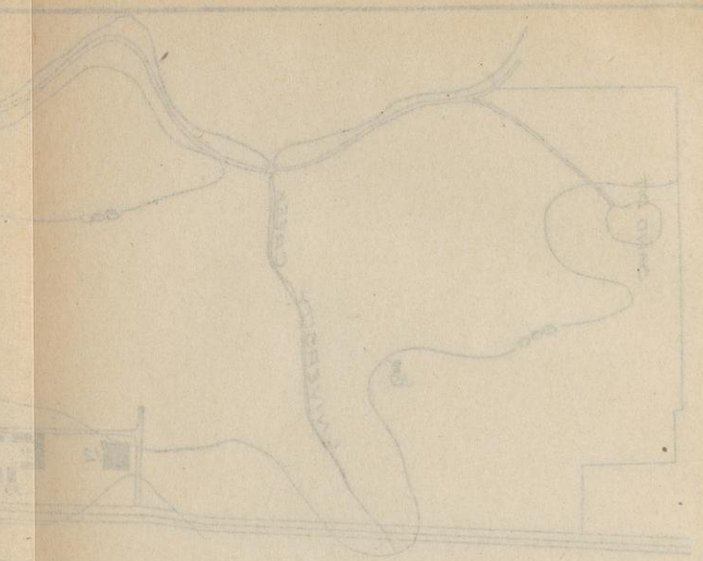
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LOCATION of BUILDINGS.

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THE

UNIVERSITY OF WISCONSIN

CATALOGUE

1906-1907

MADISON

1907

Issued bi-monthly, and entered at the postoffice, at Madison, as second class matter

THE POST
APPLETON WISCONSIN

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1907

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CALENDAR

1906		
Sept. 25-26	Tu.-Wed.	Registration days.
Sept. 25-26	Tu.-Wed.	Examinations for admission.
Sept. 27	Thursday	Lectures and recitations begin.
Nov. 6	Tuesday	Election Day: legal holiday.
Nov. 29	Thursday	Thanksgiving Day: legal holiday.
Dec. 21	Friday eve.	Christmas recess begins.
1907		
Jan. 3	Thursday	Exercises resumed after the Christmas recess.
Feb. 4-13	Mon.-Wed.	Final examinations, first semester.
Feb. 14-15	Th.-Fri.	Registration days for second semester.
Feb. 18	Monday	Lectures and recitations begin.
Feb. 22	Friday	Washington's Birthday: legal holiday.
March 28	Thursday	Easter recess.
April 1	Monday	
May 30	Thursday	Decoration Day: legal holiday.
June 8-14	Sat-Fri.	Final examinations, second semester.
June 13-14	Th.-Fri.	Examinations for admission.

Commencement Week

June 16	Sunday	Baccalaureate Address.
June 17	Monday	Class Day Exercises.
June 18	Tuesday	Alumni Day.
June 19	Wednesday	Commencement Day.

June 20	Thursday	Summer vacation begins.
June 24	Monday	Summer Session opens.
Aug. 3	Saturday	Summer Session closes.

THE ACADEMIC YEAR 1907-08

1907		
Sept. 24-25	Tu.-Wed.	Registration days.
Sept. 24-25	Tu.-Wed.	Examinations for admission.
Sept. 26	Thursday	Lectures and recitations begin.
Nov. 28	Thursday	Thanksgiving Day: legal holiday.
Dec. 23	Sat. eve.	Christmas recess begins.
1908		
Jan. 3	Friday.	Exercises resumed after the Christmas recess.
Feb. 3-12	Mon.-Wed.	Final examinations, first semester.
Feb. 13-14	Th.-Fri.	Registration days for second semester.
Feb. 17	Monday	Lectures and recitations begin.
Feb. 22	Saturday.	Washington's Birthday: legal holiday.
Apr. 16-20	Th.-Mon.	Easter recess.
May 30	Saturday	Decoration Day: legal holiday.
June 6-12	Sat.-Fri.	Final examinations, second semester.
June 11-12	Th.-Fri.	Examinations for admission.
June 14-17	Sun.-Wed.	Commencement Week.

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1906-1907

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10th District, PROFESSOR J. T. HOOPER, Ashland.
11th District, W. C. BRADLEY, Hudson.

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CHARLES P. CARY, State Superintendent of Public Instruction, *Ex-officio.*
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State at Large, W. D. HOARD, Fort Atkinson.
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M. E. MCCAFFREY, *Audit Clerk.*

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FACULTY

The abbreviations in italic letters indicate the University buildings in which offices are located: *A. H.*, Agricultural Hall; *H. S. H.*, Hiram Smith Hall; *C. H.*, Chadbourne Hall; *N. H.*, North Hall; *Sc. H.*, Science Hall; *S. H.*, South Hall; *U. H.*, University Hall; *E. B.*, Engineering Building; *C. B.*, Chemical Building; *Lib.*, Library; *L. B.*, Law Building; *Gym.*, Gymnasium; *H.-P. B.*, Horticulture-Physics Building; *C. E. B.*, Chemical Engineering Building; *M. S.*, Machine Shops; *S. M.*, School of Music, corner of West Mifflin and North Carroll streets.

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FARRINGTON, EDWARD HOLYOKE, M. S., Professor of Dairy Husbandry. *H. S. H.* 315 Mills.

FENNEMAN, NEVIN MELANCTHON, Ph. D., Professor of Geology. *Sc. H.* 26. 15 W. Gorham.

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*On leave of absence for the second semester, 1906-07.

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*On leave of absence for the academic year 1906-07.
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*On leave of absence for the second semester, 1906-07.

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†Resigned December 22, 1906.
‡Appointed December 18, 1906.

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*On leave of absence for the academic year, 1906-07.
†Appointed February 4, 1907.
‡Appointed February 18, 1907.

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*Appointed February 4, 1907.
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SHEALY, EDWARD MARVIN, B. S., Instructor in Steam Engineering. *E. B.* 27. 148 W. Gilman.

SHINN, FREDERICK LAFAYETTE, Ph. D., Instructor in Physical Chemistry. *C. B.* 317. 1216 Spring

SIEVERS, ARTHUR FREDERICK, Ph. G., Assistant in Pharmaceutical Chemistry. *C. B.* 310. 711 W. Johnson

SMITH, EDWIN RAYMOND, A. B., Instructor in Mathematics. *U. H.* 65. 1029 University Ave.

*STEPHENS, GEORGE WARE, Ph. B., Assistant in Political Economy. *Lib.* 121. 317 Johnson Ct.

*Appointed February 4, 1907.

STEWART, CLINTON B., C. E., Research Assistant in Hydraulic Laboratory. *E. B.* 208. 712 Conklin Pl.

SUYDAM, VERNON ANDREW, B. S., Assistant in Physics. *Sc. H.* 23. 430 Frances.

*TEN EYCK, EDWARD HANLAN, Instructor in Physical Training. *Gym.* 821 State.

TERRY, EARLE MELVIN, A. M., Instructor in Physics. *Sc. H.* 13. 409 N. Bruen.

TIBBALS, CHARLES AUSTIN, Jr., A. M., Instructor in Chemistry and Assaying. *C. B.* 108. 515 N. Henry.

TOTTINGHAM, WILLIAM EDWARD, B. S., Instructor in Agricultural Chemistry. *A. H.* 6a. 915 W. Johnson.

UNDERWOOD, WALTER SCOTT, Student Assistant in Military Science. 614 Langdon.

VAN ZANDT, JEROME GOODSPEED, B. S., Assistant in Railway Engineering. *E. B.* 206. 615 State.

VEERHUSEN, ELSBETH, Ph. D., Instructor in German. *N. H.* 31. 414 N. Livingston.

VORHIES, CHARLES TAYLOR, B. S., Assistant in Zoology. *Sc. H.* 50. 818 W. Johnson.

VOSSKUEHLER, JOSEPH HENRY, M. E., Instructor in Machine Design. *E. B.* 201. 257 Langdon.

WAGNER, GEORGE, M. A., Instructor in Zoology. *Sc. H.* 50. 1901 Jefferson.

WATSON, JAMES WEBSTER, B. S., Instructor in Electrical Engineering. *E. B.* 218. 148 W. Gilman.

WATTS, OLIVER PATTERSON, Ph. D., Instructor in Applied Electrochemistry. *C. E. B.* 106. 313 Johnson Ct.

WAYSON, NEWTON EDWARD, A. B., Assistant in Bacteriology. *S. H.* 36. 310 Bruen.

WEBER, AUGUST WILLIAM, Ph. M., Assistant in Education. *U. H.* 120. 701 Langdon.

WETZEL, REINHARD, AUGUST, B. S., Assistant in Physics. *Sc. H.* 23. 430 N. Bruen.

WICKENDEN, WILLIAM ELGIN, B. S., Instructor in Electrical Engineering. *C. E. B.* 202. 630 Lake.

WILD, EDMUND, M. S., Assistant in German. *N. H.* 36. 701 W. Johnson.

WILLIAMS, ELMER HOWARD, M. A., Assistant in Physics. *Sc. H.* 23. 308 Murray.

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*Appointed December 18, 1906.

WILLIAMS, LESTER DENNISON, B. S., Instructor in Civil Engineering. *E. B.* 306. 316 Park.
WITHEY, MORTON OWEN, C. E., Instructor in Mechanics. *E. B.* 10. 430 Frances.
WOLFF, HENRY CHARLES, M. S., Instructor in Mathematics. *U. H.* 65. 1035 University Ave.
WOODS, HERBERT SPENCER, M. A., Instructor in Chemistry. *C. B.* 107. 902 Garfield.
WOOLLEY, EDWIN CAMPBELL, Ph. D., Instructor in English. *U. H.* 361. 610 Langdon.

STAFF OF THE SCHOOL OF MUSIC

PARKER, FLETCHER ANDREW, Director. Organ, Harmony, and History of Music. *S. M.* 9. 14 W. Gilman.
ANDERSON, MRS. GEORGE K., Harp. *S. M.* 9. 15 W. Doty.
BACH, FRANK CHARLES, Mandolin. *S. M.* 10. 723 Johnson Ct
BIRD, ADA, Piano. *S. M.* 12. 414 N. Livingston
BRAND, BESSIE, Secretary. *S. M.* 9. 220 Lakeside.
BRAND, MRS. M. E., Guitar and Banjo. *S. M.* 15. 220 Lakeside
BREDIN, ELIAS A., Voice and Organ. *S. M.* 7. 716 State
CURTIS, WINIFRED CARD, Piano. *S. M.* 8. 520 State
FORESMAN, ADELAIDE, Voice. *S. M.* 15. 121 S. Doty.
FOWLER, MARY MAUD, Piano. *S. M.* 13. 416 W. Main.
*NITSCHKE, CHARLES, Violin and other Orchestral Instruments. *S. M.* 10. 321 W. Washington Ave.
OWEN, HERMAN EVERETT, Instructor in Public School Music. *S. M.* 9. *Gym.* 41. 615 State.
RANSOM, MISS LYLA ALBINA, Assistant in Public School Music. *S. M.* 8. 1909 Madison.
REGAN, ALICE S., Piano. *S. M.* 11. 321 S. Hamilton.
SANDBERG, MRS. INGA, Piano. *S. M.* 14. 723 State.
†SMITH, GENEVIEVE CHURCH, Voice. *S. M.* 11. 28 E. Gilman.

LIBRARY STAFF

SMITH, WALTER MCMYNN, A. B., Librarian. *Lib.* 222. 218 Park.
DUDLEY, WILLIAM HENRY, A. B., Assistant Librarian. 128 Charter.
BOWEN, AGNES TYLER, Library Assistant. 425 Park.
BURKE, LAURANCE CHARLES, B. L., Library Assistant. 901 W. Johnson.

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*On leave of absence for the second semester, 1906-07.
†Resigned February 9, 1097.

CODDINGTON, HESTER, Head Cataloguer. 935 University Ave.
DAVIDSON, FLORA NEIL, B. L., Library Assistant. 714 State
GROVER, ARLENE, B. L., Library Assistant. 1039 University Ave.
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MINER, SARAH HELEN, Library Assistant. 20 N. Henry.
SANFORD, DELIA C., B. L. S., Library Assistant. 439 Murray.
SCHAEFER, ELLEN, B. L. S., Library Assistant. 935 W. Johnson.
SWENSON, CARA FRANCES, A. B., Library Assistant. 424 N. Pinckney.
USHER, ROBERT JAMES, Library Assistant. 1918 W. Lawn Ave.
WEILEPP, LELIA M., B. L. S., Library Assistant. 450 Charter.
WHITNEY, HELEN GOLDSMITH, A. B., Library Assistant. 18 E. Gorham.
BRIGGS, SOPHIE M., B. L., Librarian of the Law Library. 209 E. Mifflin.
WELSH, IVA ALICE, B. L., Librarian of the Agricultural Library. 416 N. Livingston.

STAFF OF THE UNIVERSITY EXTENSION AND CORRESPONDENCE DEPARTMENTS

LEGLER, HENRY EDUARD, Secretary of the University Extension Department. 215 N. Pinckney.
LIGHTY, WILLIAM HENRY, Ph. B., Secretary Correspondence Work. *U. H.* 154. 1610 Madison.
HUTCHINS, FRANK AVERY, Field Organizer. *U. H.* 154. 403 Murray.
DILWORTH, JAMES FRANCIS, A. M., Instructor in History. 524 N. Henry.
JACOBS, HERBERT HENRY, M. A., Warden, University Settlement. Milwaukee.
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MCCONACHIE, LAUROS G., Ph. D., Instructor in Political Science. 27 W. Dayton.
PITMAN, ANNIE MARIE, Ph. D., Instructor in Latin. 414 N. Henry.
PRAY, CARL, B. A., Professor of History, State Normal School. Milwaukee.
TAYLOR, GRAHAM, Director Chicago Institute of Social Science. Chicago, Ill.

INSTRUCTORS AND ASSISTANTS IN SHOP PRACTICE

*ANDERSON, BERTIE SAMUEL, Machinist and Assistant in Shop Practice. *M. S.* 417 W. Gorham.

†KATELEY, FRED, Assistant in Forge Room. 2122 Rusk

KRATSCH, HENRY, Instructor in Mechanical Practice. *M. S.* 417 W. Gorham.

LOTTES, WILLIAM GEORGE, Instructor in Forge Practice and Repairing. *M. S.* 213 Lake.

‡MARX, WILLIAM GEORGE, Assistant in Forge Room. 907 W. Dayton.

MCINTOSH, WALTER HARLAND, Instructor in Wood Mechanics. *M. S.* 102 Spooner.

INSTRUCTORS AND ASSISTANTS IN THE COLLEGE OF AGRICULTURE

DELWICHE, EDMUND JOSEPH, B. S. A., Superintendent Superior Demonstration Farms. Iron River.

KLEINHEINZ, FRANK, Instructor in Animal Husbandry. 412 Charter.

MEYER, MARTIN, Instructor in Dairy Husbandry. 432 Warren.

SANDELL, HARVEY, Assistant in Soils. 1311 Morris.

STONE, ALDEN LESCOMBE, Instructor in Agronomy. *A. H.* 43. 1030 W. Dayton.

OTHER OFFICERS

RILEY, EDWARD F., Secretary of the Regents. Office of the Regents. "Rudder Grange," Elmside.

HIESTAND, WILLIAM DIXON, University Registrar and Secretary of the Faculty. *U. H.* 10. 16 W. Gorham.

BURCHELL, DURWARD EARLE, A. M., Auditor of the Regents. *N. H.* 81. 401 W. Wilson.

CROWE, BELLE, Matron. Chadbourne Hall.

MCCONNELL, ALBERT WILSON, Superintendent of Buildings. *L. B.* 315 Johnson Ct.

PEABODY, ARTHUR, Architect and Superintendent. *L. B.* 630 N. Frances.

PICKARTS, LUCIAN JULIUS, Bursar of the Regents. Administration Building. 429 Park.

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*Resigned.
†Appointed December 18, 1906.
‡Resigned November 17, 1906.

STANDING COMMITTEES OF THE FACULTY

The Committee on Accredited Schools and Appointments.—Professor Hubbard, chairman; Professor Tressler, secretary; Professors Elliott, Evans, Dennis, Fiske, Harper, and J. D. Phillips.

The Athletic Council.—Professor Hutchins, chairman; Professors Beebe, Horack, and Pyre.

The Committee on Commencement.—Professor Olson, chairman; Professors Lyman, Mack, H. L. Smith, and W. M. Smith.

The Committee on Discipline.—Professor Daniells, chairman; The Deans, ex-officio; Professors Freemen, Pence, and Scott.

The Board of Editors of the Bulletin.—*University*, Professor W. M. Smith, chairman; Professor Bleyer, secretary; Professors Coffin, Kremers, Mead, Owen, and Adams. *General Series*, Professor Olson. *Press*, Professor Bleyer.

The Committee of the Graduate School.—Professor Comstock, chairman; Professor Burgess, secretary; Professors Babcock, Bardeen, Birge, Hohlfeld, Kahlenberg, Reinsch, Richards, Ross, Scott, Slaughter, Slichter, Turneaure, and Turner.

The Committee on Indexing Publications.—Professor Laird, Chairman; Professor Sparling, and Mr. Wagner.

The Lecture Committee.—Professor Jastrow, chairman; Professors Dodge, Holmes, and Snow.

The Library Committee.—President Van Hise, chairman; Professor W. M. Smith, secretary; Professors Bull, Harper, Hohlfeld, Hubbard, Munro, Scott, and Sharp.

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The Committee on Rooms and Time Table.—Professor Dowling, chairman; Professors Cairns, Marshall, and Thorkelson.

The Committee on Social Affairs.—Professor Sharp, chairman; Professors Allen, Curtis, Mayhew, H. A. Smith, and Woodward.

The Committee on Honorary Degrees.—Professor C. F. Smith, chairman; Deans Birge, Richards, and Turneaure, and Professors Babcock and Comstock.

The Committee on University Hygiene.—Professor Bardeen, chairman; Professors Erlanger, Frost, and Hunt.

CHAIRMEN OF DEPARTMENTS

College of Letters and Science

Anatomy,	Professor Bardeen.
Astronomy,	Professor Comstock.
Bacteriology,	Professor Russell.
Botany,	Professor Harper.
Chemistry,	Professor Daniells.
Education,	Professor O'Shea.
English,	Professor Freeman.
Geology,	Professor Leith.
German,	Professor Hohlfeld.
Greek,	Professor C. F. Smith.
Hebrew and Hellenistic Greek,	Professor Williams.
History,	Professor Dennis.
Home Economics,	Professor Hunt.
Latin,	Professor Slaughter.
Mathematics,	Professor Slichter.
Music,	Professor Parker.
Pharmacy,	Professor Kremers.
Philosophy,	Professor McGilvary.
Physics,	Professor Snow.
Physiology,	Professor Erlanger.
Political Economy,	Professor Ely.
Political Science,	Professor Reinsch.
Public Speaking,	Assistant Professor Lyman.
Romance Languages,	Professor H. A. Smith.
Scandinavian Languages,	Professor Olson.
Zoology,	Assistant Professor Holmes.

THE UNIVERSITY OF WISCONSIN

INTRODUCTION

HISTORICAL SKETCH

The University of Wisconsin was founded in the pioneer days of the State. In the first year of the existence of the territory (1836), an act was passed for the establishment of "Wisconsin University" at Belmont; but, except for the naming of trustees, the project was never carried out. In 1837, another act to establish the "Wisconsin University of Green Bay" resulted in the formation of a temporary local college called Hobart University. It was in 1838 that the University of the Territory of Wisconsin was provided for by law, and endowed by the act of Congress in the same year, with the customary grant of two townships of land. Its governing body, a Board of Visitors, was the only evidence of the existence of this institution.

In 1848, section 6 of the constitution of the new state declared that "Provision shall be made by law for the establishment of a state university, at or near the seat of the state government, and for connecting with the same from time to time such colleges in different parts of the state as the interests of education may require." The land grants of the United States for the support of the University were made a perpetual fund for its support, and it was provided that no sectarian instruction should be allowed in the institution. The University was incorporated by the act of July 26, 1848, and a board of regents, to be chosen by the legislature, was made its governing body. At the first meeting of this board, October 7, 1848, a preparatory department was established, to open in February, 1849, under the charge of John W. Sterling, a graduate of the University of New Jersey (Princeton). The site for the University, on "College Hill," was selected, and John H. Lathrop, a graduate, and afterwards a tutor, of Yale College, was called from the presidency of the University of Missouri to be-

come Chancellor. He was formerly inaugurated January 16, 1850. North Hall, the first building, was constructed in the same year, and opened September 17, 1851. The first class, consisting of Levi Booth and Charles T. Wakeley, graduated on July 26, 1854. 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. Under Chancellor Lathrop, the group of buildings was increased by South Hall, completed in 1855, and University Hall, completed in 1859. Congress granted Wisconsin, in 1854, a second two townships of land for the University, but this, as well as the first grant, was sacrificed at low prices to attract immigration. Thus the income from the University fund was very small. Moreover, the State required the regents to construct their buildings by loans drawn from the same land fund instead of providing them by state bounty. Until 1870, the University struggled along on the meager income furnished by the lands donated by the federal government. The State made its higher education subordinate to the demand of its citizens for cheap lands.

The University in these years was 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 public school system of the state as a basis for university growth, but ill health caused his resignation in 1860.

Under the *ad interim* direction of Professor Sterling, the University remained without a chancellor until 1867. The Civil War

took a large proportion of the students into the field, and no commencement was held in 1864, all but one of the senior class having joined the army.

The close of the war brought a new inspiration and growth to the University. The returning soldiers took up their studies, and by 1870 the University had nearly 500 students. A reorganization was effected in 1866, and Dr. Paul A. Chadbourne, a graduate of Williams College, was called to the presidency. Among the important developments of this period was the founding of the College of Law, the maturing of plans providing for co-education, and the institution of the agricultural department as an integral part of the University. This constituted a radical departure from the policy of the other states of the middle west. In many instances agricultural and engineering colleges have been founded apart from the state university. The rapid growth of the University of Wisconsin and its hold upon the people have been in a considerable measure due to the fact that it contains within its organization the colleges which appeal to the farmer and 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 appropriation which the legislature ever made to the University was for the women's building, and only a few years elapsed when complete co-education was adopted. Perhaps the most important development of the period of Dr. Twombly's presidency was the provision made by the legislature for a state tax of $10,000 a year to form a part of the University income. In thus adopting the policy of a special annual tax for the sup-

port of the University, the legislature made the formal explanation in the preamble to the law, that the policy of disposing of the land grants by congress at a low price, in order to attract actual settlers, had prevented the increase of the productive funds, and that it was the duty of the State to see to it that the University should not suffer. A system of free tuition to the graduates of the high schools of the State who passed the University entrance requirements, was also adopted at this time. This step was the beginning of the elimination of the preparatory department of the University. By resting its growth upon the high schools of the State, and receiving an annual income from the taxpayers, the University merged itself completely with the educational life of the State, and, in the long run, felt the benefits of this change.

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

President Bascom was succeeded by President Chamberlin of the United States Geological Survey, a graduate of Beloit College. He gave the University a strong impulse toward graduate study by the emphasis which he laid on research. Courses of study were increased, the standards of admission raised, and fellowships provided for graduate study. When he resigned, after five years of service, in 1892, the University had doubled its numbers, rising from 500 to 1,000. During his presidency, a new science building was completed, and buildings were erected for the dairy school and the College of Law. 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, whose presidency 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 mounument 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, and partly by private gifts. There have been five 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, and the Supplementary Morrill Grant of 1890.

Besides numerous and large appropriations for buildings and other specific purposes, the State of Wisconsin has made eight 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 additional buildings.

Of the gifts that have come to the University, 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.

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, pharmacy, 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. Thus it is the general policy of the institution to foster the higher educational interests of the State, broadly and generously interpreted. 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 College of Law.
- The College of Agriculture.
- The Graduate School.

The College of Letters and Science embraces—

- General Courses in Liberal Arts.
- Special Courses, which include:
  - Commerce.
  - Pre-medical Studies.
  - Pharmacy.
  - Music.
  - Home Economics.

The College of Engineering embraces—

- The Civil Engineering Course.
- The Sanitary Engineering Course.
- The Mechanical Engineering Course.
- The Electrical Engineering Course.
- The Applied Electrochemistry Course.
- The General Engineering Course.
- The Mining Engineering Group of Electives.

The College of Agriculture embraces—

- The Experiment Station.
- The Long Course in Agriculture.
- The Short Course in Agriculture.
- The Dairy Course.
- The Farmers' Institutes.

The College of Law embraces—

- A Three Years' Course.

EQUIPMENT

GROUNDS AND BUILDINGS

The University of Wisconsin is picturesquely situated at Madison, the capital of the State. The University grounds comprise 450 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, in 1903, sixty acres were added.

The buildings of the University that are used for instructional purposes are sixteen 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, Home Economics, Hebrew and Hellenistic Greek, the Hygienic laboratory; 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 new wing are the offices of the President and the Registrar. These buildings as originally erected were paid for out of the money derived from the sale of lands granted by the national government.

Across the east front of the Campus, at the foot of University Hill, is a row of buildings, erected at the expense of the State of Wisconsin. At the south is Chadbourne Hall, the dormitory for young women; it was built in 1870 and remodeled and enlarged in 1896 (see Index). Next stands Assembly Hall, completed in 1879; the rear part, occupied by the University Library until the summer of 1900, has been remodeled for the School of Music. Still farther north is Science Hall, the largest and most costly of the University buildings, completed in 1887, containing the lecture rooms, laboratories, and museums of the departments of Physics, Geology, and Biology (including Anatomy), and also the laboratory of Psychology. Next to Lake Mendota is the old Chemical Laboratory, built in 1885, and now occupied by the departments of Chemical Engineering and Physiology. To the rear of this are the Machine Shop and the central heating plant, both built in 1885, and enlarged in 1894. To the north of the Marchine Shop, and abutting the lake, is the new Hydraulic Laboratory Building, completed in 1905. To the west of Science Hall, on the north side of the Campus, is the Engineering Building, erected in 1900. Opposite this, on the south side of the Campus, is the Law Building, erected in 1893, which, in addition to the library, lecture rooms, and offices of the College of Law, contains the offices of the University architect and the superintendent of buildings.

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.

Southwest of University Hall, on the level tract of land front-

ing on University Avenue, stands the new Chemical Building. It was begun in 1904, and was available for instructional purposes in the fall of 1905. The central part of the building is 80 by 188 feet, with two wings, each 51 by 61 feet, all three stories in height. The 80-foot front is of Bedford stone; the rest of the exterior is of sand-lime brick, which matches the stone front in color, giving the effect of a solid stone building. When the building is complete, with future additions as planned, the whole exterior will be of Bedford stone. The light-colored brick will then face the light-courts. The building contains an auditorium seating five hundred persons, four smaller lecture and seminary rooms, and a library. Besides these there are large laboratories for organic, inorganic, analytical, physical, and pharmaceutical chemistry, with special laboratories for advanced work in each of these branches. The equipment of the building will be modern and complete throughout, affording the best of facilities for work in all departments.

Directly west of University Hill is Observatory Hill, upon which stands the 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 (for the Dairy School), constructed in 1891, the Horticultural-Physics Building, begun in 1893 and completed in 1896, and the new Central Agricultural College Building, first occupied in 1904, a description of which may be found in that part of this catalogue devoted to the College of Agriculture. In the autumn of 1907, two new buildings located south of Agricultural Hall, the Farm Engineering Building and the Agronomy Building, will be ready for occupation. Farther west lie the barns and buildings of the Experimental Farm and the residence for the Dean of the College of Agriculture.

Between the Lower Campus and the lake stands the Armory and Gymnasium, authorized by the legislature of 1901, and between this and the lake is the University Boat House.

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 Madi-

son 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 335,000 and the number of pamphlets exceeds 175,000.

The first three libraries above named are all housed in the new library building of the State Historical Society on the Lower Campus of the University. This building, erected by the State of Wisconsin at a cost of $610,000, affords most convenient 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, allotted to American history, European history, political economy, political science, and mathematics. The greater part of the second or main floor is occupied by the general reading room and the periodical room, which are used in common by the two libraries. In these two reading rooms 275 readers may find ample accommodation at one time. In open cases in the reading room are shelved several thousand reference and "reserved" books. To these, as well as to the large collection of general and engineering periodicals in the adjoining periodical room, all readers have direct access. The main portion of both libraries is stored in the stack wing adjoining the delivery room on the west. Officers of the University have direct access to the shelves in all parts of the library, and students engaged in advanced work, upon recommendation of their instructors, are allowed access to those parts of the collection dealing with their special subjects.

The administrative rooms of the Historical Society and of the University library are situated at the south and north ends of the second floor respectively. The north end of the third floor is occupied by six seminary rooms, for the departments of German, Latin, Greek, Romance Languages, English, and Philosophy and Education. The south end of the third floor contains a small lecture hall, a room for the Wisconsin Academy of Sciences, Arts, and Letters, and two small administrative rooms. The museum and gallery of the Historical Society occupy the fourth floor.

The library is open fourteen hours daily, during the academic year, except on Sundays and legal holidays. At the opening of the

college year introductory lectures on the use of the library are given to new students by the University librarian.

The Library of the University of Wisconsin, including its branches, contains about 122,000 volumes and 35,000 pamphlets. The catalogue is the usual dictionary card catalogue of authors, subjects, and titles in one alphabetical arrangement. Subject to certain restrictions, books may be drawn by all members of the University. Students are required to make a guarantee deposit of $2.00 with the Bursar of the Regents before borrowing books from the library. This amount is refunded on presenting to the Bursar the library deposit card properly endorsed by the Librarian.

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

The College of Law has a special library of 15,000 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 8,000 volumes is located on the first floor of the new Agricultural Hall. In the reading room of the Engineering Building are kept the current files of about 175 of the most important engineering and technical periodicals, together with a collection of engineering reference books.

The Library of the State Historical Society contains over 145,000 volumes and 140,000 pamphlets. While strong in all fields of American History and allied subjects, it is especially rich in manuscript and other material for the study of the history of the Mississippi valley. Its collections in English history are among the most extensive in this country.

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

The State Law Library in the Capitol numbers about 45,000 volumes. Students are allowed to draw books from the Madison Free Library, located in the new Carnegie Library building. This is a well selected collection of over 17,000 volumes.

The excellence and extent of these libraries is such as to make

Madison among the first, and in some departments the most important, of library centers west of the Alleghanies.

LABORATORIES

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 accommodating five hundred and forty students, and the laboratories of advanced inorganic chemistry accommodating eighty students. On the second floor are the laboratory of qualitative analysis accommodating one hundred and twelve students, the laboratories of quantitative analysis accommodating one hundred and twenty-one students, the food laboratory accommodating ten students, and the laboratory of practical pharmacy accommodating twelve students. On the third floor are the laboratories of physical chemistry accommodating fifty-six students; the laboratory of electrochemistry accommodating twenty-four students; the laboratories of organic chemistry accommodating sixty-four students; and the laboratory of pharmaceutical chemistry accommodating forty-eight students. The building also contains a large auditorium with a seating capacity for five hundred and four persons, and three additional lecture rooms, one on each floor, seating sixty persons each. On the second floor, there is a seminary room with a seating capacity for about sixty students, and on the third floor a library and reading room with a capacity for about fifty students. Besides the rooms mentioned, the building is well supplied with offices, private laboratories, smaller laboratories for special work, dark rooms, balance rooms and store-rooms. All the laboratories are well lighted and well equipped for the work for which they have been designed. The supply of chemicals and apparatus is unusually good; and the chemical library contains complete files of all the important chemical journals, and is well supplied with reference books and other works on chemistry and allied subjects. The chemical department is therefore able to offer exceptionally good facilities, not only for the pursuit of the usual courses in chemistry, but for original investigation as well. Research is especially encouraged, and such additional facilities as may be required for any special piece of work are furnished by the department when needed.

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 lighted. 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 150 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, all of which are liberally supplied with piers to insure perfect stability of the instruments used. A well-equipped workshop under the direction of a skilled mechanic is an important feature of the department. Besides current supplied from the numerous dynamos in the University shops, the various rooms of the physical laboratory are connected with the electric light and power circuits of the city.

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

MINERALOGICAL LABORATORY.—The laboratory om mineralogy is located on the second floor of Science Hall, where desks and chemical reagents for courses in blow-pipe analysis and determinative mineralogy are provided for a class of forty students; there is also a goniometer room which can be darkened for the study of crystals. In the mineralogical lecture room are the necessary models of crystals in glass and wood, and working collections of crystals and minerals.

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.

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

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

BOTANY.—The laboratories for advanced work in botany are fitted up with the apparatus and reagents necessary to advanced courses in vegetable morphology, histology, physiology, and cytology. A green house 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, and for plant pathology. 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 of various patterns 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 granitational stimuli on protoplasmic activities, and a set of electrical measuring instruments, such as a delicate d'Arsanval galvanometer, mil-ammeter, resistance measuring instruments, etc., for the study of electrophysiological problems.

ZOOLOGY.—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. Compound and dissecting microscopes, microtome, paraffin bath, reagents, etc., are included in the equipment and are at the disposal of the students. 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. Many models are used in the laboratory; a nearly complete set of Ziegler models illustrating life-histories of invertebrates, besides a large number of Blatschka models, especially rich in protozoa and coelenterata. A large collection illus-

trating the life histories of insects, both alcoholic and dry preparations, while exhibited in the museum, have been purchased especially for lecture and laboratory work.

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

Bacteriology.—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.

THE AGRICULTURAL LABORATORIES.—The well-equipped laboratories of the College of Agriculture provide unusual opportunities to students, especially those pursuing advanced work, because of the wide range of both practical and research efforts conducted by the Experimental Station. The chemical department, for example, is, by legislative action conferred upon the Station, entrusted with the supervision and licensing of commercial concentrated feeding stuffs and commercial fertilizers sold in the State. The Horticultural department has charge of nursery inspection, likewise by legislative act. The Agricultural Bacteriological department is in close association with the State Live Stock Sanitary Board in matters relating to animal diseases. The Dairy department converts more than four million pounds of milk annually into various commercial dairy products. The large complement of live stock at the farm is in use at all times in feeding experiments. The Physics department conducts soil and plant culture researches. The Agronomy department is striving to improve our grains and forage plants. The Agricultural Engineering department studies the various implements used on the farm. All these efforts converge in the laboratories of the College, giving unusual force and character to all work done therein.

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.

THE PSYCHOLOGICAL LABORATORY.—The laboratory occupies a suite of eleven room on the basement floor of the north wing of

University Hall. The equipment is especially designed to meet the needs of practical experiments and demonstrations for the courses in psychology, and to give opportunity to students of psychology to study the methods and results of psychological problems. There are special facilities for original research in many directions, while provisions are also afforded for the practical application of results and tests to educational problems.

Publications setting forth the results of special studies undertaken in the laboratory have appeared in the *American Journal of Psychology*, the *Psychological Review*, the *Educational Review*, the *Popular Science Monthly*, and elsewhere. Four series of special papers of this kind have been published, and others are in preparation. Theses involving experimental inquiry are arranged for the baccalaureate and advanced degrees.

The Engineering, Assaying, Pharmacy, and Agricultural laboratories are described under their respective departments.

UNIVERSITY MUSEUMS

OFFICERS

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.

ROBERT A. HARPER, Ph. D., Professor of Botany, Curator for Botany.

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

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

N. M. FENNEMAN, Ph. D., Professor of General Physiographic Geology.

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 the second and third floors of the south wing of Science Hall. The collections in the College of Engineering and the College of Agriculture are described on later pages.

THE ANATOMICAL MUSEUM is at present located on the fourth floor of Science Hall. It is primarily designed as an aid in teach-

ing and investigation, and includes both human and comparative vertebrate anatomy.

In osteology there is a complete series of human skeletons from the embryo through foetal life up to, and including, the adult. The collection includes a number of articulated and disarticulated skulls. In addition to the above there is a representative collection of vertebrate skeletons displayed in the Biological Museum. Arthrology is represented by a series of preparations which show the ligaments of all the principal joints. Myology, angiology, and splanchnology are represented by numerous preparations including dissections and frozen sections, the best of the His models made by Steger, of Leipzig, some of which represent the viscera *in situ*, while others show the individual organs removed from the body. In neurology the collection includes the plaster casts of brain dissections by Steger and by Fuller, the series of His models showing the development of the brain, made by Ziegler, and models showing the principal fiber tracts of the cord and medulla. Peripheral nerves and sense-organs are illustrated by models by Tramond and by Auzoux. In embryology there is a series of the models made by Ziegler, a collection of embryos, human and vertebrate, preserved in formalin, and a series of dissections of embryos of various ages. In the museum there are a number of models and special preparations made in the laboratories for teaching purposes, or to illustrate special investigations.

The Geological and Mineralogical 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 geologic features. The paleontologic section includes the Powers collection of Wisconsin Silurian fossils and also the Wisconsin Academy of Arts, Science, and Letters collection containing the type fossils described in the volumes of the first Wisconsin Geological Survey of Wisconsin. In the mineral and rock section is included the Henry collection from southwestern Wisconsin and several of the well-known illustrative collections of rocks.

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 Wisconsin Geological Survey; and the Hobbs collection, mainly of European rocks, supplied with over 1,000 thin sections. Of technical interest are the special collections of metallurgical, pharmaceutical, and engineering specimens, and the collection of Wisconsin building stones and clays made by the Wisconsin Geological Survey.

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

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 contained about 8,000 species, has been mounted and arranged and is now 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 has been very greatly extended by gifts, purchases, exchanges, and collections acquired, so that it now 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 DRUG COLLECTION.—At present this collection contains about 4,500 sample specimens of drugs for purely illustrative purposes. Each year large additions come to it as contributions from various sources. Among the larger contributions 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 colection of fifty Ceylon drugs and medicines and a collection of more than one hundred Malay medicines.

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 and Olcott, New York; and others. A cabinet for dye-stuffs contains over 350 samples of artificial dye-stuffs from the Farbenfabriken of Elberfeld & Co. of New York. This collection is supplemented by ten 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, the Farbenfabriken of the Elberfeld Company, and from Merck & Co., all of New York. Numerous smaller donations have been received within recent years.

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 WASHBURN OBSERVATORY

The Washburn Observatory is primarily an institution for research, and an account of its equipment and the character of the work there undertaken may be found on a later page. (See Index). But it is also utilized as a part of the instructional equipment of the University for students of all stages of advancement. It is open to the public on the first and third Wednesday of every month, from 7:30 to 9:30 P. M., provided the evening is clear, and at these times visitors may look through the large telescope and examine the most interesting objects of the sky.

THE WEATHER BUREAU

The U. S. Government maintains at the University, in charge of a regular Observor, a fully equipped Weather Bureau station of the first class. Weather observations are taken and telegraphed twice daily, and weather maps and forecasts are issued each forenoon on Sundays and holidays. The equipment of the station includes the usual non-recording instruments and also automatic registers for making a continuous record of pressure, temperature, wind direction and velocity, sunshine and rainfall. The exposed apparatus is mounted on the roof of North Hall, while the registers are located in the local office of the Weather Bureau, in Room 84, in the same building. This office is open to the public from 9 A. M. to 4 P. M. daily, except on Sundays and holidays. Visitors are especially welcome during the afternoon hours.

The courses in Meteorology are given on a later page. (See Index.)

GENERAL INFORMATION

UNIVERSITY REGULATIONS

THE UNIVERSITY YEAR

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

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

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

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

Hebrew and Hellenistic Greek Scholarships

The Biblical Alliance of Wisconsin offers a sum of money, at present amounting to $1,500, to provide scholarships for the encouragement of study in the department of Hebrew and Hellenistic Greek. These may be held by graduates or undergraduates. Award is made on basis of excellence. Information regarding the scholarships will be given on application to Professor W. H. Williams.

For the graduate scholarships, see the Graduate School.

The Lillian Paige Allis Scholarships

Through the liberality of Mrs. Lillian Paige Allis, of Madison, the department of German offers two scholarships, one open to juniors and the other to seniors, having a value of $50 and $100 respectively.

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 Frederick C. Thwaits Scholarship

Mr. Frederick C. Thwaits, of Milwaukee, has generously made provision for an annual scholarship of $250, to be awarded to a young man in the graduating class of one of the Milwaukee high schools, on a basis of scholarship and need of financial assistance.

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, the annual value of which is $250.

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 a sub-committee of the Faculty Committee on Loan Funds, consisting of Professors Olson and Bull.

The Graduating Class Fund

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

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. 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. In 1905-06 nearly four hundred positions were secured for over one hundred men, representing about $6,000. The General Secretary of the Young Men's Christian Association has direction of the employment, 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.

PRIZES IN RHETORIC AND ORATORY

The Steensland Prize in Debate and Essay

Hon. Halle Steensland, of Madison, has given the sum of $300, to be known as The Steensland Prize in Debate and Essay. One hundred dollars is to be awarded each year, beginning in 1905-06, as follows: Seventy dollars to the best three debaters in a debate open to all the students of the University, to be thus apportioned: Forty dollars to the one who stands first in such

contest; twenty dollars to the second, and ten dollars to the third. Thirty dollars of the one hundred is to be given for the best essay. For the three years the subjects are: (a) Good citizenship: What is it, and how can it best be promoted. (b) The habit of punctuality a prime element in character, and an important requisite for a successful life. (c) The simple life: What is its scope and its value.

The Cream City Prize in Oratory

There has been presented to the University by citizens of Milwaukee, the sum of $500, to be known as The Cream City Prize in Oratory. One hundred dollars will be awarded each year to the winner of the Final Oratorical Contest in the University, which is preliminary to the Northern Oratorical League Contest. The friends who have generously given this prize are: Mrs. E. P. Allis, Mr. James M. Pereles, Mr. Frank Bigelow, Mr. Howard Green, and Mr. William M. Osborne.

The Albert O. Trostel Prize in Debate

A sum of $500 was given, in 1905, by Mr. Albert O. Trostel, of Milwaukee, to be used, not to exceed $100 each year, for the promotion of intercollegiate debating in the University. The prizes may be in the form of medals, or in such other form as will, in the judgment of the President of the University and the professor of rhetoric and oratory, best promote excellence in such intercollegiate work.

SOCIETIES AND PUBLICATIONS

LITERARY AND SCIENTIFIC SOCIETIES

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

The most important scientific organization in the University is the Science Club, which includes both officers of instruction and advanced students, and seeks to promote an interest in scientific study and research. It conducts public meetings for the discussion of scientific topics of current interest. A bronze medal, executed by T. Moring, London, is annually awarded by the Club for the best baccaulaureate 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 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 effected, similar results are reached by means of the

various seminaries. The graduate students of the University maintain a Graduate Club. 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, and 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.

PUBLICATIONS OF THE UNIVERSITY

The University issues five series of publications, giving the results of research in the University, under the general title, *Bulletin of the University of Wisconsin.* These series are (1) Economics and Political Science, (2) History, (3) Philology and Literature, (4) Science, (5) Engineering.

The Washburn Observatory issues the *Publications of the Washburn Observatory*, edited by Professor George C. Comstock.

From the College of Agriculture are issued the *Bulletins of the Experiment Station*, the *Annual Reports*, and the *Bulletin of the Farmers' Institutes.*

A further statement in reference to the above publications is found in the Appendix. Application should be made to E. F.

Riley, Secretary of the Regents, for the *Bulletin*, to Professor G. C. Comstock for the publications of the Washburn Observatory, and to Dean W. A. Henry for the publications of the College of Agriculture.

Besides these official publications of investigations the following are edited at the University.

Bulletins of the Wisconsin Geological and Natural History Survey, edited by Professor E. A. Birge, Director.

Transactions of the Wisconsin Academy of Sciences, Arts and Letters, edited by Professor C. E. Allen, Secretary.

The Pharmaceutical Review, edited by Professor Edward Kremers.

Paedagogische Monatshefte, Professor Edwin C. Roedder, Associate Editor.

The University also issues a general series of the *Bulletin*, which includes the annual Catalogue, special announcements of the Graduate School, the Summer Session, the College of Engineering, the College of Agriculture, the College of Law, the School of Music, the Course in Commerce, the Course in Pharmacy, and of various departments in the College of Letters and Science. These publications are issued during the second semester, and may be had upon application to the Registrar of the University.

The *Directory of Officers and Students* is issued by the University in the early part of the academic year. It gives the University and city address of the officers of instruction and government, and the home and city address and the class of each student.

The General Catalogue of the Officers and Graduates of the University of Wisconsin gives a complete list and classification of the graduates of the University and their present address and occupation, and the terms of service of the regents and members of the instruction force. This catalogue gives also a list of the recipients of honorary degrees, and of higher degrees conferred for work done. It is published once in five years, and may be had upon application to the Secretary of the Regents. An edition has been issued during the present year under the editorship of Mr. Max Loeb, Secretary of the Alumni Association.

STUDENT AND ALUMNI PUBLICATIONS

The publications conducted by the students include *The Daily Cardinal;* a bi-weekly illustrated humorous publication, *The*

Sphinx; a monthly, *The Wisconsin Literary Magazine;* and an annual, *The Badger*, issued by the Junior Class. The students of the College of Engineering issue a quarterly publication, *The Wisconsin Engineer*. *The Student Farmer*, a monthly publication, is issued by the students of the College of Agriculture. A monthly journal, *The Wisconsin Alumni Magazine*, is issued by 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 Index.

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 pp. 67-75.

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 LANGUAGE:
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
Commercial Law may be offered under Civics ..... ½ unit
ECONOMICS AND COMMERCIAL GEOGRAPHY, combined, 1 unit; separately, ½ unit each.
SCIENCE ..... 1, 2, 3, or 4 units
Botany ..... 1 or 2 units
Chemistry ..... 1 or 2 units
Physics ..... 1 or 2 units
Physical Geography and Geology ..... 1 or 2 units
Physiology ..... ½ unit
Zoology ..... 1 or 2 units
MANUAL TRAINING, OR OPTIONAL SUBJECT (See below) ..... 1 unit

LIMITATIONS.—Not more than four of the required fourteen units will be accepted in any one subject. No foreign language course of less than two units will be accepted from students

presenting only one foreign language. Students who present not less than three units of one foreign language may receive credit for one unit of a second foreign language.

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

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

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

REQUIREMENTS FOR ADMISSION TO THE SEVERAL COLLEGES AND COURSES

College of Letters and Science.—The studies under I, and electives under II, to make fourteen units.

Students entering this college are advised to present Latin and a second foreign language, to the amount of at least six units. The requirements in foreign language for the degree of Bachelor of Arts are as follows: 16 unit hours for those who offer four years or more of language at entrance; 24 unit hours for those who offer less than four years of language at entrance. (See p. 94.)

College of Engineering.—The following units are required of all:—

English .....2 units
Algebra .....1½ units
Geometry .....1 unit

GERMAN OR FRENCH.....2 units
OR LATIN.....4 units
PHYSICS.....1 unit

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

All students entering the College of Engineering are required to pass an examination in algebra. It is essential that students in the engineering courses shall possess a good working knowledge of algebra *at the time when they begin their course*, and it is the purpose of the examination to secure this by requiring a review of the subject shortly before entering the University. Students failing in the examination will not be permitted to enter the regular algebra classes for engineering students until the deficiency is made up.

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

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

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

PRE-MEDICAL COURSE.—The studies under I, and electives under II, to make fourteen units. Students entering this course are advised to present two units of Latin, inasmuch as the medical schools require this amount of Latin for entrance and the University offers no opportunity for doing this work; they are also advised to present four units of German.

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 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.

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. The two units in English required of all applicants for admission should be made up of composition and rhetoric, and readings in English classics, as follows:

COMPOSITION AND RHETORIC. All students entering the University will be examined in English composition. This examination will be a simple and practical one, designed to test the student's ability to express himself in clear, correct, idiomatic English. The student will be required to write an essay, or more than one, on a familiar theme, planning his work by paragraphs and constructing both paragraphs and sentences in accordance with the simpler principles of composition. No student will be passed whose work shows serious weakness in spelling, punctuation, grammar, or sentence structure; neatness of manuscript will also be taken into account. Facility of expression will not be considered an offset to serious weakness in spelling, punctuation, or grammar. Students found deficient in English composition who do not make up such deficiency in one year will be dropped from the University.

READING OF CLASSICS. The following lists include (1) a series of books for general reading, which may also be used as a basis for work in English composition; (2) a limited number of masterpieces for thorough study. In addition to the essays called for under the head of Composition and Rhetoric there will be required such further tests as seem suited to secure a careful reading of all the books prescribed in series (1). In the case of the books set for more thorough study, the candidate will be examined on subject-matter, form, and substance, and the examination will be of such a character as to require a thorough study of each of the works named, in order to pass it successfully.

1. For General Reading and Composition work:—

In 1907 and 1908: Shakespeare's *Macbeth* and *The Merchant*

of Venice; The Sir Roger de Coverley Papers in *The Spectator;* Irving's *Life of Goldsmith;* Coleridge's *Ancient Mariner;* Scott's *Ivanhoe* and *The Lady of the Lake;* Tennyson's *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Lowell's *Vision of Sir Launfal;* George Eliot's *Silas Marner.*

In 1909, 1910, 1911:

Group I. (two to be selected).

Shakespeare's *As You Like It, Henry V, Julius Caesar, The Merchant of Venice, Twelfth Night.*

Group II. (one to be selected).

Bacon's *Essays;* Bunyan's *The Pilgrim's Progress, Part I; The Sir Roger de Coverley Papers* in *The Spectator;* Franklin's *Autobiography.*

Group III. (one to be selected).

Chaucer's *Prologue;* Spenser's *Faerie Queene,* (selections); Pope's *The Rape of the Lock;* Goldsmith's *The Deserted Village;* Palgrave's *Golden Treasury (First Series), Books II and III,* with especial attention to Dryden, Collins, Gray, Cowper, and Burns.

Group IV. (two to be selected).

Goldsmith's *The Vicar of Wakefield;* Scott's *Ivanhoe;* Scott's *Quentin Durward;* Hawthorne's *The House of the Seven Gables;* Thackeray's *Henry Esmond;* Mrs. Gaskell's *Cranford;* Dickens' *A Tale of Two Cities;* George Eliot's *Silas Marner;* Blackmore's *Lorna Doone.*

Group V. (two to be selected).

Irving's *Sketch Book;* Lamb's *Essays of Elia;* De Quincey's *Joan of Arc* and *The English Mail Coach;* Carlyle's *Heroes and Hero Worship;* Emerson's *Essays* (selected); Ruskin's *Sesame and Lilies.*

Group VI. (two to be selected).

Coleridge's *The Ancient Mariner;* Scott's *The Lady of the Lake;* Byron's *Mazeppa* and *The Prisoner of Chillon;* Palgrave's *Golden Treasury (First Series) Book IV,* with especial attention to Wordsworth, Keats, and Shelley; Macaulay's *Lays of Ancient Rome;* Poe's *Poems;* Lowell's *The Vision of Sir Launfal;* Arnold's *Sohrab and Rustum;* Longfellow's *The Courtship of Miles Standish;* Tennyson's *Gareth and Lynette, Lancelot and Elaine,* and *The Passing of Arthur;* Browning's *Cavalier Tunes, The Lost Leader, How They Brought the Good News from Ghent to Aix, Evelyn Hope, Home Thoughts from Abroad, Home Thoughts from*

the Sea, Incident of the French Camp, The Boy and the Angel One Word More, Hervé Riel, Pheidippides.

2. For thorough study:

In 1907 and 1908: Shakespeare's *Julius Caesar; Milton's L'Allegro, Il Penseroso, Comus,* and *Lycidas;* Burke's *Speech on Conciliation with America;* Macaulay's *Essay on Milton,* and *Life of Johnson.*

In 1909, 1910, 1911: Shakespeare's *Macbeth;* Milton's *Lycidas, Comus, L'Allegro,* and *Il Penseroso;* Burke's *Speech on Conciliation with America,* or Washington's *Farewell Address* and Webster's *First Bunker Hill Oration;* Macaulay's *Life of Johnson,* or Carlyle's *Essay on Burns.*

In addition to these, it is expected that several other English classics will be read each year. The lives and characters of the authors read and the history of their times should be studied to a reasonable extent, but the chief aim should be *intelligent reading.* Particular attention should be given to enlarging the student's knowledge of vocabulary and idiom.

ENGLISH LITERATURE. One or two optional units may be offered in this subject in addition to the two prescribed units, described above. If one unit is offered, the work should include the history of English literature and the reading of representative authors of each period. The second optional unit may consist of additional work in the reading and study of the works of the chief English and American authors.

Mathematics

ALGEBRA. 1 or 1½ units. The unit required of all students should include the following subjects: Addition, subtraction, multiplication, division, equations of the first degree with one unknown number, simultaneous equations of the first degree, factors, highest common factor, lowest common multiple, quadratic equations, simultaneous equations above the first degree, elementary theory of indices, and radicals.

An additional half year of algebra is strongly recommended, and is required of all engineering students. The work should cover the following subjects: Simultaneous quadratic equations; ratio, proportion and variation, including graphical representation of simple relations between two variables; arithmetical and geometrical progressions; binominal theorem for positive integral

exponents; logarithms, including use of tables in simple numerical work.

GEOMETRY. 1 unit. Plane and solid geometry. In solid geometry special attention should be given to the geometry of the sphere

TRIGONOMETRY. ½ unit. A knowledge of the important properties of the trigonometric functions, the addition theorem, and the more important formulas which follow from it, and the solution of the various cases of right and oblique plane triangles. The student should become familiar with the use of logarithmic and trigonometric tables.

GEOMETRY AND MECHANICAL DRAWING. ½ unit. Students who have taken work in geometry in addition to the unit required of all and have had an approved course in mechanical drawing may receive ½ unit credit therefor.

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 a 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. Either (1) a knowledge of the leading facts relating to the rise and growth of modern industry, with special reference to the industrial history of England and the

United States; or (2) 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 of descriptive chemistry, consisting of both class-room and laboratory work. This course should include the more common metals and non-metals and their compounds. Two periods of laboratory work are considered as equivalent to one class exercise. A careful record of laboratory experiments should be kept, which must be submitted for examination by the committee on entrance examinations. Remsen's *Introduction to the Study of Chemistry*, Newell's *Experimental Chemistry*, and Storer and Lindsay's *Elementary Manual of Chemistry*, are suitable text-books among the many published. A laboratory manual should be used with any text.

PHYSICS. 1 unit. A year's course in physics, including continuous and systematic laboratory practice; any one of the standard text-books may be used.

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 of topographic forms. (2) Field study. The nature of this must be controlled by the locality; but every candidate offering physical geography will be expected to submit a statement of the field trips required in his course. (3) The interpretation and habitual use of topographic maps, weather maps, charts, and pictures.

Where it is not possible to give a full year's work to the sub-

ject, physical geography may be combined with botany and physiology in the construction of 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 the histology should also be shown by specimens.

ZOOLOGY. 1 unit. Instruction in this subject must include as much as four periods of laboratory work per week. The student must dissect at least eight to ten types of animals and make careful descriptions and drawings of this work. The types must be selected from the different branches of the animal kingdom. Knowledge of life histories and habits and relation of environment is also expected. The laboratory work must be accompanied with class exercises, so that the student may gain an intelligent appreciation of the meaning of his observations and of the bearing on zoological science of the facts observed by him. Lectures or text-book work on classification and general zoology must be a part of the course. The nature and scope of work expected may be indicated by the text-books of Needham, Davenport, Jordan, and Kellogg.

Language

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

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

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

LATIN. 2 units. Grammar and elementary book; *Caesar,* four books or an equivalent amount of *Nepos, Caesar* (at least two books) and selections; composition. Students who so present two units and others whose preparation in Latin is, for any reason, deficient may continue the study in the University with course A, which may be credited towards the bachelor's degree.

No such credit, however, will be given for third and fourth year high school Latin.

GERMAN. 2, 3, or 4 units. German may be offered for entrance as a subject of two, three, or four units, requiring respectively two, three, or four years of high school study and approximately corresponding to the "elementary," "intermediate," and "advanced" courses outlined in the "Report of the Committee of Twelve." This report can be procured, at the price of sixteen cents, from D. C. Heath & Co., Boston, and should be in the hands of every secondary teacher of German.

A. Elementary German. 2 units. Applicants should be able to pronounce and to translate at sight (into good idiomatic English) simple German prose, help being given upon unusual words and constructions, to put easy English sentences into German, and to carry on a very simple conversation based upon the texts set for translation. The required amount of grammar is contained in the current "brief" grammars, or in the "first parts" of larger grammars like Joynes-Meissner or Thomas. Of the strong verbs only the more usual are required. Applicants should have read not less than 200 pages of easy German, chiefly modern narrative prose, but including some simple poems and one or two short plays. For suitable texts see the "Report," pp. 63-64.

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. Of the latter about one-half should be taken from modern prose and the other half from poetry and the easier plays of Schiller, Goethe, or Lessing. The work in grammar, accompanied by exercises in composition, should include the less usual strong verbs, the principal uses of prepositions, conjunctions, and modal particles, and the essentials of syntax and word formation. For suitable texts see the "Report," p. 71.

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, especially upon the lives and works of the authors studied. 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, answering in that language questions asked by the instructor. For suitable texts see the "Report," p. 73.

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, 2M, 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, unless their particular course of study requires a special class in German, as for example 3S, 3C, or 3E. See Index under German.

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 course 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 Capitan Veneno*, Alarcon's *Novelas Cortas*, *El Pajaro Verde*, and at the end of the course, *Dona Perfecta* or *José*. The student should be taught the Castilian pronunciation.

Manual Training

1 unit. In order to present manual training for entrance, the applicant must have devoted 180 periods to each of the following two divisions of the subject:

(1) Shop Work { Wood work. Forging.

(2) Drawing { Freehand drawing. Mechanical drawing.

A note book containing a description and sketches of the shop work is required.

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 13 and 14, beginning at 9 o'clock A. M. The later examinations will be held on Tuesday and Wednesday, September 24 and 25, beginning at 9 o'clock A. M. Students who are in any doubt as to their qualifications are urged to present themselves in June. All candidates are required to be present at 9 o'clock on the first day of the examinations.

Candidates for admission to the University may divide the subjects and take the examinations in two trials; but a failure to

pass all of the subjects in the two trials will necessitate a complete re-examination.

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

ADMISSION UPON CERTIFICATE

ACCREDITED SCHOOLS.—Any high school or academy whose course of instruction covers the branches requisite for admission to the University may be admitted to its accredited list of preparatory schools after a satisfactory examination by a committee of the Faculty. Application for such an examination may be made by an officer of the school to the President of the University, 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 admitted upon certificate, under the conditions for admission without foreign language. (See Index under Admission.)

Principles of accredited schools are requested to note the statement regarding the examination of freshmen in English, as stated under the heading Scope of the Preparatory Work (see Index), and also the statement regarding the additional requirement and

examination in algebra for admission to the College of Engineering, as stated under Requirements for Admission (see Index).

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

GRADUATES OF NORMAL SCHOOLS

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

The University offers a course designed especially for Normal school graduates leading to the degree of Bachelor of Philosophy. This course includes advanced instruction in education and those studies in history, languages, and science, both required and elective, which will best fit the student for the successful conduct of his chosen profession. To this course graduates of the advanced courses of the Wisconsin Normal schools will be admitted with the rank of junior on the presentation of their diplomas.

Graduates of the Normal schools of the State who desire to become candidates for the degree of Bachelor of Arts will be given credits towards that degree as follows:—

a. All graduates of the advanced courses in a Wisconsin Normal school shall receive a credit of 38 unit hours, provided that, before entering the advanced course of the Normal School, they have had the full equivalent of a four years standard high school course, as given in a high school on the accredited list of this University. But those graduates who enter without having absolved the University entrance requirements in foreign language before entering the advanced course of the Normal school must

meet this requirement before graduation from the University. This will ordinarily require extra work to the extent of four hours a week for one year, which may not be credited as part of the 120 unit-hours required for graduation.

b. A graduate who has had the preparatory work specified in *a*, and who, during his course at the Normal school, has elected his studies with special reference to attending the University, may, on application, secure additional credits to an amount not exceeding a total of 45 hours.

c. A student who applies for such additional credit must present a full statement of his work at the Normal school, which will be examined and rated by the Committee on Advanced Standing. The studies presented for a credit under this agreement must be fully equivalent to the corresponding courses in the University. Credit beyond 38 hours will ordinarily be granted only to students who present college work in foreign languages. Application for laboratory credit in science must be accompanied by laboratory or field books. No credit will be given for any work in the Normal school done in a quarter when more than 20 hours per week were taken, except on special recommendation of the president of the school.

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

STUDENTS FROM OTHER COLLEGES AND UNIVERSITIES

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

By arrangement with Lawrence University and Ripon College, 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 Lawrence and Ripon 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 Lawrence and Ripon who enter the College of Law 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 evpects to graduate.

ADMISSION OF ADULT SPECIAL STUDENTS

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

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, except in the College of Law, where they must be paid for the year at the beginning of the first 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 undergraduates of the College of Letters and Science, whether they are in attendance at the University or are studying *in absentia;* 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 resident students, provided that after such students have paid fees to the amount they would naturally pay, if residents, 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.

All male students of the University are required to pay a gymnasium fee of one dollar per semester, except Short and Dairy Course students in Agriculture, who pay seventy-five cents for the year. Students in the College of Law pay a gymnasium fee of $2 for the year at the beginning of the first semester.

Tuition is free for all students from the State of Wisconsin, except in the College of Law. 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 authorized to remit fees to the extent of $10 per semester to company officers of the battalion having the rank of captain or above, and to award a prize of $50 at the end of each year of service of the field officers, colonel, lieutenant colonel, and adjutant.

TUITION AND FEES

College of Letters and Science

Resident tuition	FREE.
Non-resident tuition, per semester	$15 00
Incidental fee for all students, per semester	10 00
Gymnasium fee for all men students, per semester	1 00
Additional fee for students, electing studies in the College of Law, per semester hour	3 00

College of Engineering

Resident tuition	FREE.
Non-resident tuition, per semester	$20 00
Incidental fee for all students, per semester	15 00
Summer vacation work	7 00
Gymnasium fee for all men students, per semester	1 00

College of Agriculture

Resident tuition	FREE.
Long Course, non-resident tuition, per semester	$15.00
Incidental fee for all Long Course students, per semester	10 00
Incidental fee for all Short and Dairy Course students, per term	5 00
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
Gymnasium fee for Long Course students, per semester	1 00
Gymnasium fee for Short and Dairy Course students, per semester	75
Farmers' Course, resident tuition	FREE
Farmers' Course, non-resident tuition	$5 00
Farmers' Course, non-resident incidental fee	5 00

College of Law

Tuition fee, per annum	$50 00
Gymnasium fee, per year	2 00
Additional fee per annum for Letters and Science students taking 7 hours per week in law	$25 00

The fee for a single semester of any year is sixty per cent of the entire fee for that year.

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.

There is no additional fee for non-resident students in this college.

Summer Session of the College of Letters and Science, and Summer Session for Apprentices and Artisans

General fee	$15 00

Summer School of Library Science

Resident tuition	FREE.
Non-resident tuition	$20 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.

LABORATORY FEES

BIOLOGICAL LABORATORIES.—The laboratory fee for the elementary course in biology and for the other five-fifths 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; dissection, $10 per part dissected. There is also a breakage fee of $2.50 a semester. The fee for bacteriology is $1.50 for each unit hour of credit.

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.

GEOLOGY AND MINERALOGY.—Blowpipe analysis, per semester, $6; blowpipe analysis, two-fifths study, $4; three-fifths study, $6; petrography, per semester, $6.

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 fees required of graduate and long course students in the several laboratories are: Chemistry, $1 per unit-hour per semester, with a minimum refundable breakage deposit of $2.50; bacteriology, $1.50 per-unit hour per semester, with a refundable breakage deposit of $2.50; dairy, $1 per unit-hour per semester, with a refundable breakage deposit of $2.50; agricultural engineering, 50 cents per unit-hour per semester, with a minimum refundable breakage deposit of $2.50; soils and horticulture, each $1 per unit-hour per semester. Resident short course students pay a laboratory fee of $2. Non-resident short course students pay a laboratory fee of $12. All short course 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 in 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.

Gymnasium fee, per semester.....$1 00
Locker fee, per year..... 1 50

Young women are required to take gymnastic exercises during the first two years of their course. A gymnasium fee of $1 per year is required, and $1 additional from those who make use of a locker. They must also provide themselves with a suitable costume, directions for which will be found on a subsequent page under the head of Physical Training. (See Index.)

CHADBOURNE HALL

The price of rooms in Chadbourne Hall varies from $50 to $120 a year, according to location. A circular giving detailed information may be obtained by addressing the Secretary of the Regents.

Application for rooms in the Hall may be made at any time to the Secretary of the Regents, and must always be accompanied by a deposit of $10.

For the college year 1906-07 applications for rooms at Chadbourne Hall will be received only from freshmen, sophomores, and juniors up to August 1st, 1906, after which date applications from seniors may be received. For the college year 1907-08 applications will be received only from freshmen and sophomores until August 1st, 1907, after which applications from juniors and seniors will be received up to the capacity of the Hall.

Rooms are assigned after August 1st by the Mistress of the Hall in the order of application. The deposit of $10 required from all students, new as well as old, when making application, will be credited on the rent of the room, if taken, but if not taken it will be forfeited, unless notification is received by the Secretary of the Regents prior to August 1st. The balance due for rent must be

paid to the Secretary, not later than the second week after the beginning of each semester.

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 for the full suite during the time it is occupied by her alone.

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 carpeted and furnished, but occupants are expected to provide washstand furniture, towels, napkins rings, sheets, pillow cases, counterpanes, and blankets.

At present the cost of board at Chadbourne Hall is $3.50 a week for a semester. For shorter periods the rate is $4 a week. Any exception to this rule will be entirely voluntary with the matron in charge.

Chadbourne Hall has accommodations for one hundred women students. It 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 that occupy this building are under the immediate charge of the Mistress of the Hall; they must board in the Hall, and are expected cheerfully to conform to the requirements necessary for a family of students.

An account of the women's gymnasium in Chadbourne Hall may be found under the heading Physical Training. (See Index.)

ROOMS AND BOARD

Rooms, furnished and unfurnished, can be obtained in the city at prices per week ranging from $1 to $4 a person. The cost of board in clubs is from $2.50 to $3 a week; in private families from $3 to $4 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 in Agriculture.

Bachelor of Science, Civil Engineering Course.

Bachelor of Science, Sanitary Engineering Course.

Bachelor of Science, Mechanical Engineering Course.

Bachelor of Science, Electrical Engineering Course.

Bachelor of Science, General Engineering Course.

Bachelor of Science, Applied Electrochemistry Course.

Bachelor of Science, Pharmacy Course, upon graduates from the four-year course in Pharmacy.

Graduate in Pharmacy, upon graduates from the two-year course in Pharmacy.

Graduate in Music, upon graduates from the four-year course in Music.

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

The conditions on which the bachelor's degrees are given will

be found stated under the appropriate colleges and courses on subsequent pages.

HIGHER DEGREES

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

The conditions 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

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Cora S. Woodward, Adviser of Women.

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J. B. Overton, Ph. D., Instructor in Botany.
L. J. Paetow, Ph. D., Instructor in History.
D. L. Patterson, B. S., Instructor in History.
Otto Patzer, M. L., Instructor in French.
F. R. Perrin, B. L. S., Assistant in French.
U. B. Phillips, Ph. D., Instructor in American History.
W. H. Price, Ph. D., Instructor in Political Economy.
Eduard Prokosch, Ph. D., Instructor in German.
C. M. Purin, Student Assistant in German.
G. M. Reed, A. M., Assistant in Botany.
F. W. Roe, A. M., Instructor in English.
W. E. Roloff, A. M., Assistant in German.
A. M. Ruggles, A. B., Assistant in Physics.
H. U. Russell, B. S., Assistant in Political Science.

MARGARET A. SCHAFFNER, Ph. D., Assistant in Political Science.
E. B. SCHLATTER, A. M., Instructor in Romance Languages.
R. L. SCHULZ, Student Assistant in Pharmaceutical Chemistry.
J. F. SCOTT, M. A., Assistant in Education.
R. B. SCOTT, Ph. B., Instructor in Political Science.
L. P. SHANKS, A. M., Instructor in Romance Languages.
F. L. SHINN, Ph. D., Instructor in Analytical Chemistry.
A. F. SIEVERS, Ph. G., Assistant in Pharmaceutical Chemistry.
E. R. SMITH, A. B., Instructor in Mathematics.
V. A. SUYDAM, B. S., Assistant in Physics.
E. H. TEN EYCK, Instructor in Athletics.
E. M. TERRY, A. M., Instructor in Physics.
C. A. TIBBALS, Jr., A. M., Instructor in Chemistry and Assaying.
ELSBETH VEERHUSEN, Ph. D., Instructor in German.
C. T. VORHIES, B. S., Assistant in Zoology.
GEORGE WAGNER, M. A., Instructor in Zoology.
N. E. WAYSON, A. B., Assistant in Bacteriology.
A. W. WEBER, Ph. M., Assistant in Education.
R. A. WETZEL, B. S., Assistant in Physics.
EDMUND WILD, M. S., Assistant in German.
E. H. WILLIAMS, M. A., Assistant in Physics.
H. C. WOLFF, M. S., Instructor in Mathematics.
H. S. WOODS, M. A., Instructor in Chemistry.
E. C. WOOLLEY, Ph. D., Instructor in English.

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

1. General Conditions

The unit-hour 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 reegularly prescribed military drill or physical exercise in the gymnasium are credited as one unit-hour. Students are expected to take 15 hours per week in recitations, lectures, and laboratory work, making 30 unit-hours per year, and 120 for the course. In addition two hours per week (one unit-hour per semester) of gymnastics are required during the first two years, making a total of four unit-hours. Men are required to drill two hours per week during the first two years, giving a credit of four unit-hours. The total requirements for class-room work, military drill, and the gymnasium are, therefore, 128 unit-hours for the men, and 124 for the women.

Students excused from drill or gymnastics are required either to make up the work before graduation, or if the excuse is based on permanent incapacity, to make good the requirement by work in other departments.

No student will be permitted to receive a credit toward graduation of more than eighteen unit-hours in one semester in regular studies except by permission of the Faculty, obtained in advance.

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

2. Required Studies

a. English, 6 unit-hours (3 hours per week for two semesters); to be taken in the first year of residence.

b. Language: 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. 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 units, 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 units for graduation, though not as part of the required units of language.

c. Two of the following: Natural Science, 10 unit-hours; Mathematics, 6 unit-hours; History, 6 unit-hours.

Under natural science are included biology, chemistry, physics, and geology. The latter science cannot be taken in the freshman year; the others may be so elected. All are five-hour courses with laboratory work, or field work in geology.

3. Major Study and Thesis

Major Study.—At the beginning of the sophomore or the junior year, every candidate for the degree of Bachelor of Arts shall select as his major subject the work of some one department

in the College of Letters and Science. This department will determine the manner in which the work of the major shall be completed; the work required in the major (including thesis and required work) shall not be less than 20 hours, nor more than 40 hours; the credit for the thesis being four hours.

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 professor at the head 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 the major study, and must have the character of a scholarly dissertation on the subject. The thesis must be typewritten on paper of good quality, 8x10 inches in size, and must be bound according to specifications furnished by the Librarian of the University. It must be deposited in the University Library by June 10th.

Before the thesis is accepted, it must be approved by the instructor under whom the work has been done, and by the head of the department. When accepted, the thesis becomes the property of the University.

4. Electives

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

5. Studies of the Freshman Year

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

GROUP I. At least one subject must be taken from this group and not more than 10 unit-hours may be chosen from any one subject.

Greek: 5 or 3 hours per week.
Latin: 5 or 3 hours per week.
German: 4 hours per week.
French: 4 hours per week.
Spanish: 4 hours per week (in the Course in Commerce).

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

Mathematics:

Algebra: 3 hours, one semester.

Trigonometry: 3 hours, one semester.

These courses in Mathematics are repeated each semester.

Science:

Biology: 5 hours.

Chemistry: 5 hours.

Physics: 5 hours.

Astronomy: 3 hours, one semester.

Physiography of the United States: 3 hours, one semester.

Physical Geography: 3 hours, one semester.

History:

Ancient History: 2 hours.

English History: 3 hours.

Medieval History: 3 hours.

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

The following courses which are open to freshmen will be found described under Departments of Study 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 Study.

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

ELECTION OF STUDIES IN OTHER COLLEGES

Candidates for the degree of Bachelor of Arts are allowed to elect in the College of Mechanics and Engineering, the College of

Law, the College of Agriculture, the Course in Pharmacy, the Course in Commerce, the Course in Music, or the Course in Home Economics, certain studies enumerated below to an amount not to exceed the equivalent of twenty unit-hours. This privilege will not be extended to Normal graduates attempting to graduate in two years, nor to undergraduates of other colleges who enter this University with the rank of seniors.

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

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

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

Students who have graduated from the College of Letters and Science will be admitted to second year standing in the College of Law, provided that while seniors in the College of Letters and Science they completed fourteen semester hours in the prescribed work of the first year of the College of Law, and in addition thereto have completed six semester hours of work in the College of Letters and Science from a group of studies to be designated by the Faculty of the College of Law. The studies designated for 1906-07 are as follows: Political Science 2, (Elementary Law), Political Science 9, (Roman Law), Political Science 18, (American Constitutional Law), Political Science 18, (International Law), Political Science 27 (Comparative Legislation).

The following studies may be elected:

In the College of Engineering:

Mechanical Drawing, courses 1, 2, and 3.
Applied Mechanics, 1, 2, 3, 4, 5, and 6.
The Materials of Construction, 1, 2, and 3.

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

In the College of Law:

Administrative Law 1, 2, 3, 4.
Contracts.
Commercial Paper.
Real Property.
Torts.
Private Corporations.
Constitutional Law.
Wills.
Domestic Relations.
Common Law Pleading.
Equity.
Evidence.
Agency.
Public Service Companies.

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

In the College of Agriculture:

Agricultural Chemistry, 1, 2, and 3.
Soils, 1 and 2.
Animal Husbandry, 2.
Veterinary Science, 3.

Dairy Husbandry, 4.
Horticulture, 1 and 8.
Bacteriology, 17.
Farm Engineering, 1.

In the Course in Commerce.

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

In the Course in Pharmacy:

All courses except Pharmacognosy under botany and the courses in the department of Pharmacy.

In the Course in Music:

Courses 2 to 10, inclusive.

REQUIREMENTS FOR A DEGREE IN THE COURSE IN COMMERCE

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

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

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

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF PHILOSOPHY

Course for Normal School Graduates

Graduates of the advanced courses of the Normal schools of the State are admitted to advanced standing in the College of Letters and Science on conditions given under the heading Admission (see Index). The following special course for Normal school graduates has been arranged, leading in two years to the degree of *Bachelor of Philosophy.* The course contains a minimum required amount of advanced studies in Philosophy and Education, with opportunity for further elections in those subjects. It requires also a continuous study of foreign language during the two years of the course. In other directions the student may elect his

studies. It is expected that the Normal school graduate will give especial attention to fitting himself for teaching in one or two of the main lines of instruction, and the requirements and electives have been so arranged as to permit him to attain this end. He may devote himself especially to science, to literature, to history, or to any combination of these studies. He will be required, however, to make one of these lines of study his major work, and will not be permitted to elect a large number of short, scattered courses of instruction, since it is the especial design of this course to enlarge and complete his knowledge in certain definite directions.

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

Junior Year: Latin, French, or German 4; philosophy 3; advanced education 3; language, history, English, advanced mathematics, or science 5; electives 3 to 5: 18 hours per week required.

Senior Year: Continuation of Latin, French, or German 4; electives 12; thesis 2: 18 hours per week required.

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 subsequent pages of the Catalogue. Work in the Summer Session will be credited in the same way as work in the regular session of the University, and by attendance at one session a total amount of credit may be acquired not exceeding six unit-hours.

Candidates for the degree of Bachelor of Arts who desire to graduate in three years may do so by taking 18 hours of recitations per week and by attending three summer sessions. Permission to take work to this amount will be given only to students whose standing in their studies is wholly satisfactory. No credit will be given for repetition in the Summer Session of

studies taken in the regular session of the University, or for repeating in the University work done in the summer. Students will need to select carefully their work for the summer with reference to the required and elective studies of the course in which they intend to graduate. The Summer Session offers exceptional opportunities for the preparation of a senior thesis. Any student who expects to shorten his course by means of the Summer Session should consult his class adviser in selecting his studies.

STUDENT ADVISERS

Upon entrance, each student in the College of Letters and Science is assigned to a member of the Faculty who acts as his adviser during the freshman and sophomore years. At the beginning of the junior year, at which time, if not before, the student selects his major study, a professor in 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.

DIPLOMAS AS STATE CERTIFICATES

A law enacted by the legislature of 1901 states:

"A diploma granted upon the completion of a regular collegiate course of the University of Wisconsin, if accompanied by a certificate that the bearer has completed the course of pedagogical instruction prescribed by the University for all persons who intend to teach, * * * * upon presentation to the State Superintendent shall entitle the holder to receive from that officer a certificate which shall authorize him to teach in any public school for one year."

Sections 458 *b* and *d* of the Revised Statutes provide that after one year of successful teaching the diploma of a graduate of the University may be countersigned by the State Superintendent, and that when so countersigned the diploma shall have the force and effect given by law to the unlimited state certificate.

DEPARTMENTS OF INSTRUCTION

PHILOSOPHY

PROFESSORS JASTROW, MCGILVARY, SHARP; ASSISTANT PROFESSOR BODE, AND MR. JENNER.

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

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

Primarily for Undergraduates

1. Psychology: Introductory Course. *First semester.* Professors JASTROW and SHARP, Assistant Professor BODE, and Mr. JENNER.

   Section 1. *Tu., Th., at* 9, *and F., at an hour to be arranged.* Professor JASTROW and Mr. JENNER.

   Section 2. *M., W., at* 9, *and F., at an hour to be arranged.* Professor SHARP and Assistant Professor BODE.

11. Logic. *First semester; M., W., F., at* 10 *and* 11. Repeated in the *second semester; M., W., F., at* 8 *and* 10. Assistant Professor BODE.

21. Introduction to Philosophy. The relation of philosophy to the special sciences; the point of view taken in philosophical study; the problems of philosophy and the various solutions that have been suggested: materialism; agnosticism; theism; idealism; realism; the tendencies of present-day thought. *Second semester; M., W., F., at* 9. Professor MCGILVARY.

22. German Philosophy as Reflected in German Literature. The philosophical teachings of Lessing, Herder, Goethe, Schiller, the Romanticists: Hebbel, Wagner, and Nietzsche. *First semester: Tu., Th., at* 11. (Omitted in 1907-08.) Assistant Professor BODE.
23. The Philosophic Thought of the Nineteenth Century as Reflected in English Literature. A study of Wordsworth, Carlyle, Emerson, Arnold, Tennyson, and Browning. *Second semester: Tu., Th., at* 11. Assistant Professor BODE.
24. The Philosophy of Religion. The conception of God in Christian theology and in modern philosophy; the nature of religion; the relation of religion to revelation, miracle, dogma, and morality. *First semester; Tu., Th., at* 10. Assistant Professor BODE.
31. History of Ancient and Medieval Philosophy. *First semester; M., W., F., at* 11. Professor MCGILVARY.
32. History of Modern Philosophy. A study of the development of philosophy from the Renaissance to the present day. The net results of this evolution will be summed up in an account of the philosophical thought and problems of the present. *Second semester; M., W., F., at* 11. Professor MCGILVARY.
41. Ethics: Introductory Course. *Second semester; M., W., F., at* 9. Professor SHARP.
42. Social and Political Ethics. A general study of moral rights, of the rights of personal liberty, freedom of contract, conquest, national independence, suffrage, and property. *First semester; Tu., Th.*, at 12. Course 41 is not required as a preliminary. Professor SHARP.
51. Aesthetics. A general survey of aesthetical appreciation, with practical applications to art. An introductory course requiring no previous acquaintance with aesthetics. *First semester; Tu., Th., at* 10. Professor JASTROW.

For Undergraduates and Graduates

2. Advanced Analytic Psychology. *Second semester; twice a week; hours to be arranged.* Professor SHARP.
4. Experimental Psychology. (*a*) Lectures and demonstrations. *Second semester; M., W., F., at* 9. (*b*) Laboratory practice, parallel with lectures. *Second semester;* four *hours a week, at hours to be arranged.* (*a*) and (*b*) together count as a full study. Professor JASTROW.

5. Research in Psychology. *Throughout the year; hours to be arranged.* Professor JASTROW.

6. Comparative Psychology. Lectures and assigned readings on animal psychology and mental development in man. *First semester; M., W., at* 3. (Omitted in 1907-08.) Professor JASTROW.

7. Abnormal Psychology. Lectures and assigned readings covering the main forms of unusual and abnormal mental phenomena. *Second semester; Tu., Th., at* 10. Professor JASTROW.

8. Anthropology. Lectures and readings. Tylor's *Anthropology. Second semester; Tu., Th., at* 10. (Omitted in 1907-08.) Professor JASTROW.

9. The Psychology of Language. A survey of the language-processes and their mode of action as illustrated by the study of language in its growth, in disease, among primitive peoples, in history, and as a logical product. *First semester; M., W., at* 3. (Omitted in 1906-07.) Professor JASTROW.

25. The Relation of Man to Nature. The existence of purpose in nature; the influence of the doctrine of evolution upon our conception of man's place in the universe and upon theism; the problem of freedom; the problem of evil. *Second semester; Tu., Th., at* 10. Assistant Professor BODE.

36. The British Philosophers of the Eighteenth Century. Locke, Berkeley, and Hume. *First semester; M., W., F., at* 10. Professor MCGILVARY.

37. Kant. *The Critique of Pure Reason. Second semester; M., W., F., at* 10. Professor MCGILVARY.

44. History of Morality. An outline history of moral practice in primitive, ancient, medieval, and modern times. Among the ancient historical nations studied are the Egyptians, Babylonians, Hindus, Hebrews, Greeks, and Romans. The relation of primitive Christian morality to previous moral types will be considered; and finally modern occidental morality will be viewed as a result of the joint action of many influences. *First semester; M., W., F., at* 10. Professor MCGILVARY.

45. The Evolution of Morality. *First semester; twice a week.* Professor SHARP.

46. Contemporary Moralists. *Second semester; twice a week.* Professor SHARP.

Primarily for Graduates

10. Psychological Seminary. *Throughout the year; alternate weeks.* Professor JASTROW.
13. Advanced Logic. *Two hours a week throughout the year.* Assistant Professor BODE.
40. Metaphysical Seminary. *Throughout the year; Tu., 4 to 6.* Professor MCGILVARY.
47. Ethical Seminary. *Throughout the year; alternate weeks; W., 4 to 6.* Professor SHARP.

EDUCATION

PROFESSOR O'SHEA, ASSOCIATE PROFESSOR ELLIOTT, ASSISTANT PROFESSOR TRESSLER, DR. DEARBORN, MR. SCOTT, AND MR. WEBER.

Primarily for Undergraduates

1a. History of Education. Throughout its treatment, the history of education is regarded from the points of view of its place in the *professional* education of teachers, and its primary purpose of affording to prospective teachers a basis for the interpretation and appreciation of the essential features of particularily modern elementary and secondary education. While the two courses represent a continuity in presentation, each semester's work is considered a unit in itself, and consequently either course may be elected independently of the other.

A study of the origins and evolution of the more significant cant of present day educational ideals, institutions and practices. Special attention during 1907-08 to the historical development of the aims, curricula, organization, etc., of secondary educational institutions. *Two lectures and one recitation per week, supplemented by collateral readings and special reports. First semester; M., W., F., at* 9. Associate Professor ELLIOTT.

1b. History of Education in the Nineteenth Century. See explanatory note under Education 1a. A study of the development of modern educational standards and institutions during

the past century, with special emphasis upon American education. *Two lectures and one recitation per week, supplemented by collateral readings and special reports. Second semester; M., W., F., at* 9. Associate Professor ELLIOTT.

11a. Mental Development. The work of this semester will cover (1) the general characteristics of development; (2) the theory of recapitulation in development; (3) motor development; (4) mental economy and hygiene in development. The educational bearings of the principles discussed will be indicated. *First semester; M., W., F., at* 10. Professor O'SHEA.

11b. Mental Development. This is a continuation of course 11a, but it may be elected separately. The work will cover (1) intellectual development; (2) emotional development; (3) adolescence. *Second semester; M., W., F., at* 11. Professor O'SHEA.

40. Elementary Educational Psychology. An introductory course in psychology, with special reference to its educational aspects and applications. *Second semester; M., W., F., at* 8. Dr. DEARBORN.

For Undergraduates and Graduates

4a. Administration and Supervision of Education. This and the succeeding course, 4b, have been designed particularly for those preparing for the studies of school superintendents and principals. While the two courses represent a continuity in presentation, each semester's work is considered a unit in itself, and consequently, either course may be elected independently of the other.

A study of the forms of administrative control of American eration and problems relating to the organization of public education in cities. Lectures, reports and class discussions. *First semester; Tu., Th., S., at* 9. Associate Professor ELLIOTT.

4b. Administration and Supervision of Education. A study of the development, social significance, modes of organization and supervision of the more important types of supplementary agencies for public education. The problems arising from compulsory education and child labor laws; evening and vocational schools; schools for backward, defective and delinquent children; vacation schools and playgrounds;

evening lecture systems and other forms of supplemental education for adults. Lectures, reports, and class discussions of selected topics. *Second semester; T., Th., at* 9. Associate Professor ELLIOTT.

5. Comparative Educational Administration. Lectures and special reports. A comparative study of the educational systems of Germany, France, and England, with special emphasis upon those features possessing significance for American education. Open only to students who secure permission of the instructor. *Second semester; S.,* 9 *to* 11. Associate Professor ELLIOTT.

13. Principles of Education. Treated with special reference to the high school. The first half of the course is devoted to a study of the foundations of educational theory viewed in the light of contemporary thought. The second half is devoted to a consideration of practical problems of curriculum, methods, and management. *First semester; M., W., F., at* 11. *Repeated the second semester at* 10. Professor O'SHEA.

15. Contemporary Educational Movements. Contemporary movements at home and abroad affecting courses of study, the general character and method of teaching, and school organization and management. *First semester; M., W., at* 12. Professor O'SHEA and Associate Professor ELLIOTT.

16. Educational Classics. With reference particularly to present problems. Readings in Montaigne, Locke, Rousseau, Mill, and Spencer. *Second semester; M., W., at* 12. Professor O'SHEA.

32. Seminary in Administration and Supervision of Education. A research course for advanced students who desire to investigate some of the larger problems in the sphere of the administration and supervision of education, especially in cities. Students presenting theses in the administrative and supervisory phases of education are required to register for this course. *Throughout the year; on alternate Fridays,* 4 *to* 6. Associate Professor ELLIOTT.

33. Supervision of Instruction. The evolution and interpretation of the public school curriculum. The principles and problems of the supervision of instruction. Special attention to those phases of supervision possessing importance for elementary and secondary schools of smaller cities.

Lectures, reports and class discussions of selected topics. *Second semester; T., Th., at* 10. Associate Professor ELLIOTT.

41. Advanced Educational Psychology. Lectures and demonstrations; class experiments and reports. The psychology of learning and the application of the principles of psychology to teaching. Introductory lectures on growth, development, deficiency, and individual differences in capacity and intellect. *First semester; Tu., Th., at* 11, *and F., at an hour to be determined. Repeated the second semester.* Dr. DEARBORN.

42. Research in Education. Investigation of special problems, chiefly of a psychological character, which bear upon educational theory and practice. *Throughout the year; two-fifths or three-fifths credit. Hours to be arranged.* Dr. DEARBORN.

43. Seminary in Educational Psychology. Methods of investigation and the literature of selected experimental studies and researches in the field of educational psychology. *Alternate Wednesdays,* 4 *to* 6. Dr. DEARBORN.

Primarily for Graduates

14. Genetic Psychology. The psychology of development in some of the principal types of educational work. Both the genetic and statistical methods will be employed, with emphasis on the former. Designed for advanced students in psychology and education. *Throughout the year; W.,* 7 *to* 9 P. M. Professor 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. Open to those only who have done at least one year's work in Education. *Throughout the year; alternate Thursdays,* 7 *to* 9 P. M. Professor O'SHEA.

Students desiring the University Teachers' Certificate must obtain ten hours credit in the following branches: Philosophy 1 (three hours) and Education 1a, 1b, 13, or 41 (three hours). The remaining four hours must be made up by electives from the following: Philosophy 6, 11; Education 4a, 4b, 5, 11a, 11b, 15, 16, 31. and the teachers' courses in those subjects that the student is preparing to teach. These electives are subject to the following con-

ditions: (*a*) the maximum number of credits allowed for the teachers' courses is two hours; (*b*) the maximum in philosophy is five hours, which includes the three hours required above.

HISTORY

PROFESSORS DENNIS, MUNRO, TURNER; ASSISTANT PROFESSORS COFFIN, FISH, SELLERY; DR. PAETOW, MR. PATTERSON, DR. PHILLIPS; AND ASSISTANTS. SPECIAL LECTURER: PROFESSOR VINOGRADOFF.

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

A. Introductory courses 1 to 10 are primarily for undergraduates. They cannot be counted towards advanced degrees, and graduates are required to have completed an equivalent of sixteen semester hours of these studies as a preparation for graduate work for a degree. It is recommended that students shall not cover all of the introductory courses to the neglect of advanced work. If history is chosen as one of the required subjects (see Index under Degrees), six unit hours must be taken in one course.

B. Advanced courses 11 to 48 are designed to continue the work begun in the preliminary courses in the direction of greater specialization. These courses are open to undergraduates and graduates who have taken the necessary preliminary work.

C. Courses 51 to 70 are not open to undergraduates.

History Major

The requirements for an undergraduate major in history, in addition to the thesis, are twenty-six semester hours 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 semester hours.

For Undergraduates

1. Medieval History. A general survey of the history of Europe from the barbarian invasions to the close of the fifteenth century. Advanced students will be given special quiz sections. Lectures, quizzes, collateral reading, and topics. *Throughout the year; M., W., F., at* 11. Professor MUNRO, Assistant Professor SELLERY, and assistants.

2. Modern European History. A general survey extending from the close of the fifteenth century to the present day. Lectures, collateral readings and topics. Not open to freshmen. The complete course is given each semester. *First semester; M., W., F., at* 8. Assistant Professor SELLERY. *Second semester; M., W., F., at* 12. Assistant Professor COFFIN.

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. Not open to first year students. 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., at* 11. Assistant Professor FISH.

5. English History. An outline of political and constitutional history will serve as a framework for the study of the economic, social, and intellectual development of the nation. In addition to the lectures and text-book, collateral reading will be required. *Throughout the year; Tu., Th., at* 10, *and a third hour in sections for quiz work.* Professor DENNIS and assistants.

6. English History. A course with especial reference to social and political conditions, useful for students of English literature, and recommended to those who expect to teach history. Not open to freshmen. Students are not permitted to elect both courses 5 and 6.

The complete course is given each semester. *First semester; M., W., F., at* 12. *Second semester; M., W., F., at* 8. Dr. PAETOW.

10. Ancient History. A general survey of the history of the ancient world, including the oriental nations, Greece and Rome. Text-book, lectures, collateral reading and quizzes *Throughout the year; Tu., Th., at* 11, 12 *and* 3. Mr. PATTERSON.

For Greek and Roman Life, see Latin 12.

For Undergraduates and Graduates

11a. The History of the West to 1840. Particular attention is paid to the conditions of westward migration and to the econo-

mic, political, and social aspects of the occupation of the various physiographic provinces of the United States, together with the results upon national development. Lectures, collateral reading, and topics. *First semester; M., W., F., at* 12. (Omitted in 1907-08.) Professor TURNER.

11b. History of the West, 1840 to the present. See description of course 11a. *First semester; M., W., F., at* 12. (Given in 1907-08.) Professor TURNER.

12. History of the South. An economic, social and political study. The plantation system, with its dependence upon stable crops, unfree labor, free trade and local autonomy, is taken as a key to the development and policy of the South. The first semester's work, extending to about 1820, deals chiefly with matters within the South; the second semester's work chiefly with the sectional issues of state rights and slavery. The course may be elected by semesters. *Throughout the year; M., W., F., at* 11. Dr. PHILLIPS.

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 the expansion westward across the United States and Canada. Special stress will be laid upon the development and the social conditions of the New England towns, the process of New England expansion, and the religious and intellectual development of the people. *Second semester; M., W., F., at* 10. (Omitted in 1907-08.) Assistant Professor FISH.

14. History of the United States, 1816 to 1837. The relations between economic, social, and political forces are considered; and the characteristics and inter-relations of the various sections of the United States are emphasized. The constitutional history of the period is studied as the outgrowth of economic and social conditions in the physiographic provinces that made up the United States. *First semester; M., W., F., at* 12. (Omitted in 1907-08.) Professor TURNER.

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., at* 10. Assistant Professor FISH.

16. Social and Economic History of the American Colonies. Attention will be given to the European conditions, to the motives and methods of colonization, and to the development of systems of industry and society through the adaptation of European institutions to the American environment. *Throughout the year; M., W., at* 10. Dr. PHILLIPS.

17. The American Revolution. A general view of the British imperial system and of American conditions will be followed by treatment of the constitutional issue, the conflict of ideas and policies, and the process of political revolt and social upheaval. *Second semester; Tu., Th., at* 2. Dr. PHILLIPS.

18. Civil War and Reconstruction. A general study of the history of the United States, 1860 to 1876. *Second semester; M., W., F., at* 12. Assistant Professor FISH.

19. The Materials of American History. The purpose of this course is to introduce the student to the principal documentary collections. The value of newspaper files, government documents, and the Draper collection of MSS. will be discussed. Lectures and reports. *Throughout the year; M., at* 2. Dr. PHILLIPS.

20. Introductory Seminary in American History. Topics in the history of Reconstruction, dealing particularly with conditions at the South. *Throughout the year; S.,* 10 *to* 12; *or at an hour to be arranged.* Assistant Professor FISH.

21. The Literature of American History. The purpose of this course is to show the progress of historical method, and of ascertained historical fact in America by a comparative study of the classics of American historiography. *First semester; W., at* 2. Assistant Professor FISH.

24. Three Epochs in Greek History. The Mycenaean Age, the period of colonization, and the Persian wars, in the light of the literature, the events, and the life of the people. *Twice a week, hours to be fixed.* Professor C. F. SMITH.

25. Greek Constitutional History. The development of the city-state; political evolution from kingship, through oligarchy and tyranny to democracy; especial emphasis on Athens. *Second semester; M., W., at* 12.

29. Roman Imperial Institutions. A study of the organization and government of the Empire in the third and fourth cen-

turies with special emphasis on the municipality and economic conditions. Alternates with course 30. *First semester; M., W., at* 12.

30. The Development of the Principate. The transition from the Republic; evolution of the one-man power; division of governmental functions between senate and emperor; offices upon which the power of the emperor was based. *First semester; M., W., at* 12.

For Classical Art and Archeology, see Latin 22; for Roman Archaeology, see Latin 28.

31. Medieval Civilization. Designed to supplement course 1 by a more special study of the intellectual life of the feudal period and a somewhat detailed treatment of the organization of society. *First semester; Tu., Th., at* 10. Professor MUNRO.

32. Historical Development of Law in the Middle Ages. An historical survey of the development of the legal systems upon the continent from the period of the barbarian invasions to the close of the Middle Ages. Early German law, the law of the Frankish Empire, and the systems of the later Middle Ages will receive special emphasis. *Second semester; M., F., at* 3. Mr. PATTERSON.

33. Constitutional History of the Middle Ages. A comparative study of the governments in Germany and France, especially during the twelfth and thirteenth centuries. *Second semester; Tu., Th., at* 10. Professor MUNRO.

34. The Later Middle Ages. Intended to supplement course 1 through a study of the modern aspects of the fourteenth and fifteenth centuries in western Europe. Such topics will be discussed as: progress of the towns, revolutionary efforts of the unprivileged classes, growth of monarchical power, rise and decline of medieval representative institutions, decline in political importance of Church and nobility, progress in education, and changes in the art of war. *First semester; Tu., Th., at* 9. Assistant Professor SELLERY.

35. The Renaissance in Italy. A somewhat detailed exposition of economic, political, intellectual, and artistic progress, with a criticism of the importance attached to the influence of revived antiquity. Prerequisite: course 1. *Second semester; Tu., Th., at* 9. Assistant Professor SELLERY.

36. Age of Louis XIV. The development of international relations and political ideas, 1648-1721. *Second semester; Tu., Th., at* 10. Assistant Professor COFFIN.

37. The Old Regime. A presentation of the leading political, social, and intellectual characteristics of pre-Revolutionary Europe as a necessary preliminary to an appreciation of the importance and place of the French Revolution. Courses 36, 37, 38, and 39 are based upon course 2 or its equivalent. *First semester; Tu., Th., at* 12. Alternates with course 45. (Omitted in 1907-08.) Assistant Professor COFFIN.

38. The French Revolutionary and Napoleonic Periods, 1789 to 1815. Emphasizes the transitional character of this period and the modifications of the natural development from the Old Regime to the nineteenth century. Open to those who have had course 2 or its equivalent. *Throughout the year; M., W., F., at* 10. But may be elected by semesters: first semester, 1789 to 1799; second semester, 1799 to 1815. Alternates with course 39. (Omitted in 1907-08.) Assistant Professor COFFIN.

39. Nineteenth Century Europe, 1815 to 1900. The course is concerned mainly with the development of institutions and of international relations in accordance with plan of courses 37 and 38. Open to those who have had course 2 or its equivalent. *Throughout the year; M., W., F., at* 10. But may be elected by semesters: first semester, 1815 to 1852; second semester, 1852 to 1900. Alternates with course 38. Assistant Professor COFFIN.

40. Germany at the Close of the Middle Ages. After a presentation of the social, economic, and intellectual antecedents of the Protestant Revolt, the career of Luther and the progress of the movement to 1521 will be traced in detail. *Second semester; M., F., at* 3. (Omitted in 1907-08.) Mr. PATTERSON.

41. Constitutional History of England. A study of the growth of English institutions. Open to juniors and seniors who have had course 5 or 6. *Throughout the year; Tu., Th., at* 12. First semester, Dr. PAETOW, second semester, Assistant Professor COFFIN.

42. England under the Tudors and Stuarts. A course dealing with 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., at* 11. Professor DENNIS.

43. The British Empire since 1688. 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. Alternates with course 42; both courses are open to students who have previously studied European history. *Throughout the year; Tu., Th., at* 11. (Omitted in 1907-08.) Professor DENNIS.

45. The Development of Prussian Leadership in Germany, 1640 to 1871. Traces the later modern development of Prussian institutions and of the relations of Prussia with the other German states. Open to those who have had course 2 or its equivalent. Alternates with course 37. *First semester; Tu., Th., at* 12. (Omitted in 1907-08.) Assistant Professor COFFIN.

46. Introductory Seminary in European History. The course is designed to familiarize the students with the life of the time, 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; W.,* 4 *to* 6. Assistant Professor SELLERY.

48. Europe and Asia. A general survey of the historical relations of eastern and western peoples to serve as a basis for courses in contemporary world politics or for more detailed study of special phases of the relations of Asia to Europe. Graduate students can take this course in connection with courses 62 to 65. Open to graduates and to undergraduates with sufficient preparation. *Throughout the year. Tu., Th., at* 3. Professor DENNIS.

50. Methods of History Teaching, with special reference to the work of secondary schools. Open to seniors of suitable preparation. *Throughout the year; W., at* 3. Professors TURNER and MUNRO.

For Graduates

51. Historical Bibliography. An account of the present state of materials for historical research and an examination of

the bibliographical tools most essential to the special study of history. *First semester; W., at* 10. Professor MUNRO.

52. Historical Criticism. An introductory survey of the principal problems of historical method. *Second semester; W., at* 10. Alternates with course 53. Professor MUNRO.

53. Palaeography and Diplomatics. (a) Elements of palaeography, with practical exercises in the reading of manuscript facsimiles; (b) elementary exercises in diplomatics. The first part of the course is identical with the first part of course 18 in Latin, and is arranged for the benefit of advanced students of language as well as for students of history. *Second semester; F.,* 9 *to* 11. Professor MUNRO.

56. Seminary in Medieval History. In 1907-08: A critical study of the first crusade. A knowledge of three foreign languages is required. *Th.,* 4 *to* 6. Professor MUNRO.

57. Seminary in Modern History. Topic for 1907-08: French administration under Napoleon I. *Second semester; S.,* 11 *to* 1. Assistant Professor COFFIN.

58. Seminary in American History. The administration of Van Buren. *First semester; M.,* 2:30 *to* 4; *W.,* 4 *to* 6. Professor TURNER.

Courses 62 to 65 are given in connection with course 48, and are intended to furnish a more detailed study of various phases of European interests in Asia and Africa. They constitute a series, and course 62 will not be repeated until course 65 has been given. Students intending to take any of these courses are advised to take course 48 first, if possible.

62. British India. This course will deal with the history of India and of the British in India, 1600 to 1900. European rivalries and gradual establishment of British supremacy in India will be treated. *Second semester; Tu.,* 3 *to* 5. (Omitted in 1907-08.) Professor DENNIS.

63. The Eastern Question. This course will deal with the history of the relations of the Ottoman Empire to Europe since the fourteenth century. *First semester; hour to be arranged.* Professor DENNIS.

64. Europe in the Far East. This course will deal with European exploration of Eastern Asia, the development of European religious and economic interests in the Far East, and will attempt to supply the historic basis for the study of the modern Far Eastern Question. *Second semester; hour to be arranged.* Professor DENNIS.

65. Europe in Africa. This course will deal with the exploration, colonization, and partition of Africa by European nations. *Second semester; hour to be arranged.* (Omitted in 1907-08.) Professor DENNIS.

70. Historical Conference. An informal conference between the instructional staff and graduate students, at which reports will be made on individual investigations and current historical literature will be discussed. *Hours to be arranged.*

SPECIAL LECTURES

In the second semester of 1906-1907, Professor Paul Vinogradoff of Oxford, England, will conduct a graduate course in Domesday Studies (hours to be announced) and will give one or more public lectures.

POLITICAL ECONOMY

PROFESSORS BURCHELL, COMMONS, ELY, MEYER, ROSS, SCOTT; ASSOCIATE PROFESSOR ADAMS; ASSISTANT PROFESSORS HORACK, TAYLOR; MR. COULTER, MR. GILMAN, DR. LORENZ, DR. PRICE; MR. ATWELL, AND MR. HESS. SPECIAL LECTURERS: PROFESSORS J. E. HAGERTY, A. S. JOHNSON, AND F. H. DIXON.

The purpose of the department is to afford superior means for systematic and thorough study in economics and social science. The courses are graded and arranged so as to meet the wants of students in the various stages of their progress, beginning with elementary and proceeding to the most advanced work. They are also designed to meet the needs of different classes of students; as, for instance, those who intend to enter the public service, business, the professions of law, journalism, the ministry, charity work, or teaching, and those who wish to supplement their legal, theological, or other professional studies with courses in economics or social science. Capable students are encouraged to undertake original investigations, and assistance is given them in the prosecution of such work through seminaries and the personal guidance of instructors. In addition to the regular investigative courses, special funds or equivalent provision has been secured for the investigation of the American labor movement, taxation in Wisconsin, 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, while the State Historical Library has important files of labor periodicals and valuable collections of documents relating to social movements.

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 College of Law.

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 College of Law 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 in the department of English.

POLITICAL ECONOMY AS AN UNDERGRADUATE MAJOR.—The requirements for an undergraduate major, in addition to the thesis, are twenty-one semester hours 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, and 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

1. The Elements of Economic Science. 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; M., W., F., at* 8, 9, *and* 10.

Professor COMMONS, Assistant Professor TAYLOR, Dr. LORENZ, Dr. PRICE, Mr. COULTER, and Mr. HESS.

2. Elementary Sociology. Lectures with lantern slides. This course is copiously illustrated 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. It is intended for those who wish a general view of the subject as well as for those who expect to take the more advanced courses in sociology. Attendance only. *One-fifth credit. First semester; M., W., F., at* 10. Professor Ross.

3. Elements of Public Finance. An introductory study of the general principles of public expenditure, public revenue, public indebtedness, and financial administration. *First semester; M., W., F., at* 9. Associate Professor ADAMS.

4. Agricultural Economics. An elementary course designed for short-course students in the College of Agriculture. *December and January; Tu., Th., at* 11. Assistant Professor TAYLOR.

5. The Elements of Money and Banking. An introductory course, based on Scott's *Money and Banking*. Repeated each semester. In the first semester the course will be adapted to the needs of those who do not expect to continue the subject in advanced courses. In the second semester the needs of those who expect to specialize in banking and finance will be chiefly consulted. *M., W., F., at* 9. Professor SCOTT and Mr. HESS.

7a. Economic Geography. A general survey of the history and present status of industry and commerce in the principal countries of the world excepting the United States. *Second semester; M., W., F., at* 8 *and* 9. Assistant Professor TAYLOR.

7b. Economic Geography of the United States. After a brief survey of the development of industry and the expansion of commerce, a special study is made of the production and distribution of the principal articles which enter into American commerce. *First semester; M., W., F., at* 8. Assistant Professor TAYLOR.

8. Business Administration. This course is designed to give such training in business operations as will fit young men for all-round usefulness, develop their business tendencies, and prepare them to pursue business with foresight and

understanding. The practice in bookkeeping, accounting, system, etc., is primarily in the offices of the Auditing Department of the University. May be taken as a two-hour course for three years or as a three-hour course for two years. Professor BURCHELL, Mr. GILMAN, and Mr. ATWELL.

8a. The arrangement for students who are pursuing the subject as a two-hour course for three years is as follows: Sophomore Year: *Throughout the year; M., W.,* 2 *to* 4, *and another period to be arranged.* Junior Year: *First semester; M., W., at* 4; *second semester, M., W.,* 4 *to* 6. Senior Year: *Throughout the year; Tu., Th., at* 4.

8b. The arrangement for students who are pursuing the subject as a three-hour course for two years is as follows: Junior Year: *First semester; M.,* 2 *to* 4; *W.,* 2 *to* 5; *and another period to be arranged. Second semester; M.,* 2 *to* 4, *W.,* 2 *to* 6, *and another period to be arranged.* Senior Year: *First semester; M., T., Th., at* 4. *Second semester, M.,* 4 *to* 6, *and Tu., Th., at* 4.

9. Commercial Law. The law of contracts, commercial paper, agency, partnership, corporations, sales, public service companies, and insurance treated with reference to the legal rights and liabilities arising in the conduct of business. *Three times a week throughout the year.* Assistant Professor HORACK.

18. Senior Seminaries for Thesis Students. Professors BURCHELL, COMMONS, and SCOTT, Associate Professor ADAMS, Assistant Professor TAYLOR, Dr. LORENZ, and Dr. PRICE.

For Undergraduates and Graduates

19. Distribution of Wealth. An historical and comparative study of theories. *Second semester; Tu., Th., at* 10. (Omitted in 1907-08.) Professor COMMONS.

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; Tu., Th., at* 10. Professor ELY and Dr. PRICE.

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. *Second semester; Tu., Th., at* 10. (Omitted in 1907-08.) Professor ELY and Dr. PRICE.

22. Modern Socialism. A study of the socialist movement during the nineteenth century, and an examination of the theories of those writers who are usually called socialists. *First semester; Tu., Th., at* 9. (Omitted in 1907-08.) Dr. LORENZ.

23. Labor Problems. Covers the topics of strikes, trade-unions, employers' associations, arbitration, immigration, child labor, etc. *First semester; M., W., F., at* 11. Associate Professor ADAMS.

24. Problems in Taxation. Comprehends the more concrete problems of the day: mortgage, railroad, insurance, and double taxation, the personal property and inheritance taxes, etc. *Second semester; Tu., Th., at* 11. Associate Professor ADAMS.

25. Labor Legislation. Comprehends a study of the labor law of the United States and foreign countries, the practical working of important statutes, and the sphere and function of the labor law in general. *Second semester; M., W., F., at* 10. (Omitted in 1907-08.) Associate Professor ADAMS.

26. The Elements of Agricultural Economics. This course treats of the economic principles which underlie the prosperity of the farmer, and of all other classes so far as they are dependent upon agriculture. The subject is divided into two parts: In Part I the point of view is that of the farmer, and in Part II that of the nation as a whole. *First semester; Tu., Th., at* 12. Assistant Professor TAYLOR.

27. Historical and Comparative Agriculture. This course consists of lectures and assigned readings on the agriculture of the Romans, on the development of agriculture in England and the United States, and on the present status of agriculture in the most important countries, with an attempt to find the explanation of historical changes and geographical differences. *Second semester; Tu., Th., at* 12. Assistant Professor TAYLOR.

28. Agricultural Industries. An investigative course for seniors in the commercial and agricultural courses and for other advanced students. *Throughout the year; Tu., Th., at* 10. Assistant Professor TAYLOR.

29. Manufacturing Industries. A study of the history and social relations of typical industries, and of the fundamental principles and methods of procedure involved in their organization and management, including factory operations, cost of production, depreciation, appraisals, advertising, selling, etc. Must be preceded by courses 7a and 7b. The topics of this course are arranged in three groups: A. Those which concern the purely manufacturing aspects of these industries. B. Those which concern their commercial aspects. C. Those which concern the science of costs. Group A, *First semester; M., W., at* 3. Group B, *First semester; Tu., Th., at* 3. Group C, *repeated each semester, hours to be arranged.* Professor BURCHELL, Mr. GILMAN, and Mr. ATWELL.

30. Elements of Statistics. A course in statistical method. Prerequisite to course 31. One lecture and four hours laboratory work a week, for which a credit of three-fifths is given. *First semester; W., at* 12. *Laboratory hours to be arranged.* Associate Professor ADAMS.

31. Economic Statistics. Prices, wages, family budgets, labor, financial statistics, etc., will be studied. One lecture and four hours laboratory work a week, for which a credit of three-fifths is given. This course is specially recommended to juniors intending to take thesis work in economics. *Second semester; Tu., at* 12. *Laboratory hours to be arranged.* Associate Professor ADAMS.

32. Social Statistics. Includes a study of vital statistics, suicide, crime, pauperism, etc. One lecture and four hours laboratory work a week, for which a credit of three-fifths is given. May be taken without course 30. *Second semester; Th., at* 12. *Laboratory hours to be arranged.* Associate Professor ADAMS.

33. Financial History of the United States. The main lines of our financial development, including our monetary and banking history, will be traced by means of lectures, of which two will be given each week. Readings in the literature of the subject and topics for investigation will be

assigned. A third hour each week will be devoted to quizzes on the lectures and assigned readings. *Second semester; M., W., F., at* 8. Professor SCOTT.

34. Corporation Finance and Securities. Influences of an enlarging scale of production upon business organization: forms of organization antecedent to the joint stock company; historical development of the business corporation; history of joint stock companies in England and the United States under common law, charters, and registration acts; securities and the circumstances affecting their values; stocks and speculation, financially considered; income and expenditure. *First semester; Tu., Th., at* 8. Dr. PRICE.

34a. The Money Market. Lectures on the machinery, methods, and movements of the New York, London, Paris, and Berlin money markets. Analysis and interpretation of the weekly balance sheets of the Associated Banks of New York, the Bank of England, the Bank of France, and the Imperial Bank of Germany, and a discussion of the relation of changes in the bank rates, and the foreign exchanges, of the international movements of the precious metals, of stock exchange fluctuations, etc., to industry and commerce and other phases of our economic life. The lectures will be supplemented by a weekly quiz, and exercises in the interpretation of current money market records and documents will be required of students. *First semester; Tu., Th., at* 12, *with a third hour for the quiz to be arranged on consultation.* Professor 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. *Repeated each semester; M., W., F., at* 9. Professor MEYER and Dr. LORENZ.

36. Special Problems in Transportation. An advanced course in which the more important special transportation problems are discussed in detail. Each student pursues an independent line of investigation. Lectures and reports. Open to students who have had course 35 or its equivalent. *Second semester; Tu., Th., at* 9. Dr. LORENZ.

37. Corporation Economics. The economies and wastes of large scale production and of monopolies; trusts, pools, and consolidations; relations of industrial corporations to stock-

holders, bondholders, employees, railways, and the public; legislation and supervision. *Second semester; Tu., Th., at* 8. Dr. PRICE.

38a. Insurance Economics. Principles and methods of insurance; rise, progress, and problems of associations for indemnity. *First semester; Tu., Th., at* 11. Dr. PRICE.

38b. Life Insurance. A study of the various forms of life insurance, including an elementary survey of life insurance mathematics. *Second semester, Tu., Th., at* 11. Dr. PRICE.

39. Social Psychology. Genesis, forms, and phases of 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 nonconformity, individuality, leadership, innovation, the role of great men. The endeavor is to reach key principles for interpreting contemporary society. *First semester; M., W., F., at* 11. Professor Ross.

40. General Sociology. A systematic survey of the social processes with the view of establishing principles and laws. The inductive method is followed, and it is hoped the orderly presentation of a large amount of classified data will aid the student to build his own sociology. *Second semester; M., W., F., at* 11. Professor Ross.

41. Charities and Corrections. A study, first, of the dependent class, with special reference to slum conditions; second, of the defective class, and the institutional treatment of this class; third, of the delinquent class, causes and prevention of crime, prison management and discipline. Reformatories and other public institutions will be visited. *Second semester; M., W., F., at* 10. Professor Ross.

42. Economics of Municipal Industry. A comparison of public and private employment in Great Britain and the United States, including trade unions, labor organizations, labor cost and efficiency, social and political results. *First semester, M., W., F., at* 10. Professor COMMONS.

43. Race Elements in Industry. The characteristic features of American industry, immigration, industrial efficiency, restrictions on output. *Second semester; M., W., F., at* 11. Professor COMMONS.

44. Socialism. Examination of the underlying causes of the socialist movement of modern times, particularly as these

causes are found in the industrial revolutions 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*, 1907. *M., W., F., at* 10. Professor ELY.

45. Financial Institutions. Deals with the administrative and practical side of such financial institutions as commercial banks, savings banks, building and loan associations, trust and insurance companies, etc., together with the practice of Wall and Lombard streets, and other financial centers. May be taken as a two-hour course, or as a three-hour course, including laboratory. Must be preceded by Course 5. *First semester, Tu., Th., at* 5, *and laboratory period to be arranged.* Professor BURCHELL and Mr. GILMAN.

46. Advanced Economics. An advanced course in general economics intended primarily for students who have had course 1 and intend to major in political economy. *Second semester; Tu., Th., at* 10. Associate Professor ADAMS.

Primarily for Graduates

50. Seminary in Finance. For the year 1907-08 the subject will be the New York, London, Paris, and Berlin money markets during the last decade. *Throughout the year; Th.*, 4 *to* 5:30. Professor SCOTT.

52. The Distribution of Wealth. Part I. The fundamental institutions in the existing social order and their relation to the present distribution of wealth. The principal topics discussed are: private property, contract and its conditions, vested interests, custom, competition, monopoly, authority, and the caritative principle, but during this semester especial attention will be given to contract, custom and competition. *First semester; Tu., Th.*, 2:30 *to* 4:00. Professor ELY.

53. Distribution of Wealth. Part II. The shares of the various factors in distribution, viz.: rent, interest, profits, and wages. The rent of land will receive chief attention during this semester. May be taken by those who have not had Part I, course 52. *Second semester; Tu., Th.*, 2:30 *to* 4:00. Professor ELY.

54. Public Finance. This course deals first with the nature of public finance as a science and with its history, with the development and working of the public economy, and then proceeds to a discussion of public expenditures and revenues. *Second semester; Tu., Th., at* 9. Given in connection with course 57 and open only to the students who have had an introductory course in Public Finance. Professor ELY and Associate Professor ADAMS.

55. American Public Finance. Part I. The financial history of the United States. A critical and historical discussion of the finances of the federal government. *Second semester; Tu., Th.*, 3:30 *to* 4:00. (Omitted in 1907-08.) Associate Professor ADAMS.

56. American Public Finance. Part II. An historical and critical account of the finances of the American commonwealths and local political units. *Second semester; Tu., Th.*, 2:30 *to* 4:00. (Omitted in 1907-08.) Associate Professor ADAMS.

57. Principles of Taxation. A discussion of the history, principles, and problems of American taxation. Given in connection with course 54; and open only to students who have had an introductory course in Public Finance. *Second half of second semester, Tu., Th., at* 9. Associate Professor ADAMS.

58. Monopolies and Trusts. Based on Ely's *Monopolies and Trusts*, and consisting of lectures and discussions supplementary to it. Professor ELY.

60. Seminary on Cities. Growth, location, structure, and economic basis. Comparison of city with country in respect to sex, age, race, birth rate, longevity, morbidity, marriage, divorce, pauperism, criminality, vice, education, moral character, intellectual traits and political leanings. *First semester; Th.*, 7:15 *to* 9:15 P. M. Professor ROSS.

62. Seminary on Modern Sin. A study of the nature, extent, varieties, and effects of contemporary wrong-doing, especially in politics and business, and an inquiry as to how far the phenomena may be explained by changes in American life and society. *Second semester; Th.*, 7:15 *to* 9:15. Professor ROSS.

63. Seminary on the Dynamics of Population. The factors—economic, military, social, political, legal, and religious—which influence the quantity and quality of population.

Natural, social, and artificial selection among men. Outlines of engenics. *Second semester; Th.*, 7:15 *to* 9:15 P. M. (Omitted in 1907-08.) Professor Ross.

64. Labor and Industrial History. The development of the labor movement since 1860, including political, legislative, and judicial changes. *Throughout the year; Tu., Th., at* 10. (Omitted in 1907-08.) Professor COMMONS.

65. Research Course in Labor and Industry, 1840-1860. *Throughout the year; M.*, 4 *to* 6. Professor COMMONS.

70. Economic Conference. The faculty and graduate students of the department meet twice 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 each year by scholars and public men from without the University. The nonresident lecturers last year were Professor William Z. Ripley, of Harvard University, on Transportation, and Professor Henry C. Emery of Yale University.on International Trade. The special lecturers for the current year include Professor J. E. Hagerty, of Ohio State University; Professor A. S. Johnson, of the University of Nebraska, and Professor F. H. DIXON, of Dartmouth College.

POLITICAL SCIENCE

PROFESSORS PARKINSON, REINSCH; ASSISTANT PROFESSOR SPARLING; DR. MCCARTHY, MR. SCOTT, AND DR. SCHAFFNER.

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, and 20). The require-

ment for an undergraduate major in Political Science, in addition to the thesis, is twenty-one semester hours as a minimum.

In order to enable students whose main work is in fields not allied to political science and who may lack the time to take the longer courses, to obtain a general view of the problems of politics, the following arrangements have been made; certain brief lecture courses are given (courses 4 and 19) which deal with subjects of interest to students in general, and in which only a limited amount of outside reading is required. These courses deal with the American Constitution and with present day problems of international politics. Such students may also take the lectures in course 7 (American Politics and Government) 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 would receive one-fifth credit for the work.

Primarily for Undergraduates

1. Elements of Political Science. A general survey of the field of political science. *First semester; M., W., F., at* 8. *Repeated second semester; Tu., Th., at* 9 *with third hour to be arranged.* Assistant Professor SPARLING.
2. Elementary Law. The nature and sources of law, and the methods of its application. This course is designed to give a general view of the system of private law. *First semester; M., W., F., at* 11. Mr. SCOTT.
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. Some of the lectures will deal with the English constitution. *Throughout the year; Th., at* 10. Professor PARKINSON.
6. Administrative Problems. A survey of the primary administrative activities of the chief states of Europe and the United States. *Second semester; Tu., Th., at* 8. Assistant Professor SPARLING.
7. Government and Politics in the United States. A general study of the American system of government in its local, state, and federal organs and their relations to each other,

as well as of the methods of political action. *Throughout the year; Tu., Th., at* 9. *(Students may take lectures only, receiving one-fifth credit.)* Professor REINSCH and Assistants.

For Undergraduates and Graduates

8. Introduction to the History of Continental European Law. In 1907-08 this course will be given by the Department of History (course 32).
9. Roman Law. In 1907-08: The historical development of the Roman law and its reception and influence in other countries. In 1908-09: The Institutes of Roman law. The principles of the law of persons and property. *First semester; Tu., Th., at* 10. Mr. SCOTT.
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., at* 12. Professor REINSCH.
11. Jurisprudence. Analysis of the main concepts of the science of law, on the basis of the juristic classics. Open to students who have had an elementary course in law. *Second semester; Tu., Th., at* 10. Mr. SCOTT.
12. English and American Constitutional Law. Lectures upon the development of the English constitution for the time of Magna Charta, with emphasis upon its unwritten growth since the Revolution of 1688. These lectures are followed by a study of the consideration of the United States in the light of the highest judicial interpretation. *Throughout the year; M., W., F., at* 10. Professor PARKINSON.
13. American Constitutional Law. Designed to follow, or at least to supplement course 12. A closer study is here made of the more important parts of the constitution, with emphasis upon the amendments. An examination of leading cases is made prominent. Open to graduates and to other advanced students who have had course 12 or its equivalent. *Throughout the year; Tu., Th., at* 10. (Omitted in 1907-08.) Professor PARKINSON.
14. Comparative Administration. The theory of administration, and a survey of the administrative systems of the states of modern Europe and United States. *First semester; Tu., Th., at* 9. Assistant Professor SPARLING.

15. Municipal Government in Europe and the United States. *Second semester; M., W., F., at* 8. (Students may take lectures only, receiving one-fifth credit.) Assistant Professor SPARLING.

16. State Administration. A study of the local and state administrative systems of the United States. *First semester; M., W., F., at* 9. Assistant Professor SPARLING.

17. Federal Administration. A study of the organization and functions of the different branches of our federal service. *Second semester; M., W., F., at* 9. Assistant Professor SPARLING.

18. International Law. *First semester; M., W., F., at* 9. Professor REINSCH.

19. Contemporary International Politics. A course of weekly lectures on questions of international politics, which are of special importance at the present time. *Throughout the year; W., at* 5. Professor 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., at* 10. Professor REINSCH.

21. Colonial Politics. A study of the principal systems of colonial government and of the methods of colonial public administration, especially as affecting finance, commerce, agricultural and industrial development, labor, and education in the dependencies. *First semester; M., W., F., at* 10. Professor REINSCH.

22. Party Government. A study of the theory and development of the party system; the organization and methods of action of political parties in the United States; the legal control of parties; and reform tendencies. *First semester; Tu., Th., at* 11, *and a third hour to be arranged.* Mr. SCOTT.

23. Consular Service. A study of the modern consular systems and methods, with special emphasis upon the American system. *First semester; Tu., Th., at* 8. Assistant Professor SPARLING.

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. Designed

especially for students preparing for journalism and the law. *Second semester; M., at* 3. Mr. SCOTT.

26. The Theory and Practice of Legislation. A study of the methods of procedure of legislative bodies, and the preparation of the subject matter and form of bills. *Throughout the year; M., W., F., at* 12. Dr. MCCARTHY and Dr. SCHAFFNER.

27. Comparative National Government. A comparative study of the constitutions and governmental organizations of France, Germany, Great Britain, Switzerland, and Italy; and the organization and influence of the political parties. *Second semester; M., W., F., at* 11. Mr. SCOTT.

28. Comparative Study of Constitution Making. *Time to be announced.* Dr. MCCARTHY.

Primarily for Graduates

32. Seminary in Comparative Legislation. This course is open to undergraduates who have had course 26. *Throughout the year; F.,* 4 *to* 6. Dr. MCCARTHY and Dr. SCHAFFNER.

35. 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., at* 11. (Omitted in 1907-08.) Professor REINSCH.

36. Philosophy of the State. A critical study of contemporary political thought and terminology. *First semester; Tu.,* 4 *to* 6. Professor REINSCH.

37. Juristic Classics. In 1906: The Institutes of Gaius, first two books; reading and commentary. *Second semester; F., at* 12. Mr. SCOTT.

39. Seminary in Administration. Some phase of city administration will be studied. *Throughout the year; Tu.,* 7:30 *to* 9 P. M. Assistant Professor SPARLING.

40. Seminary in International Law and Politics. For 1907-08: A study of the international relations and constitutional arrangements of the Dominion of Canada. *Throughout the year; W.,* 7:30 *to* 9:30 P. M. Professor REINSCH.

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.

GREEK

PROFESSORS KERR, SMITH; ASSISTANT PROFESSOR LAIRD; MR. BURDICK, AND MR. KNOWLTON.

A course in Elementary Greek is offered for the benefit of students who have not taken the preparatory work in the high school. It is open to all freshmen, whatever group of studies they may have offered for admission, and may also be taken in any other year, counting ten hours towards the fulfillment of the language requirement of sixteen or twenty-four hours, or as an elective in connection with any line of work. On completion of course A, a good student may, on the recommendation of the instructor, be admitted to course 1, thus gaining the opportunity of advancing more rapidly than if the second year were spent on course B. An exceptionally strong student, who has taken course A in his freshman year, and desires then to make Greek his major, may in his sophomore year take courses 1 and 2, and thereby be enabled to carry on advanced work in his junior and senior years. 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.

The object of the graduate courses in Greek is to secure, on the part of advanced students, wide reading in Greek authors, acquaintance with the latest results of philological investigation through constant reading of critical journals, the forming of habits and learning of methods of research. In pursuance of the last named purpose especially, the Greek Seminary meets once a week to hear and to discuss carefully prepared papers, the members leading in turn. A full Seminary course covers three years, embracing usually the following subjects: (a) Thucydides or Greek historiography, (b) the Greek Drama, (c) Greek lyric poetry. For one or other of these, courses 24, 25, or 26 is occasionally substituted.

Primarily for Undergraduates

A. Elementary Greek. White's *Beginner's Greek Book*, Xenophon's *Anabasis*. *Throughout the year; M., Tu., W., Th., F., at* 12. Professor SMITH.

B. Xenophon's *Anabasis* III-IV, Homer's *Odyssey* I-IV, Greek

Composition. *Throughout the year; M., W., F., at* 10. Mr. BURDICK.

For students who have had one year of preparatory work.

1. Herodotus VIII, Homer's *Odyssey* V-XII, *Lysias*, Grammar and Composition. *Throughout the year; M., Tu., W., F., at* 8. Assistant Professor LAIRD.

For students who have had two years of preparatory work.

2a. The *Philippics* of Demosthenes, the *Bacchae* of Euripides, Goodwin's *Moods and Tenses. First semester; M., W., F., at* 10. Professor KERR.

Plato's *Apology* and *Crito*, Thucydides VII, Jebb's *Primer* of *Greek Literature. Second semester; M., W., F., at* 10. Professor KERR.

2b. Herodotus VII, or selected dialogues of Lucian, and Euripides, (two plays). *Throughout the year; M., F., at* 11. Professor KERR and Assistant Professor LAIRD.

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

3. Greek Prose Composition. *Throughout the year; W., at* 11. Professor SMITH, or Assistant Professor LAIRD.

This course will be required of those who expect to get recommendations to teach.

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

For Undergraduates and Graduates

5a. Greek Lyric Poets. Study of meters. *First semester; M., W., F., at* 11. Professor SMITH.

5b. Thucydides; Demosthenes. *Second semester; M., W., F., at* 9. Professor 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., at* 9. (Omitted in 1907-08.) Professor SMITH.

7. Greek Orators. *Throughout the year; Tu., Th., at* 9. Assistant Professor LAIRD.

8. Plato. The Republic. Books I, II, III, and IV, with selections from other parts of the dialogue. This course is intended as an introduction to the study of Greek philosophy.

Throughout the year; Tu., Th., at 9. (Omitted in 1907-08.) Professor KERR.

10. Advanced Greek Composition. *First semester; once a week,* Professor SMITH or Assistant Professor LAIRD.

11. Modern Greek. A study of the changes in form and structure which the language has undergone since the classical period. *Throughout the year; Tu., Th., at* 9. Professor KERR.

12. Life of the Greeks and Romans. A lecture course illustrated by lantern slides. Open to all students. A knowledge of Greek and Latin is not essential. *Throughout the year; Tu., Th., at* 11. (See Latin 12.) (Omitted in 1907-08.) Assistant Professor SHOWERMAN.

15. Classical Archaeology. The history and appreciation of Greek sculpture, architecture, and painting. A course introductory to the study of art. Assistant Professor SHOWERMAN. (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, but the formal exercises of the Seminary are devoted usually to the elucidation of the speeches of a single book, especial attention being given to text criticism. *Throughout the year; S.,* 9 *to* 11. (Omitted in 1907-08.) Professor SMITH.

21. Greek Drama. Sophocles. The whole author is read privately by the members of the class. As supplementary to this course the scenic antiquities will be studied. The general treatment in courses 21 and 22 will be literary in character. *Throughout the year; S.,* 9 *to* 11. (Omitted in 1907-08.) Professor SMITH.

22. Lyric Poetry. Especial attention is given to Pindar, the whole being read privately. *Throughout the year; S.,* 9 *to* 11. Professor SMITH.

23. Greek Dialects. A study of dialect sounds and forms based on the inscriptions. Solmsen's *Inscriptiones Graecae* will in the main be followed. *Two hours a week for a portion of the year, as part of the regular seminary work.* Assistant Professor 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 in 1907-08.) Professor SMITH.
25. Greek Orators. Antiphon, Andocides, Lysias, and Isaeus. The whole of these authors will be read by the class. *Throughout the year; W.*, 4:30 *to* 6. Assistant Professor LAIRD.
26. Herodotus. The whole of the author is read privately by the members of the class. *Throughout the year; M.*, 4 *to* 6. (Omitted in 1907-08.) Assistant Professor LAIRD.
30. Greek Grammar. History of the sounds and forms. *Throughout the year; Tu., Th., at* 5. Assistant Professor LAIRD.
31. Greek Syntax. Lectures on the development of Attic usage, with particular reference to the cases and modes. *Th., at* 8. Assistant Professor LAIRD.
33. Journal Club. Reports on and discussion of current philological literature. *One hour a week throughout the year.* Professor SMITH and Assistant Professor LAIRD.

SANSKRIT

ASSISTANT PROFESSOR LAIRD.

34. Elementary Sanskrit. *Throughout the year; M., W., at* 10.
35. Advanced Sanskrit. Selections from the Rig-Veda. *Throughout the year; W., at* 11.

LATIN

PROFESSOR SLAUGHTER; ASSISTANT PROFESSORS FISKE, LAIRD, SHOWERMAN; DR. ALLEN, MR. BRANDT, MR. COLBURN, AND MR. LEE.

The courses in Latin are divided into three groups, as follows,

I. Courses A to 5 are intended for undergraduates in the early years of the college course. They form an introduction to the more advanced courses, and furnish, for those who do not continue the subject beyond the second year in college, an acquaintance with the best specimens of Latin prose and verse. They may not be counted for the master's degree. Course A is intended for

students whose preparation has for any reason been less than the amount nominally required for entrance to the University. It counts towards the bachelor's degree, and is accepted in fulfillment of the language required in the University. It will not be accepted as part of a Latin major. Course 1 must precede all other courses except A. Course 2 is recommended to students who intend to make Latin a major, and should be taken in the first year along with course 1.

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

III. Courses 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 an undergraduate major in Latin are, in addition to the thesis, twenty-two semester hours as a minimum. At least ten semester hours must be chosen from group II, but no specific requirement of courses is made.

Primarily for Undergraduates

A. Cicero and Vergil. Four orations of Cicero and six books of Vergil's *Aeneid* will be read in class. Some attention will be given to writing Latin. *Throughout the year; M., Tu., W., Th., F., at* 8. Mr. COLBURN.

1. Livy, Cicero, and Terence. Livy, Books I and XXI; Cicero, *De Senectute*, and Terence, *Phormio* and *Andria*, will be read. The class will meet in four sections. *Throughout the year; M., W., F., at* 8, 10, *and* 3, *and Tu., Th., S., at* 10. Assistant Professors FISKE and SHOWERMAN and Dr. ALLEN.

2. Prose Composition and the reading of easy prose authors. The translation from Latin requires no preparation, and is intended to supplement the work in writing Latin. *Throughout the year; Tu., Th., at* 8, 10, *and* 3. Assistant Professors FISKE and SHOWERMAN, Dr. ALLEN, Mr. BRANDT, and Mr. LEE.

3. Horace. Selections from the odes, satires, and epistles of Horace. *Throughout the year; M., W., F., at* 9. Professor SLAUGHTER and Assistant Professor SHOWERMAN.

4. Advanced Prose Composition with a special study of Latin syntax. This course must be preceded by course 2. *Throughout the year; Tu., Th., at* 3. Assistant Professor FISKE.
5. Catullus, Ovid, Pliny, and Martial. This course is intended to supplement course 3, and should be taken with or after it. *Throughout the year; Tu., Th., at* 9. Dr. ALLEN.
6. Elementary Latin. (Free Elective.) A course covering the elements of Latin and Caesar's *Bellum Gallicum*, Bks. I-III will be offered, if a sufficient number of students desire it. This course can not be used to satisfy the University's requirements in language. *Throughout the year; M., Tu., W., Th., F., at* 8. Mr. ————.

For Undergraduates and Graduates

8. Cicero's Letters and Orations. A reading course, with lectures and assigned topics. Special attention will be paid to the life and personality of Cicero. *Second semester; M., W. F., at* 8. (Omitted in 1907-08.) Assistant Professor SHOWERMAN.
9. Plautus, Terence, and Seneca. This course is intended to give, by reading and supplementary lectures and topics, a general survey of the Roman drama. *First semester; M., W., F., at* 8. Assistant Professor SHOWERMAN.
10. Lucretius. The first, third, and fifth books of the *De Rerum Natura*, and selections from the remaining books are read in class. Lectures and assigned reading on topics connected with the course. *Second semester; M., W., F., at* 10. (Omitted in 1907-08.) Professor SLAUGHTER.
11. Vergil. The last six books of the *Aeneid* are read in class, with selections from Vergil's other works. Lectures and assigned reading on topics connected with the course. *First semester; M., W., F., at* 10. (Omitted in 1907-08.) Professor SLAUGHTER.
12. Life of the Greeks and Romans. A lecture course illustrated by lantern slides. Open to all students. A knowledge of Greek and Latin is not essential. *Throughout the year; Tu., Th., at* 11. (Omitted in 1907-08.) Assistant Professor SHOWERMAN.
13. Literary Criticism. Pre-Ciceronian Latin writers of epic and drama are studied in connection with the criticism

passed upon them by later writers. Selections are also read from those portions of the writings of Cicero, Horace, and Quintilian which deal with literary criticism. *First semester; M., W., F., at* 9. Dr. ALLEN.

14. Oratory and Philosophy. Lectures are given on the history of Roman oratory and philosophy accompanied by readings from Cicero's rhetorical and philosophical works and the philosophical works of Seneca. *Second semester; M., W., F., at* 9. Dr. ALLEN.

21. Ovid, Tibullus, Propertius, Fragments of Roman Tragedy. The selections read are made the basis for a systematic study of classical mythology. *Throughout the year; M., W., F., at* 9. (Omitted in 1907-08.) Dr. ALLEN.

15. Latin Composition. This course is intended for seniors and graduate students. It must be preceded by course 4, or its equivalent. *Throughout the year; Tu., at* 3. (Omitted in 1907-08.) Professor SLAUGHTER.

16. Teachers' Course. A course on the methods and materials used in teaching Latin, with special reference to the work in secondary schools. Lectures, reports, discussions and practice teaching. Special attention will be given to Vergil. Open to students who have had not less than twenty unit hours of Latin. *First semester; M., W., F., at* 10. Professor SLAUGHTER.

17. Latin Literature. A general survey of Latin literature from the earliest period to the reign of Trajan, by means of lectures and required reading in the Latin authors, and in English translations. *Second semester; M., W., F., at* 10. Professor SLAUGHTER.

18. Roman Satire. A reading course of selections from the works of Ennius, Lucilius, Varro, Horace, Seneca, Persius, Petronius, and Juvenal. Lectures are given on the origin and development of Roman satire. Topics are required. *Throughout the year; Tu., Th., at* 10. (Omitted in 1907-08.) Assistant Professor FISKE.

19. Roman Historians to Tacitus. A reading course of selections from the Annalists, Cicero, Cæsar, Nepos, Sallust, Livy, and Tacitus. Lectures are given and topics are required. *Throughout the year; Tu., Th., at* 10. Assistant Professor FISKE.

20. Literature of the Late Empire. A course in 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. *First semester; M., W., F., at* 8. (Omitted in 1907-08.) Assistant Professor SHOWERMAN.

22. Classical Archaeology. (See Greek 15.) The history and appreciation of Greek sculpture, architecture, and painting. A course introductory to the study of art, consisting of lectures illustrated by means of the stereopticon. A knowledge of Greek and Latin is not necessary. Text-books and topics. *First semester; Tu., Th., at* 11. Assistant Professor SHOWERMAN.

23. Roman Archaeology. Lectures on the remains of ancient Rome, with special reference to their historical and literary significance. Illustrated by lantern slides. A knowledge of Latin is not essential. *Second semester; Tu., Th., at* 11. Assistant Professor SHOWERMAN.

For Graduates

25. Latin Grammar. Lectures on the sounds and forms of the Latin language. Open to graduates and properly qualified seniors. *First semester; W., F., at* 5. (Omitted in 1907-08.) Assistant Professor LAIRD.

26. Latin Syntax. Lectures on Latin syntax, illustrative of the historical method. *Second semester; Tu., Th., at* 8. (Omitted in 1907-08.) Assistant Professor 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; M., W., at* 9. (Omitted in 1907-08.) Assistant Professor FISKE.

28. Roman Archaeology. A course consisting of course 23, with an additional hour for presentation of reports on assigned topics. The extra hour will be arranged on consultation. *Second semester; Tu., Th., at* 11. Assistant Professor SHOWERMAN.

29. Epigraphy and Palaeography. Lectures. Readings of inscriptions and facsimilies of Latin manuscripts. *Throughout the year; W.,* 4 *to* 6. Professor SLAUGHTER.

30. Latin Literature. Lectures and assigned readings, with a minute examination of the authors read. A two years'

course. The period of the Republic is studied the first year. The period of the Empire is studied the second year. *Throughout the year; Tu., Th., at* 12. Dr. ALLEN.

33. Latin Seminary. The work of the Seminary varies from year to year according to the author or subject under discussion. In 1907-08, a critical and exegetical study of the Odes of Horace will be made. The whole of the author will be read privately by the members of the Seminary, and reports, topics, and lectures will form a part of the year's work. In 1905-06, the *Monumentum Ancyranum* formed the basis of the work, and a particular study was made of the early Empire. In 1906-07, Plautus was the author studied. The critical work centered upon the *Miles Gloriosus*. Reports on assigned topics, analyses of plays, and lectures on Plautine metres and on the history of ancient comedy formed part of the work. The members of the Seminary read all of Plautus and Terence. *Throughout the year; Tu., Th.,* 9 *to* 10:30. Professor SLAUGHTER.

HEBREW AND HELLENISTIC GREEK

PROFESSOR WILLIAMS; DR. BRESLICH, DR. KELLEY, AND MR. KNIGHT.

The various language and literary courses given below are open as electives to students in any department of the University who are prepared to carry them on with profit. The purposes for which they are pursued are (a) as a means to liberal culture; (b) as furnishing necessary data to a study of phonetics, philosophy of language, and comparative philology; (c) as an important department of history, archaeology, and art; and (d) as preparatory to studies in ethics and theology.

As may be seen from the following, the department also offers courses in Arabic, Assyrian, Syriac, and Aramaic.

Primarily for Undergraduates

1. The General Principles of the Hebrew Language. Reading of selections from Genesis. *Four times a week throughout the year.* Professor WILLIAMS and Dr. BRESLICH.
2. This course is the same as course 1, but begins in the second semester of each year as a two-hour study, and continues as

a two-hour study during the first semester of the following year. Dr. BRESLICH.

3. Historical Hebrew. The books of Samuel, with a review of the verb. *Twice a week; first semester.* Dr. KELLEY.
4. The Book of Deuteronomy. A general review of etymology. *Twice a week; second semester.* Dr. KELLEY.
7. Exercises in Writing Hebrew. *Once a week throughout the year.* Professor WILLIAMS.
16. Selected chapters from the Gospels, and the general principles of Hellenistic Greek. For students who have not studied classical Greek. *Four times a week throughout the year.* Mr. KNIGHT.
17. This course is the same as course 16, but begins as a two-hour study in the second semester of each year, and continues as a two-hour study during the first semester of the following year. Mr. KNIGHT.
18. Matthew and Mark and a study of the etymology of Hellenistic Greek. *Twice a week throughout the year.* Mr. KNIGHT.
19. Luke and Acts. Historical Study with careful attention to Hellenistic Greek syntax. *Twice a week throughout the year.* Mr. KNIGHT.
23. History of the Hebrew People from the Settlement in Canaan to the Division of the Kingdom. A sketch of the literature of the period. *Once a week throughout the year.* Professor WILLIAMS.
24. History of the Hebrew People from the Division of the Kingdom to the Fall of Jerusalem. The literature of the Assyrian period. *Once a week throughout the year.* Dr. KELLEY.
25. History of the Jewish People during the Maccabean and Roman periods. *Once a week; second semester.* Professor WILLIAMS.
26. Historical Geography of Palestine; Hebrew Archaeology; Recent Discoveries. *Once a week throughout the year.* Professor WILLIAMS.

For Undergraduates and Graduates

5. The Minor Prophets. Critical translation of the Hebrew text with close attention to vocabularies and syntax. *Twice a week throughout the year.* Dr. KELLEY.

6. The Book of Job. A study of the form and characteristics of Hebrew poetry. *Twice a week throughout the year.* Professor WILLIAMS.
8. Hebrew Syntax, with selected passages for reading. *Twice a week throughout the year.* Dr. KELLEY.
20. Critical study and textual criticism. *Twice a week throughout the year.* Professor WILLIAMS.
27. The Psalms: Books I and II, and a study of the form and characteristics of Hebrew poetry. *Twice a week throughout the year.* Professor WILLIAMS.

Of courses 5, 6, and 27 only two may be taken in any one year.

Primarily for Graduates

9. Advanced Hebrew Syntax. *Twice a week; first semester.* Dr. KELLEY.
10. Advanced Hebrew Etymology. *Twice a week; second semester.* Dr. KELLEY.

Courses 9 and 19 will be given in alternate years.

11. Hebrew Seminary. In successive years Isiah I.-XXXIX., XL.-LXVI., and the third and fourth books of the Psalms will form the center of the work. *Once a week (two hours) throughout the year.* Professor WILLIAMS and Dr. KELLEY.
12. Arabic. *First semester*: Easy reading and principles of the language. *Second semesters* Reading of selections and some of the shorter suras of the Quran. *Twice a week.* Dr. KELLEY.
13. Advanced Arabic: The Quran. *Once a week throughout the year.* Dr. KELLEY.
14. Elementary Assyrian. A study of selected texts and of (a) the grammatical principles of the language, and (b) the use of the material for lexicographical purposes. *Twice a week throughout the year.* Dr. KELLEY.
15. Biblical Aramaic, ten weeks; Syriac, the remainder of the year. *Twice a week.* Alternates with 14. Dr. KELLEY.
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. *Once a week (two hours) throughout the year.* Mr. KNIGHT.
22. Advanced Hellenistic Greek Grammar. *Twice a week throughout the year.* Professor WILLIAMS.

Slavic Philology

Dr. Prokosch.

These courses intend to furnish the students with (1) a general insight into the historical and comparative grammar of the Balto-Slavic languages; (2) an acquaintance with Slavic folklore, customs, etc.; and (3) a reading knowledge of Russian, this being the most important of the modern Slavic languages.

1. Old Bulgarian, from an historical point of view. Reading of the gospels. *First semester; twice a week.* (Omitted in 1907-08.)
2. Lithuanian. Comparative grammar, and reading of Lithuanian fairy tales and popular poetry. *Second semester; twice a week.* (Omitted in 1907-08.)
3. Russian. Introductory course. *First semester; twice a week.*
4. Advanced Russian. Reading of easy prose. *Second semester; twice a week.*

Romance Languages

Professors Owen, Smith; Associate Professor Giese; Assistant Professor Gay; Mr. Cool, Mr. Michell, Mr. Patzer, Mr. Schlatter, Mr. Shanks; Mr. Boardman, Mr. Macduff, and Mr. Perrin.

French courses numbered below 10 are for students who have had no French, or have had less than two years in the high school. Students with only one year of high school French or its equivalent may be allowed to enter course 4.

Courses beginning with 10 and numbered below 20 are for students who have had one year of college French, or two years of high school French. Students who have had more than two years of high school French should consult with the department before entering any French course.

Courses beginning with 20 and numbered below 40 are for students who have had at least two years of college French, while courses numbered 40 and above are primarily for graduates.

Courses in all the Romance languages marked C and E are intended for Commerce and Engineering students. Similar courses

are nearly always given for 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 instructor.

Major in Romance Languages

Students are allowed to major in French alone or by combining French with Spanish and Italian. The minimum requirement will vary according to the courses taken; students should consult with the department for complete details.

FRENCH

For Undergraduates

1. Elementary French. Grammar, reading, composition, and oral exercises. Fraser and Squair's French Grammar. The reading will be done in simple modern French prose. Considerable attention will be paid to pronunciation. *Four hours a week throughout the year.* Thirteen sections. Assistant Professor GAY, Mr. COOL, Mr. MICHELL, Mr. PATZER, Mr. SCHLATTER, Mr. SHANKS, and Mr. BOARDMAN.
2. Elementary French. Special course for students who have had at least four years of Latin or German. *Tu., W., Th., F., at* 8. Assistant Professor GAY.
3. Elementary French. Begins the second semester and covers the work done in the first semester of course 1. Students taking this course may continue their work the following year with course 4. *M., W., F., S., at* 8. Mr. MICHELL.
4. Elementary French. This course completes the work of French 1 at the end of the first semester, and during the second semester covers the work of the first half of second-year French. Intended for students who have taken Elementary French in the Summer Session, or course 3 above, and for those who enter with one year of high school French. *Tu., W., Th., F., at* 12. 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 Herdler's *Scientific Reader* or other works of similar character will be introduced. *Four hours a week throughout the year.* Three sections. Mr. SCHLATTER, Mr. SHANKS, Mr. BOARDMAN.

6C. Elementary French for students in Commerce. Reading, Composition, and oral exercises. Chardenal's *Complete French Course.* Reading of easy prose. *Tu., W., Th., F., at* 9. Mr. PATZER.

10. Second-year French. Reading and grammar. The following texts are intended to represent the character of the reading, rather than the actual works that may be used in each section: Sand's *La Mare au Diable;* Merimee's *Colomba;* Daudet's Stories; Lamartine's *Jeanne d'Arc;* Renan's *Ma Soeur Henriette;* Augier and Sandeau's *Le Gendre de M. Poirier;* Moliere's *L'Avare. Throughout the year; M., W., F., at* 9. Professor SMITH. *M., W., F., at* 10. Assistant Professor GAY. *M., W., F., at* 12. Mr. SHANKS. *Tu., Th., S., at* 9. Mr. MICHELL.

11. Special second-year French. Reading and grammar. The class reading will be from *Le Roman d'un Jeune Homme Pauvre, La Petite Fadette,* and two plays of Moliere. *M., W., F., at* 11. Professor OWEN.

12. Lectures on Thought and Language. *First semester. M., at* 11. At present embodied in course 11 Professor OWEN.

13. Special second-year French. Like course 10, but designed to give a greater amount of historical reading. *M., W., F., at* 8. Associate Professor GIESE.

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. *Th., at* 12. Mr. COOL.

15. French Conversation. The work is confined mainly to the class room. Two hours a week, one-fifth credit. Except by special permission, it can be taken only in connection with some other French course. *Tu., Th., at* 8. Associate Professor GIESE. *Tu., Th., at* 10. Mr. PERRIN.

16E. Second-year French. For engineers. Continuation of course 5E. Reading in scientific and literary prose. Review of grammar. *M., W., F., at* 8. Mr. PATZER.

17C. Second-year French. For students in Commerce. A practical course in conversation, composition, and reading. *Tu., Th., at* 11. Mr. PATZER.

18. Rapid Sight Reading. The work will be largely confined to the class-room. Two hours a week, one-fifth credit. Ex-

cept by special permission, it can be taken only with some other French course. *Tu., Th., at* 9. Mr. MICHELL.

Primarily for Undergraduates

20. Advanced Reading. Continuation of course 11. The reading will be done in *Cinq Mars* and *Ursule Mirouet. Throughout the year; M., W., at* 12, *unless changed by special arrangement.* Professor OWEN.

21 French Literature. From the Renaissance to the Revolution. Lectures with collateral reading. This course is conducted in English. *Twice a week throughout the year.* (Omitted in 1907-08.) Associate Professor GIESE.

22. French Literature. The classic drama. A detailed study of the literary and social influences that produced the classic drama. The first semester will be devoted mainly to *Corneille* and *Racine*, the second, to *Moliere. Throughout the year; Tu., Th., at* 9. Associate Professor GIESE.

23. French Literature. The nineteenth century drama. Lectures and assigned reading. Representative works will be read in class. Characteristic class reading is: Hugo's *Hernani;* De Musset's comedies; Dumas' plays; Scribe's *Le Verre d'Eau;* Pailleron's *Le Monde ou l'on s'ennuie;* Rostand's *Cyrano de Bergerac. First semester; three hours a week.* (Omitted in 1907-08.) Professor SMITH.

24. Advanced Composition and Conversation. Practice in writing and speaking based upon the reading of eighteenth century authors. *Throughout the year; Tu., Th., at* 11. Assistant Professor GAY.

25. French Literature. Victor Hugo: a detailed study of the formative period and early works. It is the intention to offer the following year a course to cover the middle period of Hugo's career. Conducted in French. *Twice a week throughout the year.* (Omitted in 1907-08.) Associate Professor GIESE.

26. French Literature. The nineteenth century novel. Rapid reading of the masterpieces of French fiction, with lectures on the origin of the Romantic novel in France and its evolution through the Realistic, Naturalistic, and Psychologic schools. Balzac, Sand, Merimee, Flaubert, Zola, and Daudet will be the principal authors read. *Tu., Th., at* 10. Mr. SHANKS.

27. Conversation and Reading. *Two hours a week throughout the year.* (Omitted in 1907-08.) Associate Professor GIESE.

28. French Lyric Poetry and Versification. A study of lyric poetry from Villon to recent times. Lectures on French verse-structure from its origin to the present. *Second semester; three hours a week.* (Omitted in 1907-08.) Professor SMITH.

29C. Third-year French. For students in Commerce. Conversation, reading, and commercial correspondence. *Twice a week throughout the year.* Mr. PATZER.

30C. Fourth-year French. For students in Commerce. Conversation, reading, and commercial correspondence. A continuation of course 29C. *Twice a week throughout the year.* Mr. PATZER.

31. General Survey of French Literature. This is an elementary outline course recommended as an introduction to more extended study of special periods. The main currents of the literature and writers of prime importance will alone be dealt with. A considerable amount of reading will be done in and out of class, in addition to lectures and occasional reports on authors read. *Throughout the year; M., W., F., at* 8. Associate Professor GIESE.

32. Literature of the Middle French Period. General survey of fourteenth, fifteenth, and sixteenth centuries; particular attention will be devoted to Froissart, Commines, Villon, Rabelais, and Montaigne. *Throughout the year; Tu., Th., at* 9. Assistant Professor GAY.

33. Advanced Reading. Of suitable grade to follow course 20. Reading of Hugo's *Les Miserables. Throughout the year; M., W., at* 3. Professor OWEN.

Primarily for Graduates

40. Old French. Phonology and grammar. Lectures and reading. Primarily for graduates, but may be taken by undergraduates of especially good preparation. *Twice a week throughout the year.* (Omitted in 1907-08.) Professor SMITH.

41. Old French. An introduction to the Old French language and to the general laws of phonetic development from Latin to French. Nyrop's *Grammaire Historique de la Langue Francaise; La Chanson de Roland; Aucassin et*

Nicolette. Undergraduates of sufficient preparation will be admitted to this course. *Twice a week throughout the year.* Assistant Professor GAY.

42. Old French Literature. The Old French epic poetry. Lectures and much collateral reading. The history of the *Chansons de Geste* will be traced and several representative poems read during the year. Students in this course must be able to read Old French. Alternates with Old French 43. *Twice a week throughout the year.* (Omitted in 1907-08.) Professor SMITH.

43. Seminary in Old French. A study of the group of Old French epic poems known as the Cycle of the Crusades. Relation and development of the various branches with consideration of related prose works in Latin, Old French, and other languages. In the second part of the course a short introduction to Romance paleography will be given and some time devoted to the establishment from manuscript copies of a critical edition for a part of Godefroi de Bouillon. For graduates only. *Three hours a week throughout the year.* Professor SMITH.

44. Old Provencal. Phonology and grammar. Poetry of the troubadours and other Provencal literature. Texts: Grandgent's *Phonology and Morphology of Old Provencal;* Appel's *Provenzalische Chrestomathie;* Restori's *Letteratura Provenzale.* Primarily for graduates, but may be taken by undergraduates of especially good preparation. *Throughout the year; W., F., at* 10. Professor SMITH.

45. Principles of Language. Examination of linguistic thought, its special nature, and the less obvious verbal means of indicating both the elements of thought and their mode of combination. (See also course 12.) *First semester; Tu., at* 7:15 P. M. Professor OWEN.

ITALIAN

1. Elementary Italian. Essentials of grammar. Reading, pronunciation, and easy composition. The first text-books will be Grandgent's *Italian Grammar* and Bowen's *Italian Reader.* Thereafter the translation will be from such modern writers as Manzoni, De Amicis, Fogazzaro, Leopardi, and Alfieri. *Throughout the year; M., W., F., at* 11. Mr. SCHLATTER.

2. Italian Literature. History of Italian literature. Lectures, reading in class, and assigned work. Alternates with Italian 3. (Omitted in 1907-08.) Assistant Professor GAY.
3. Dante. An introduction to the life and times of Dante, with special study of the Divine Comedy. Alternates with course 2. Assistant Professor GAY.

SPANISH

Primarily for Undergraduates

1. Elementary Spanish. Grammar and reading. Giese's *First Spanish Book;* Alarcon's *Novelas Cortas Escogidas,* and *El Capitan Veneno;* Valdes' *Marta y Maria.* For students of the College of Letters and Science. *M., W., F., at* 12. Mr. MICHELL.

2EC. Elementary Spanish for students in Commerce and for Engineers. Giese's *First Spanish Book,* and other easy prose. Students in College of Letters and Science must take course 1, unless by special permission of instructor. Three sections. *Four times a week throughout the year, at* 8 *and* 9. Mr. COOL and Mr. MACDUFF.

3. Nineteenth Century Spanish. The modern novel, drama, and poetry will be studied. Open to students who have had elementary Spanish. *Throughout the year; three hours a week.* Alternates with course 4. (Omitted in 1907-08.) Associate Professor GIESE.
4. Spanish Literature. Reading of selections from Cervantes *(Don Quijote),* from Calderon *(El Magico Prodigioso),* and from other classics. Alternates with course 3. *Throughout the year; Tu., Th., at* 8. Mr. COOL.

5E. Second year. Scientific Spanish for Engineers. Reading and grammar. *First semester; M., W., F., at* 8. Mr. COOL.

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 4 unless allowed by special permission to enter this course. *Throughout the year; Tu., Th., at* 11. Mr. COOL.

7C. Third year in Commerce. Conversation, commercial correspondence, and reading. In this course special attention is

paid to the vocabulary of commerce. *Throughout the year; W., F., at* 11. Mr. COOL.

8C. Fourth year in Commerce. Conversation, commercial correspondence, and reading. Continuation of course 7C. *Twice a week throughout the year.* Mr. COOL.

Primarily for Graduates

9. Old Spanish. The Poem of the Cid. Lectures on the Spanish epic and collateral reading. Old Spanish grammar and phonology. Texts: *Gramatica Historica Española*, by R. Menéndez Pidal; *Poema del Cid*, edited by Pidal; *Poetas Castellanos Anteriores al Siglo XV (Biblioteca de Autores Españoles)*. Intended primarily for graduates, but may be taken by other advanced students of sufficient preparation. *Throughout the year; twice a week.* Alternates with Old Provencal. (Omitted in 1907-08.) Professor SMITH.

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 Required Studies, p. 94.)

Primarily for Undergraduates

1. Modern Norse. Olson's *Norwegian Grammar and Reader*, together with easy selections in prose and poetry. For beginners. *Three hours a week throughout the year.*

2a. Modern Norse. Selections from the *Reader*. Björnson's *Synnöve Solbakken* (Flom's edition), and his shorter peasant stories. *Three hours a week throughout the year.*

2b. Written and Oral Translation into Norse. The reading of prose selections as a basis for work in composition and conversation. *Once a week throughout the year.*

3. Kielland's *Skipper Worse* and Gundersen's *Norske Digte.* Two dramas by Holberg and three by Oehlenschlaeger are assigned for outside reading. *Twice a week throughout the year.*

4. Ibsen's *Brand* and *Peer Gynt.* As these dramas are of the greatest importance in Scandinavian literature, they are read critically and studied from both a linguistic and literary point of view. Much stress is placed on an adequate ethical interpretation. *Twice a week throughout the year.*

5. History of Dano-Norwegian Literature. Broch and Seip's *Norsk og dansk Litteraturhistorie* and Prestgard's *Norske Kvad,* with lectures and papers presented by students on the authors under discussion. *Three hours a week throughout the year.*

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. *Twice a week throughout the year.*

7a. Lectures on early Scandinavian literature and antiquities, with illustrative readings in translation. *Once a week; first semester.*

7b. Lectures on modern Scandinavian authors and literary epochs, with illustrative readings in translation. *Once a week; second semester.*

A knowledge of the Scandinavian languages is not required for courses 7a and 7b.

For Undergraduates and Graduates

8. Old Norse. Vigfusson and Powell's *Icelandic Prose Reader* or Kahle's *Altisländisches Elementarbuch* and Nygaard's *Udvalg af den norröne Literatur. Twice a week throughout the year.*

2c. Modern Norse. Olson's *Grammar and Reader,* Björnson's *Synnöve Solbakken* and the shorter peasant stories, Ibsen's *Samfundets Stötter, Et Dukkehjem, Kongsemnerne, Brand,* and *Peer Gynt.* A rapid reading course for graduates who

have a good knowledge of other modern languages. *Three hours a week throughout the year.*

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; twice a week.*
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. *Once a week; first semester.*
11. Norwegian Dialect Writers. The principal authors considered are Aasen, Vinje, Garborg, and Sivle. Some attention is also given to the language reform movement. *Once a week; second semester.*
12. Scandinavian Literature. A general survey, with critical study of special periods. *Throughout the year; twice a week.*

GERMAN

PROFESSORS HOHLFELD, VOSS; ASSISTANT PROFESSORS EVANS, ROEDDER, STERLING; DR. GOODNIGHT, DR. HAERTEL, DR. HAUSSMANN, DR. HICKS, DR. KIND, DR. PROKOSCH, DR. VEERHUSEN; MR. BLOOMFIELD, MR. BRUNS, MR. OSWALD, MR. PURIN, MR. ROLOFF, AND MR. WILD.

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

A. The elementary courses represent the work ordinarily done in first and second year classes, and are so graded as to meet the needs of high school graduates with different degrees of preparation. Students without previous work in German enter course 1; those who have had two years of high school German enter course 2, 2G, 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, 3C, or 3E. Students who possess a

thorough practical knowledge of German considerably in advance of what their high school work indicates, should present themselves for an informal examination with a view of being assigned to more advanced classes. Credit for the omitted lower work will, however, be granted only in exceptional cases, regulated by special rules of the Faculty, and never without a formal examination.

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

C. The courses from 15 to 48 are literary courses of very different degrees of advancement, those from 40 to 48 being open to undergraduate students only in exceptional cases. Many of the less advanced courses, from 15 to 27, though different in subject matter, are of about the same grade. Elections from this group, therefore, are subject to certain restrictions stated below, after course 27. Ordinarily, about twelve semester hours from courses 15 to 27 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.

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 specially 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 semester hours a year for the remaining three years, taking thus, including the thesis, a total of twenty-four semester hours in advance of course 2. At least eight of these hours should represent class work in advance of course 27. 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-fifth course in methods), 30 or 33, 50 and 51.

Germanistische Gesellschaft

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

ELEMENTARY COURSES

For Undergraduates

1. Beginners' German. Grammar and easy readings, with practice in speaking and writing German. *Four hours a week throughout the year.* Six sections. Assistant Professor EVANS, Dr. VEERHUSEN, Dr. PROKOSCH, Dr. HAUSSMANN, Mr. ROLOFF, and Mr. PURIN.

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; M., Tu., Th., F., at* 3. Dr. VEERHUSEN.

1A. Advanced First Year German. Open to students who have taken course 1B or, for some special reason, have had but one year of German at the high school. *Throughout the year; Tu., W., Th., F., at* 11. Mr. WILD.

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. For students who have had course 1, or two years of high school German, or an equivalent. Engineering freshmen may take course 2 in place of 2E. *Four hours a week throughout the year.* Seven sections. Dr. KIND, Mr. OSWALD, Mr. WILD, Mr. ROLOFF, Mr. BLOOMFIELD.

2G. Second year German. This section of German 2 is so conducted as to meet the special needs of such German-Americans as possess a fair reading and speaking knowledge of German, but are deficient in grammatical accuracy. *Four hours a week throughout the year.* Dr. HAERTEL.

2L. Second Year German. Especially arranged for students of Latin or Greek, and others willing to do extra work for the sake of more rapid progress. *Throughout the year; Tu., W., Th., F., at* 11. Dr. VEERHUSEN.

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; Tu., W., Th., F., at* 11. Assistant Professor STERLING.

2C. Second Year German. For freshmen in the Course in Commerce. Practically identical with course 2. *Throughout the year; Tu., W., Th., F., at* 9. Assistant Professor ROEDDER.

2E. Second Year German. For freshmen in engineering. A regular second year's course, like course 2, except that easy scientific prose is introduced in part of the second semester. *Four hours a week throughout the year.* Five sections. Dr. HICKS, Dr. HAUSSMANN, Mr. WILD, and Mr. PURIN.

2A. Advanced Second Year German. Open to students who enter the University with three years of high school German or its equivalent. *Four hours a week throughout the year.* Three sections. Dr. PROKOSCH, Dr. KIND, and Mr. BRUNS.

ADVANCED PRACTICE COURSES

Primarily for Undergraduates

3A. Third Year German. Modern and classical prose and verse. Oral and written work. Study of syntax. Open only to freshmen who enter the University with four years of high school German. *Throughout the year; M., Tu., W., Th., at* 12. Dr. HICKS.

3S. Scientific German. For students specializing in science who have had course 2 or 2S. Rapid reading of scientific prose. *Throughout the year; W., F., at* 9. Assistant Professor STERLING.

3C. For sophomores in the Course in Commerce. Reading, conversation, and composition. *Throughout the year; Tu., Th., at* 11. Dr. HAUSSMANN.

3E. For Sophomores in Engineering. Advanced prose on subjects of technical science. *Half-year course, given in both semesters.* Four sections. *M., W., F., at* 8. Dr. HICKS and Dr. HAERTEL.

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., at* 9. Assistant Professor STERLING.

5C. For seniors in the Course in Commerce. A continuation of the work of 4C. *Throughout the year; Tu., Th., at* 11. Dr. PROKOSCH.

6. Grammar and Composition. Open to students who have had course 2 or an equivalent, but 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., at* 12. Dr. HAERTEL.

7. Elementary Conversation. Class practice, with work at home not to exceed one hour a week. Open on the same conditions as course 6. *One hour credit. Two hours a week throughout the year.* Three sections. Dr. PROKOSCH, Dr. HICKS and Dr. HAERTEL.

8. Dramatic Reading. Recitation of poems and reading of dramas with divided parts, with special attention to pronunciation and expression. Open, after consultation, to students of fair advancement in German. Not open to freshmen. *One hour credit. F., at* 2. Assistant Professor EVANS.

9. Critical German Prose. Rapid reading in history, biography, criticism, etc. Especially designed for students who wish to read with ease German books on historical, philosophical, and literary topics. Open to students who have had at least course 2 or an equivalent. *Tu., Th., at* 2. Dr. HICKS.

10. Composition and Conversation; with special work in German syntax. Open to students who have had at least four semes-

ter hours in advance of course 2. *Two hours a week throughout the year.* Four sections. Dr. VEERHUSEN and Dr. HAERTEL.

11. Sight Reading. Rapid translation of literary and critical prose, especially intended for students who need practice in putting German into English. Open on the same conditions as course 9. *One hour credit. Twice a week throughout the year.* Mr. OSWALD.

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., at* 10. Assistant Professor EVANS.

14. Teachers' Course. A critical study of the methods of teaching modern foreign languages. Lectures, reports, discussions, and practice teaching (one hour). Review of grammar from the standpoint of the high-school teacher, and elementary phonetics (one hour). Open to seniors and graduate students. The entire course is a two-fifth study, but either part may be taken separately for one-fifth credit. *M., Th., at* 3. Professor HOHLFELD and Professor VOSS.

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. For students who have had second-year German. *M., W., F., at* 9. Dr. VEERHUSEN.

16. Classical and Modern Writers. Similar to course 15, but more advanced. Open to students who have had 2A or 3A. Courses 15 and 16 are mutually exclusive. *M., W., F., at* 3. Dr. KIND.

To make suitable four or five hour courses, 15 or 16 should be combined with 6, 7, 8, 9, 11, 17, or 20. Course 16 may also be combined with course 10.

17. Modern German Dramatists. Selected dramas of Grillparzer, Hebbel, and other authors, like Ludwig, Sudermann, and Hauptmann. A rapid reading course. *Tu., Th., at* 11. Dr. KIND.

18. Modern German Novelists. Selected novels of Scheffel, Freytag, Keller, C. F. Meyer, and Sudermann. A rapid reading course. *M., W., F., at* 11. Dr. HAUSSMANN.

20. Schiller. Introductory study of his life, and selected works. *Maria Stuart* or *Braut von Messina*, *Gedichte*, and *Wallenstein*. *Two hours a week throughout the year.* Three sections. Assistant Professor STERLING and Assistant Professor ROEDDER.

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

21. Modern German Poetry. *First semester:* Lyrics and ballads. *Second semester:* Epic poems, as Scheffel's *Der Trompeter von Säckkingen*. *M., W., F., at* 12. Assistant Professor STERLING.

22A. Heine. Introduction to the study of his life and poetry. Lyrics, *Harzreise*, and other prose writings. *First semester; three times a week.* Assistant Professor EVANS.

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; three times a week.* Assistant Professor EVANS.

23. Goethe. Introductory study of his life, and selections from his works. *Götz* and *Egmont*. *Tu., Th., at* 9. Given in alternate years. Alternates with 24. Professor Voss.

24. Lessing. Introductory study of his life, and selections from his works. *Emilia Galotti*, *Nathan*, and prose selections. *Tu., Th., at* 9. (Omitted in 1907-08.) Professor Voss.

26. Lessing, Goethe, and Schiller. An introduction to the classical literature of the eighteenth century. *Laokoon*, or other critical writings of Lessing, Goethe's *Tasso* and selected poems, Schiller's aesthetic writings, or his correspondence with Goethe. *Tu., Th., at* 12. Alternates with 27. (Omitted in 1907-08.) Professor HOHLFELD.

27. Nineteenth Century Drama. An introductory study of the development of the German drama from Kleist to Haupt-

mann. The class will read representative dramas of the period. *Tu., Th., at* 12. Alternates with 26. Professor HOHLFELD.

Courses 21 to 27 are primarily intended for juniors specializing in German, but are open to all others who have had at least six semester hours 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 equivalent, from 21 to 27.

For Undergraduates and Graduates

30. Goethe's Faust. Both parts of the poem are discussed and interpreted in class, and this work is supplemented by lectures and collateral reading in Faust literature. Conducted in English. *Throughout the year; Tu., Th., at* 11. Professor HOHLFELD.

31. Introduction to the History of German Literature. English lectures, and private reading of representative works of German literature in English translations. This course does not require a particular knowledge of the language, and is primarily intended for students who do not specialize in German. Not open, without special permission, to students below the junior class. *Throughout the year; Tu., Th., at* 5. (Omitted in 1907-08.) Dr. KIND.

33. General History of German Literature. Lectures, readings in Thomas's *Anthology* and Max Müller's *German Classics*, and the systematic study of some standard history of German Literature. *Throughout the year; Tu., Th., at* 11. Professor HOHLFELD.

34. Lyric Poetry of the Nineteenth Century. Lectures, collateral reading, and exercises in literary criticism. Especial attention will be given to the study of rhythm and meter. *Throughout the year; twice a week.*

36. Popular German Literature. *Volkslied, Märchenliteratur,* and *Volksbücher (first semester);* modern dialect literature (second semester). *Throughout the year; Tu., Th., at* 10. (Omitted in 1907-08.) Assistant Professor ROEDDER.

37. Schiller. Study and discussion of his dramas, dramatic fragments, philosophical writings, and correspondence. Lectures, collateral reading in critical literature, and reports.

Throughout the year; twice a week. Alternates with 36. Assistant Professor ROEDDER.

38. Shakespeare in Germany. A study of the more important translations of Shakespeare into German, and of the influence of Shakespeare on German literature, especially in the 17th and 18th centuries. *One semester; twice a week.* (Omitted in 1907-08.) Assistant Professor EVANS.

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. Lectures, collateral readings, and reports. *First semester; M.*, 2 *to* 4. Dr. HAUSSMANN.

41. The Romantic School in Germany. The course has for its special aim 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. Lectures, collateral readings, and reports. *Second semester; M.*, 2 *to* 4. Dr. HAUSSMANN.

42. The Literary Relation of England and Germany in the 18th Century. The course deals particularly with the influence on German literature of the Spectator, Milton, Young, Ossian, Shakespeare, and Sterne. Lectures, and papers on special topics. *First semester; twice a week.* Dr. KIND.

43. Lessing. A critical study of his life and works with special reference to his attitude towards English literature. Lectures, collateral readings, and reports. *Second semester, twice a week.* Dr. KIND.

44. History of Middle High German Literature. This course does not deal with the textual interpretation of the documents themselves, but with the evolution of the literary movements during the period from the twelfth to the end of the fifteenth century. Special attention is given to the corresponding tendencies in politics, social life, religion, and art, as also to the later reappearance of medieval ideals in modern literature. Open only to students who have completed course 52 or its equivalent. *Throughout the year; Th.*, 4 *to* 6. Assistant Professor EVANS.

45. The Novel of the Nineteenth Century. In addition to the study of the literary phenomena as such, special attention will be given in this course to the general tendencies of modern life and thought, inasmuch as they have found expression in the novel. Lectures, collateral readings, and papers on special topics. *Throughout the year; twice a week.* Dr. GOODNIGHT.

46. History of the German Drama. The course traces the development of the German drama up to the time of Lessing. The ground covered includes 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; Th.*, 4 *to* 6. Assistant Professor EVANS.

47. Proseminary 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 based in alternate years on 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. In both instances, special attention will be given to tracing the development of literary style, meter, and poetic theory. *Throughout the year; M., W., at* 9. Professor 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 fields from which subjects are chosen for investigation, form a cycle of at least three years: A. Interrelations of English and German literature during the last three centuries. B. Goethe *(first semester)* and Goethe's Faust *(second semester)*. Given in1906-07. C. The German drama since the middle of the eighteenth century. *Throughout the year; W.*, 4 *to* 6. Professor 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. German in its relation to the other members of the Germanic and Indo-germanic family of languages. Lectures and reading of selected texts to illustrate the historical development of the language, especially during the Modern High German period. *First semester; M., W., at* 11. Professor 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., at* 11. Professor 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. *Tu., Th., at* 10. Professor Voss.

53. General Phonetics. A study of the nature and production of speech sounds in the most important Indo-European languages. Open to graduate and properly prepared undergraduate students from all the language departments. *First semester; twice a week.* Dr. PROKOSCH.

54. Gothic Grammar. Readings from the Gospels. *First semester; twice a week.* (Omitted in 1907-08.) Assistant Professor 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; twice a week.* (Omitted in 1907-08.) Assistant Professor ROEDDER.

57. Introduction to the Study of *Volkskunde*. Lectures and collateral reading. *First semester; once a week.* Assistant Professor ROEDDER.

58. Old Saxon, with special reference to Germanic life and culture. Holthausen's *Altsaechsisches Elementarbuch* and extracts from the *Heliand*, ed. Behaghel. *First semester; twice a week.* In alternate years. Assistant Professor ROEDDER.

59. Germanic Mythology and Heroic Legends. Lectures and collateral reading. *Second semester; twice a week.* In alternate years. Assistant Professor 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. *W., at* 9. Professor Voss.
61. Pre-Germanic Grammar, First Part (Phonology). A study of the historical development of sounds as apparent in Gothic, Old Norse, Old English, Old Saxon, and Old High German. This course is a natural supplement to any work in Germanic philology, and at the same time a continuation of course 53. *Second semester; twice a week.* Dr. PROKOSCH.
62. Modern German Grammar. A thorough and practical study of the language as spoken and written today, with lectures on the history of the Modern High German literary language. Alternates with course 63. (Omitted in 1907-08.) *M., W., at* 10. Professor 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., at* 10. Professor Voss.
64. Pro-seminary in German Philology. For 1906-07: Old High German Texts *(first semester);* Old Saxon Texts *(second semester).* For 1907-08: Studies in the Development of German Prose Style. *S.,* 8 *to* 9. Assistant Professor ROEDDER.
65. Philological Seminary. The work of the seminary varies. While special attention is given to the classical writers of the Middle High German period, the other periods also, especially the transition period from Old to Middle High German, and from Middle to Modern High German, will be studied. 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. *Throughout the year; Tu.,* 4 *to* 6. Professor Voss.

ENGLISH

PROFESSORS FREEMAN, HUBBARD; ASSOCIATE PROFESSOR LATHROP; ASSISTANT PROFESSORS BLEYER, CAIRNS, DODGE, PYRE; DR. BEATTY, MISS BERKELEY, MR. COOK, DR. DICKINSON, DR. LEONARD, MR. NEIDIG, MR. NELLES, MR. NORTHROP, MR. ROE, AND DR. WOOLLEY.

The department of English is composed of three main divisions, one concerned with English literature, one with the English language, and one with rhetoric and composition. In each division of the department a body of related courses is maintained sufficient to cover the field in a general way, and supplemented by special courses dealing with important phases of the subject. The general design of the department is to provide in its undergraduate work a literary and linguistic discipline and a body of knowledge, appropriate as an element in a liberal education.

Literature.—The courses in English literature fall into three classes, broadly but not strictly separate: those which deal with periods of literary history, those which consider the literary activity of individual authors, and those which treat literary types. An introduction to the study of the literature is given by an extended course of the first class, the General Survey of English Literature (30), which indicates the current taken by the history of thought and taste among the English people during the time which it covers, and outlines the relations of the most important authors to the literary movements of their age. This introduction is followed by a series of courses (32a, 32b, 33, 34, 35) dealing more fully and in a more advanced way with particular periods. In several of these courses international literary relations and the influence on England of the course of thought in the rest of Europe are treated to some extent. Similar courses are devoted to American literary history (40, 47).

In the courses dealing with particular authors, their representative works are studied with a view to an understanding of their career as a whole.

The courses dealing with types or forms of literature vary somewhat in their emphasis. In some it is placed upon the conditions determining the existence of the type, and upon the facts of its development; in others the aesthetic principles involved in the production of the works are discussed; but the main interest of these courses is the absolute worth of the works themselves.

Composition.—The courses in composition are designed primarily to increase the student's power of expression. Introductory to all work in rhetoric and composition is the general course (1) required of all students in the College of Letters and Science, Engineering, and Agriculture. This is followed by courses, some general (2, 6), some dealing with special forms of discourse (19a, 19b, 5, 11), in which the work consists mainly of practice in writing.

Language.—In the undergraduate courses in language the aim is to give a preparation for the more advanced historical study of English. In the courses in Anglo-Saxon and Middle English the main facts concerning the historical development of the language are set forth, and, as far as possible, the general principles of linguistic science are illustrated. In the second year (senior) courses particular attention is given to Anglo-Saxon poetry and its relation to the literature of other Germanic languages. A course in Modern English Grammar is given to meet the needs of those who are preparing to teach.

English as a Major Study

Students who make English their major study are required to take forty hours in the department, including the thesis. In this total must be included course 1, course 30, usually best taken in the sophomore year, course 20, best in the junior year, and course 36, best in the senior year. With reference to the other courses forming part of the major work, students will consult with the head of the department, or with advisers appointed by him.

English as an Elective outside of the Major Study

The attention of students who do not make English their major subject is called to courses 30, 40, 48, and 2. Such students desiring to take these or other courses in English should confer with the instructor concerned.

RHETORIC AND COMPOSITION

Primarily for Undergraduates

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.

Three hours a week throughout the year. Twenty-three 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. Professor HUBBARD, Assistant Professor CAIRNS, Assistant Professor DODGE, Dr. BEATTY, Mr. COOK, Dr. DICKINSON, Miss BERKELEY, Dr. WOOLLEY, Mr. ROE, Mr. NEIDIG, Mr. NELLES, and Dr. LEONARD.

2. Sophomore Composition. Elective for students who have finished the required English of the freshman year. *Throughout the year; Tu., Th., at* 8, 11, *and* 12. Dr. DICKINSON, and Miss BERKELEY.

19. Newspaper Writing. Practice in newspaper reporting, correspondence, and other details of a reporter's work; and instruction in methods of practical journalism, with special lectures by newspaper men, on various phases of journalistic work. Open to students who have had considerable practice in writing. *First semester; Tu., Th., at* 10. Assistant Professor BLEYER.

19a. Newspaper Writing. The course includes practice in editorial work, preparation of special articles, and other forms of journalistic writing; the history and development of the American press; and a study of the organization and management of the modern newspaper, with special lectures by newspaper editors. Open to those who have taken English 19, and to others, by special permission. *Second semester; Tu., Th., at* 10. Assistant Professor BLEYER.

19b. Narrative Composition. The study of some representative forms of the story, as illustrations of its development, with exercises in plot-structure, technique, and criticism. Open to seniors, juniors, and to sophomores who have done very good work in English 1. *Second semester; Tu., Th., at* 10. Dr. BEATTY.

6. Advanced Composition. Elective for juniors and seniors, and for sophomores who have done very good work in course 1. *Throughout the year; Tu., Th., at* 11. *Three-fifths credit.* Assistant Professor DODGE.

ENGLISH LANGUAGE

Primarily for Undergraduates

20. Anglo-Saxon and Middle English. 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. A considerable amount of Anglo-Saxon prose and Middle English is read, the historical development of the language is set forth, and the general principles of linguistic science are illustrated. Required of students who take English as their major. The work of the first semester may be elected without the work of the second semester. First semester, Anglo-Saxon; second semester, Middle English. *Throughout the year; M., W., F., at* 9. Professor HUBBARD.

23. Modern English Grammar. Designed to meet the needs of students who expect to teach. The general principles of linguistic science are set forth and illustrated from English; attention is given to the psychology of speech. The facts of modern English grammar are considered in the light of the historical development of the language. Open to juniors and seniors. *Second semester; Tu., Th., at* 8. Professor HUBBARD.

25. English Language. A study of the development of the English language with special reference to the form and meaning of words; designed to meet the needs of those preparing to teach English, as well as of those interested in linguistics. *First semester; Tu., Th., at* 12. Assistant Professor BLEYER.

For Undergraduates and Graduates

22. Beowulf. The whole poem is read critically; its relation to the literature of other Germanic languages is considered. As far as possible the course is made to serve as an introduction to the study of old Germanic life. Open to seniors. *First semester; M., W., F., at* 8. Professor 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., at* 8. Professor HUBBARD.

26. Principles of Etymology and Semasiology. A detailed study of the development of the meaning of words as illustrated by English and other languages. *Second semester; Tu., Th., at* 12. Assistant Professor BLEYER.

For Graduates

24. English Philology Seminary. Critical study of texts; historical grammar; dialects. The work is varied from year to year. A course in Anglo-Saxon grammar with special reference to Germanic relations is given at least once in three years; this is designed to meet the needs of students of German as well as students of English. In other years courses are given in which the critical study of some Anglo-Saxon or Middle English Text is pursued. The subject for 1907-08 is Anglo-Saxon Grammar. *Two hours a week throughout the year.* Professor HUBBARD.

ENGLISH LITERATURE

Primarily for Undergraduates

30. General Survey of English Literature. This course includes a survey of the history of English literature from the earliest times to the middle of the nineteenth century, and a careful study 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., at* 8. Dr. DICKINSON.
Section 2, *M., W., F., at* 9. Assistant Professor PYRE.
Section 3, *M., W., F., at* 10. Assistant Professor BLEYER.
Section 4, *M., W., F., at* 11. Assistant Professor CAIRNS.

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., at* 12. Professor HUBBARD.

40. American Literature. The aim of this course is to give a general survey of literary writings in America from the earliest times, keeping in mind their relations to continental and English literature, and to national development. An attempt is made to meet the needs of students who expect to teach American literature in high schools. This course must be preceded by course 1, and should be preceded or accompanied by course 30. *Throughout the year; Tu., Th., at* 9 *and* 10. Assistant Professor CAIRNS.

48. Introduction to English Poetry. In this course a small number of representative poems will be studied thoroughly. The course is designed primarily for students who expect to elect only one course in English, and is open to election by all sophomores, juniors, and seniors. Students who desire to elect any other course in English literature after taking English 48 will be required to take English 30 before or with the advanced course. *Throughout the year; Tu., Th., at* 8. Associate Professor LATHROP.

For Undergraduates and Graduates

32a. The Sixteenth Century. This course covers the prose and the poetry of the period, exclusive of the drama. It deals briefly with the Revival of Learning and at length with the literature from Wyatt to the death of Spenser. Some attention is given to the influence of Italy and France. Students are required to do considerable reading and to write papers regularly on their reading. *First semester; M., W., F., at* 9. Alternates with course 33. (Omitted in 1907-08.) Assistant Professor DODGE.

32b. The Seventeenth Century. *Second semester; M., W., F., at* 9. Alternates with course 33. (Omitted in 1907-08.) Assistant Professor DODGE.

33. The Eighteenth Century, (from Dryden to Cowper). *Throughout the year; Tu., Th., at* 9. Alternates with courses 32a and 32b. (Omitted in 1906-07.) Associate Professor LATHROP.

34. The Romantic Movement. *First semester; M., W., F., at* 10. Assistant Professor PYRE.

35. The Victorian Era. *Second semester; M., W., F., at* 10. Assistant Professor PYRE.

36. The Drama. Shakespeare. A part of the first semester is devoted to the history of the development of the drama, the remainder of the year to Shakespeare. All the thirty-seven plays are read, while more specific attention is given to a part of his work by a detailed study of certain plays representative of the different periods of his dramatic career. The course is open to seniors, and is required of seniors who take English as their major. *Throughout the year; M., W., F., at* 11. Professor FREEMAN.

37. Epic Poetry. Lectures on the characteristics and varieties of epic poetry, and on the principal world epics. Collateral reading and papers. The members of the class are expected to obtain and preserve copies of the principal world-famous national poems (the foreign epics in translation). Open to juniors and seniors. *Throughout the year; M., W., F., at* 10. Alternates with course 38. Given in 1907-08. Professor FREEMAN.

38. English Lyric Poetry. A study of the best lyrical poems from the time of Wyatt and Surrey to that of Tennyson. *Throughout the year; M., W., F., at* 10. Alternates with course 37. (Omitted in 1907-08.) Professor FREEMAN.

39. The Novel. During the first semester the English novel of the eighteenth century is the subject of the course. Attention is given to the influence of Spanish and French upon English fiction and of English upon French and German fiction. Novels by the most important English authors of the eighteenth century are read, and the attempt is made to determine the contribution of each writer to his art. Thackeray, and George Eliot are studied. The first semester may be taken without the second, but not the second without being preceded by the first. *Throughout the year; Tu., Th.*, 10. Associate Professor LATHROP.

42. Poetics. The science of verse. The history of English verse-forms. *First semester; Th.*, 2 *to* 4. Assistant Professor PYRE.

43. Carlyle and Ruskin. The somewhat detailed study of special texts, combined with outside reading and papers on the reading. *First semester; Tu., Th., at* 9. Assistant Professor DODGE.

43a. Newman and Arnold. On the same plan as 43. *Second semester; Tu., Th., at* 9. Assistant Professor DODGE.

45. Browning. The interpretation of representative poems. *First semester; M., W., F., at* 12. Professor HUBBARD.

46. Literary Criticism. The course considers the laws of literature as a social phenomenon, and the chief theories as to the origin and development of imaginative expression. The theories especially considered are the evolutionary, or comparative; the historical; and the aesthetic. The first theory is illustrated by a study of the English popular ballad, folk tale, and drama; and the other theories by the

study of some critical masterpieces, with particular reference to English literature. The course has as one of its aims to give the student canons of judgment which are independent of particular periods or authors. *Throughout the year; Tu., Th., at* 9. Dr. BEATTY.

47. Significant Movements in American Literature. In this course different aspects of the development of American literature are taken up for detailed consideration. In 1906-07 the first semester was devoted to the development of the short story, with especial reference to Irving, Hawthorne, and Poe; the second semester to a study of American political satire. Open to graduates, and to undergraduates who have completed course 40 or its equivalent. *Tu., Th., at* 8. Assistant Professor CAIRNS.

49. English Biography. Lectures on English biographical writing, with detailed study of classic biographies. *First semester; Tu., Th., at* 11. (Omitted in 1907-08.) Assistant Professor PYRE.

50. The Teaching of English. This course includes the presentation of the aims, methods, and organization of the high school work in English; a consideration of practical means of solving the problems of teaching English under present conditions in both large and small high schools; practice work in the correction of compositions and in the preparation of study plans for composition and reading; with as much practice teaching as conditions permit. Designed for students who are preparing to teach English in the high schools. *Throughout the year; W., at* 12. Assistant Professor BLEYER.

50a. The High School Course in English. The presentation of the aims, methods, and organization of high school work in English, with a review of the principles of rhetoric and composition, and practice in theme correcting. Designed for students who are not taking their major in English, but who desire to teach English in high school as a secondary subject. *Second semester; M., at* 12. Assistant Professor BLEYER.

52. Modern Drama. English dramatic literature from the Restoration to the present time. Lectures, collateral reading, and analysis of plays. *Throughout the year; Tu., Th., at* 11. Assistant Professor PYRE.

Primarily for Graduates

51. The Predecessors of Shakespeare. History of the earlier Elizabethan drama, with special consideration of certain problems; study of the works of Kyd, Greene, Peele, Marlowe and Lyly. *Two hours a week throughout the year.* Professor HUBBARD.

44. English Literature Seminary. The subject varies from year to year. Previous topics have been: Browning; Carlyle, Ruskin, Arnold, and Newman; Tennyson; Coleridge; Lowell and Emerson; Chaucer; Milton; Shakespeare. The subject for 1906-07 is the Romantic Movement. *Throughout the year; Tu.*, 4 *to* 6. Open to graduates and to properly qualified seniors. Professor FREEMAN and Assistant Professors DODGE and PYRE.

PUBLIC SPEAKING

ASSISTANT PROFESSOR LYMAN, MR. BAKER, MISS BASHFORD, AND MR. HALL.

The courses in public speaking are designed to give preparation in two general lines of work:—in elocution, interpretative reading, and dramatic presentation; and in the composition and delivery of public addresses. The courses are so arranged as to make possible systematic and progressive study in either branch of public speaking during the sophomore, junior, and senior years. In elocution, the elementary course, 12, may be followed by the more advanced courses, 14, 16, and 18. In composition, the elementary course, 5, should precede the specialized courses, 3 and 11a. Course 12 in elocution forms a desirable part of the preparation for all advanced work in public speaking. In cases where oratory is the form of public speaking which a student wishes to pursue, course 12 may be followed by not more than two of the following courses: 13, 15 and 8.

The University of Wisconsin participates in several inter-collegiate contests in oratory and debate. For these contests, the courses in public speaking are designed to give preparation. Men desiring to make inter-collegiate debating teams are advised to consider courses 5, 11a, 11b, 13 and 8. Men desiring to enter oratorical contests should consider courses 5, 3, 13. Students who

desire to become public readers or teachers of English literature, should consider courses 12, 14, 16, and 18.

Two of the courses in public speaking, 5 and 11, may be counted toward the English major. Not more than ten hours of public speaking in addition to course 12 can be counted toward the bachelor's degree.

COMPOSITION COURSES

Primarily for Undergraduates

5. The Composition of Public Addresses. This course deals with the composition of the most important kinds of public addresses, including the argument, the eulogy, the commemorative addresses, and other forms. The work consists of lectures, a study of text books, analysis of master pieces, practice in the composition of the various forms, frequent class room exercises, five long themes during the year, and personal consultation. This course is fundamental in public speaking, and is recommended to sophomores who desire to become proficient speakers. *Throughout the year; M., W., F., at* 11. Assistant Professor LYMAN and Mr. BAKER.

3. Oratorical Themes. This course is intended as special preparation for those who wish to enter oratorical work. It is designed primarily for juniors. The work consists of lectures on the theory of oratory, the preparation of original orations, class room exercises, personal conferences and criticism. At least three orations will be written during the semester. *First semester; Tu., Th., at* 12. Assistant Professor LYMAN and Mr. BAKER.

11a. Argumentative Themes. This course, followed by 11b, is intended as special preparation for argumentation and debate. Training in analysis, brief-drawing, evidence, refutation; study of the principles of conviction, persuasion and rhetorical presentation. Three written arguments with short class themes. *Second semester; Tu., Th., at* 10. Assistant Professor LYMAN and Mr. BAKER.

COURSES INCLUDING DELIVERY

Primarily for Undergraduates

1. Elementary Public Speaking. For freshmen only. Designed primarily for men in literary societies and preliminary to

all advanced courses. The purpose of this course is to promote effective delivery by starting correct habits of breathing, vocalization, ease of presence, and of movement. Short selections will be studied, practiced, and delivered. The main emphasis of the course will be drill in class room, little work outside being required. The course is limited in number. The consent of instructors is required. *No university credit given. Second semester; twice a week. Hours to be arranged.* Assistant Professor LYMAN and Mr. BAKER.

13. Oratorical Delivery. Intended to follow course 3. Study of the principles of oral expression for the cultivation of a natural and direct style. Prepares students for participation in college oratory and debating. This course should be preceded by the elementary course, Elocution 12. *Second semester; Tu., Th., at* 12. Mr. HALL.

15. Practical Public Speaking. (Elective in the College of Law). 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 and students in the College of Law who have taken no courses in elocution, but who wish some general training in public speaking. *Throughout the year; Tu., Th., at* 11. Assistant Professor LYMAN.

11b. Debating. Practical work in brief drawing, the collection and handling of evidence, and debating. Each student will prepare three debates under the direction of the instructor, construct briefs, and participate in class room debates. In addition each student will speak several times from the floor. Personal consultation with the instructor on thought, composition, and delivery. This course is a critical and practical study of debating. The class is limited in number. The course can be taken only with the consent of the instructor, and is open only to those who have had course 11a or 5. *First semester; hours to be arranged. Two-fifths credit.* Assistant Professor LYMAN.

8. Ex-tempore Speaking. Practice in the rapid preparation of speeches on the topics of the day, and in the impromptu delivery of the same. Lectures on the short speech and ex tempore speaking. *Second semester; Tu., Th., at* 12. Assistant Professor LYMAN.

HISTORY OF ORATORY

Primarily for Undergraduates

17. History of Oratory. *Second semester, Tu., Th., at* 9. (Omitted in 1907-08.) Assistant Professor LYMAN.

ELOCUTION

Primarily for Undergraduates

12a. Elementary Elocution. Vocal culture, exercises in breathing, position and gesture. Drill in pronunciation, articulation and gesture. Daily practice in vocal expression for the cultivation of finished style in reading and speaking. Delivery of short selections. This course will be divided into sections of twelve to fifteen. *Throughout the year; M., W., F., at* 9 *and* 10; *Tu., Th., S., at* 9. Miss BASHFORD and Mr. HALL.

12b. Elementary Elocution. Beginning section in the work of course 12a. *Second semester; hours to be arranged.* Miss BASHFORD.

14. Advanced Elocution. Advanced study in physical culture, voice culture, reading, and speaking. The principles of quality, pitch, force, tone, emphasis, and action. Preparation and delivery of selections from standard literature. Private rehearsals. This course is open only to those who have taken course 12a or 12b. *Throughout the year; Tu., Th., at* 10. Miss BASHFORD.

16. Interpretative Reading. Development of growth and originality in the interpretation of literature. Intended for those who are interested in public reading, and the teaching of English literature. Reading of Shakespeare, Browning, Tennyson, Shelley, and others. Open to those who have taken courses 12 and 14. *Throughout the year; Tu., Th., at* 11. Mr. HALL.

18. Dramatic Reading. *First semester; Tu., Th., at* 12. *Assistant* Professor LYMAN.

MATHEMATICS

PROFESSORS SLICHTER, VAN VLECK; ASSISTANT PROFESSORS DOWLING, SKINNER; MISS ALLEN, MR. DUVAL, MR. GRIMES, MR. MARCH, MR. MORITZ, MR. SMITH, MR. WOLF; MISS COOPER, AND MR. JOHNSON.

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

A. Courses 1 to 7 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 fullfilment of requirement "c" (see requirements for degree of Bachelor of Arts), may choose six hours from any of the first six courses, provided courses 3 and 4 are not both chosen.

Students electing mathematics with a view of teaching the subject in the high schools, will be expected to complete at least courses 5 and 6, together with the courses that necessarily precede them.

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

C. Courses 41 to 51 are intended primarily for graduate students.

Major in Mathematics

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

For Undergraduates

1. Algebra. For students presenting one unit of algebra for entrance; prerequisite to all other courses in mathematics except 2. *Three hours a week for one semester.*

   First semester:

   Section 1, *M., W., F., at* 8. Miss ALLEN.

   Section 2, *M., W., F., at* 9. Mr. DUVAL.

Section 3, *Tu., Th., S., at* 9. Mr. DUVAL.
Section 4, *M., W., F., at* 10. Assistant Professor SKINNER.
Section 5, *Tu., Th., S., at* 10. Mr. JOHNSON.
Section 6, *M., W., F., at* 2. Mr. JOHNSON.
Section 7, *M., W., F., at* 3. Mr. DUVAL.

FOR STUDENTS IN THE COURSE IN COMMERCE.

Section 8, *Tu., Th., S., at* 8. Miss ALLEN.
Section 9, *Tu., Th., S., at* 8. Mr. DUVAL.
Section 10, *M., W., F., at* 2. Miss COOPER.

Second semester:
M., W., F., at 10. Miss ALLEN.

2. Trigonometry. Plane trigonometry and an introduction to spherical trigonometry; prerequisite to all other courses in mathematics except 1, 3, and 7. *Three hours a week for one semester.*

First semester:
Section 1, *M., W., F., at* 10. Miss ALLEN.
Section 2, *M., W., F., at* 2. Mr. DUVAL.

Second semester: Sections and instructors are the same as in sections 1 to 7 in course 1.

3. Analytic Geometry. Recommended to students presenting one and one-half units of algebra for admission and elective to students who have taken course 2. *Second semester; M., W., F., at* 9. Miss ALLEN.

4. Analytic Geometry. Elementary course. *Throughout the year:*
Section 1, *Tu., Th., at* 10. Assistant Professor DOWLING.
Section 2, *Tu., Th., at* 11. Miss ALLEN.

5. Calculus. Elementary course. Differentiation and integration of functions with the usual geometric 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., at* 10. Assistant Professor DOWLING. *Section* 2, *M., W., F., at* 11. Professor VAN VLECK.

6a. Determinants and Theory of Equations. *First semester; Tu., Th., at* 12. Miss ALLEN.

6b. Analytic Geometry. A continuation of course 3 or 4, devoted especially to elementary analytic geometry of three dimensions. *Second semester; Tu., Th., at* 12. Assistant Professor SKINNER.

7. Commercial Algebra. Required of students in the Course in Commerce. *Second semester; three hours a week,* at hours as in sections 8, 9, and 10 in course 1. Miss ALLEN, Miss COOPER, and Mr. DUVAL.

For Undergraduates and Graduates

11. Advanced Calculus. A working course. Partial derivatives, line and multiple integrals, Green's theorem, etc., with their applications to problems in geometry and mechanics. *First semester; M., W., F., at* 9. Assistant Professor 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., at* 9. Assistant Professor SKINNER.

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., at* 11. Professor SLICHTER.

15. Projective Geometry. Lectures based upon Reyes' *Geometrie der Lage. Throughout the year; Tu., Th., at* 11. Assistant Professor DOWLING.

14. Modern Methods in Analytic Geometry. *First semester; M., W., F., at* 8. Assistant Professor 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., at* 8. Assistant Professor DOWLING.

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. *Second semester in* 1906-07, *and first semester,* 1907-08; *M., W., F., at* 8. Assistant Professor SKINNER.

18. Theory of Probabilities. This course is adapted to the needs of students of science and economics. *Second semester; W., F., at* 12. Professor SLICHTER.

20. Theory of Analytic Functions. In alternate years. *Throughout the year; M., W., F., at* 12. (Omitted in 1907-08.) Professor VAN VLECK.

21. Theory of Functions of a Real Variable. In alternate years. *Throughout the year; M., W., F., at* 12. Professor VAN VLECK.

For Graduates

The following courses are varied from year to year according to the needs of the students, other courses being introduced.

41. Elliptic Functions. Arranged to give a working knowledge of the functions of Weierstrass and Jacobi. *Throughout the year; Tu., Th., at* 12. Assistant Professor DOWLING.

42. Linear Differential Equations. An introduction to the modern theory of linear homogeneous differential equations, with a study of some of the chief functions which they furnish. *Throughout the year; M., W., F., at* 9. Professor VAN VLECK.

43. Modern Theory of Differential Equations. This course is supplementary to course 42, covering an entirely different range of topics. One hour weekly is devoted to seminary work. *Throughout the year; M., W., F., at* 9. (Omitted in 1907-08.) Professor VAN VLECK.

44. Higher Geometry. A general course in higher geometry. *Throughout the year; M., W., F., at* 8. (Omitted in 1907-08.) Assistant Professor DOWLING.

45. Higher Plane Curves. Seminary course. *Throughout the year; Tu.,* 4 *to* 6. (Omitted in 1907-08.) Assistant Professor DOWLING.

46. Groups of Finite Order. A study of the fundamental properties of groups, followed by an examination of a few of the more important groups and their applications to geometry and analysis. In alternate years. *Throughout the year; Tu., Th., S., at* 12. Assistant Professor SKINNER.

47. Continuous Groups. An exposition of Lie's theory, with application to differential equations, geometry, and complex number systems. *Throughout the year; Tu., Th., S., at* 9. Assistant Professor SKINNER.

48. Problems in the Theory of Point Sets. Seminary course. *Throughout the year; the hour to be determined.* Professor VAN VLECK.

50. Theoretical Hydrodynamics. The theory of the ordinary motion of fluids is first taken up, and this is followed by a study of theory of waves in liquids. *Throughout the year; Tu., Th., at* 11, *and a third hour to be determined.* Professor SLICHTER.
51. Theory of Potential and Harmonic Functions, inclusive of a study of Fourier's Series. *Throughout the year; Tu., Th., at* 8 *and M., at* 12. Professor SLICHTER.

MATHEMATICS 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.

CHEMISTRY

PROFESSORS DANIELLS, KAHLENBERG, KREMERS; ASSOCIATE PROFESSOR LENHER; ASSISTANT PROFESSOR FISCHER; DR. DOUGHTY, MR. DU MEZ, DR. HALL, DR. KOELKER, MR. KRAUSKOPF, MR. MCDANIEL, DR. MOODY, MR. NORTH, DR. SHINN, MR. TIBBALS, MR. WOODS; MISS GAGE, MR. HILL, MR. JOHNSON, MR. SIEVERS, AND MR. SCHULZ.

Primarily for Undergraduates

1. General Chemistry. Lectures and laboratory work. *Full study throughout the year.* Associate Professor LENHER, and assistants.
2. General Chemistry for Freshmen in the College of Engineering. *Two lectures, one recitation and one three-hour laboratory period a week throughout the year.* Associate Professor LENHER and assistants.
3. General Chemistry. For students in Pharmacy; the laboratory work is especially designed for them. *Eight-fifths study for the first semester; three-fifths for the second semester.* Associate Professor LENHER and Mr. SIEVERS.
5. Research Work. Designed for students who desire to prepare a baccalaureate thesis in chemistry. Associate Professor LENHER.
6. Advanced Inorganic Chemistry. Required of students in Pharmacy. Course 3 is a prerequisite. *Full study during the first semester. Lectures and recitations, Tu., Th., F., at* 10. Professor KREMERS and Mr. SCHULZ.

10. Analytical Chemistry. Qualitative. *Throughout the year; with lectures and discussions once a week.* Professor DANIELLS, Dr. MOODY, and Mr. KRAUSKOPF.

10a. Qualitative Analysis. For students in Pharmacy. *Daily during the first half of the second semester.* Professor DANIELLS and Mr. SIEVERS.

12. Analytical Chemistry. For sophomore engineers. *Two laboratory periods a week. First semester,* qualitive analysis, Professor DANIELLS, Dr. MOODY and Mr. KRAUSKOPF.

13. Quantitative Chemical Analysis. For engineers: continuation of course 12. The analysis of metals, ores, minerals, and economic products. *Three-fifths study throughout the junior year.* Professor DANIELLS and Dr. MOODY.

14. Water Analysis. For students in Sanitary Engineering. *Second semester; five-fifths study.* Professor DANIELLS.

15. Quantitative Analysis. For students in Pharmacy. *Daily during the second half of the second semester.* Professor DANIELLS and Mr. SIEVERS.

16. Toxicology, Urine Analysis, and Sanitary Water Analysis. Open only to those who have taken at least one semester of quantitative analysis. *Second semester, daily.* Professor DANIELLS.

17. Course for Teachers. This course consists of laboratory work, assigned reading, and conferences and discussions. Credit according to the amount of work done. A two-fifths credit towards the University teachers' certificate will be allowed students who have completed this course. Open to all who have completed three semesters of chemistry. Professor DANIELLS.

18. Alkaloid Assay. One fifth required of students in the pharmacy course during second semester. Additional work may be elected upon consultation. Assistant Professor FISCHER.

20. Organic Chemistry. Lectures and laboratory work. *Full study throughout the year.* In the first semester the work will be chiefly on the aliphatic, and in the second semester on the aromatic compounds. *Lectures, M., W., and six hours laboratory work.* Dr. KOELKER and Mr. JOHNSON.

27. Advanced Organic Chemistry. Required of students in Pharmacy. *Full study during the second semester. Tu., Th., F., at* 10. Professor KREMERS and Mr. SCHULZ.

33. Physical Chemistry. For seniors who desire to prepare a baccalaureate thesis. Professor KAHLENBERG.

40. Plant Chemistry. A three-fifths study supplementary to Pharmacognosy (Botany 22). *Recitation, M., at* 10. Professor KREMERS and Miss GAGE.

50. Assaying. A course in practical assaying. *Second semester; hours to be arranged.* Associate Professor LENHER and Mr. TIBBALS.

For Undergraduates and Graduates

4. Chemical Preparations. Laboratory course in the preparation of typical inorganic compounds. *At least two periods a week.* Associate Professor LENHER.

11. Analytical Chemistry. Quantitative. *One lecture and four laboratory periods a week.* Professor DANIELLS.

21. Preparation of Organic Compounds. Laboratory course in the preparation of typical organic compounds. Dr. KOELKER.

22. Research in Organic Chemistry. Students desiring to become acquainted with the methods of research in organic chemistry may take work leading to senior theses or to theses for higher degrees. Dr. KOELKER.

23. Seminary in Organic Chemistry. Advanced students meet weekly to report on assigned topics relating to researches in organic chemistry. Dr. KOELKER.

24. Advanced Organic Chemistry. One lecture throughout the year on selected topics. In 1907-08 the subjects will be selected from the aliphatic and aromatic series. Dr. KOELKER.

28. Chemistry of Alkaloids. General survey course of the chemistry of alkaloids. *One lecture a week during the second semester.* Assistant Professor FISCHER.

29. Chemistry of the Volatile Oils, including their botanical relation and assay. *Work arranged upon consultation with the instructor.* Professor KREMERS.

30. Physical Chemistry. Lectures and recitations supplemented by laboratory exercises in physico-chemical measurements. Must be preceded by chemistry 1. *Full study throughout the year. Lectures and recitations. First semester, Tu., Th., at* 8; *second semester, W., F., at* 8. Professor KAHLENBERG and Dr. SHINN.

31. Electrochemistry. Lectures and recitations twice a week. Laboratory work in electrochemical measurements supplements the lectures, and with them makes a full study. *First semester; lectures: W., F., at* 8; *laboratory work throughout the year.* Professor KAHLENBERG and Dr. SHINN.

32. Thermal Chemistry. *Second semester; lectures: M., at* 8; *and one three-hour laboratory period a week.* Professor KAHLENBERG.

41. Plant Chemistry. Supplementary to plant physiology. *Three-fifths to five-fifths, either semester, or throughout the year.* Professor KREMERS.

42. Research Work. Special subjects for senior theses or graduate work on alkaloids, and the chemistry of foods. *Work to be arranged upon consultation.* Assistant Professor FISCHER.

43. Research Work. Special subjects for senior theses or graduate work on the chemistry of volatile oils or other subjects of organic chemistry, with special reference to plant chemistry. *Work will be arranged upon consultation.* Professor KREMERS.

44. Chemistry of Alkaloids and their Assay. General survey course of the chemistry of alkaloids. *One lecture a week during the second semester.* Assistant Professor FISCHER.

46. Chemistry of Foods and their Adulterations. Prerequisites are course 1, General Chemistry, and one semester's work each in qualitative and quantitative analysis, and organic chemistry. *A five-fifths course during the second semester.* Assistant Professor FISCHER.

Primarily for Graduates

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 throughout the year.* Dr. SHINN.

35. Advanced Physical Chemistry. Lectures on selected topics. In 1908 the lectures will be on the subject of solutions. *Second semester; Th., at* 8. Professor KAHLENBERG.

36. Advanced Electrochemistry. A course in the preparation of chemical compounds by means of electrolysis and the electric furnace. Weekly conferences accompany the labora-

tory work. *Full study throughout the year; hours to be arranged.* Professor KAHLENBERG and Dr. SHINN.

37. Research Work in Physical Chemistry. Students having sufficient training may take up research work in physical chemistry, for which every facility is furnished. This course is especially designed for graduates seeking higher degrees. *Full study throughout the year; hours to be arranged.* Professor KAHLENBERG.

38. Seminary in Physical Chemistry. Original articles of importance will be studied in detail, with a view to broaden and deepen the understanding and to act as a stimulus to further research. *At least once a week throughout the year.* Professor KAHLENBERG.

48. Seminary in Plant Chemistry. The seminary will meet every other Wednesday at 4, for the discussion of topics of organic chemistry, with special reference to plant chemistry. Professor KREMERS.

51. Advanced Inorganic Chemistry. Special attention is given to the discussion of modern theories of chemistry. *Lectures, M., W., at* 2. Associate Professor 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.* Associate Professor 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. Associate Professor LENHER.

54. Seminary in Inorganic Chemistry. Special topics in inorganic chemistry will be studied, reference being constantly made to the original published matter. Associate Professor LENHER.

PHYSICS

PROFESSORS MENDENHALL, SNOW; ASSISTANT PROFESSOR TAYLOR; MR. COLTON, DR. ELSTON, DR. INGERSOLL, MR. MILLER, MR. TERRY; MR. BEWICK, MR. BRIDGMAN, MR. BURRER, MR. RUGGLES, MR. SUYDAM, MR. WENIGER, MR. WETZEL, AND MR. WILLIAMS.

Following the general lectures and introductory laboratory practice given in course 1, this department offers advanced work

which may be divided into two general lines. Courses 2 to 7 are arranged for those who are desirous of obtaining a more special knowledge of some of the newer developments in physics, or for those who are preparing to teach. Especial emphasis is laid upon courses 2 and 3, which are teachers' courses, the aim here being to train the student in the clear presentation of this study, and to acquaint him with the details of manipulation of demonstrational apparatus. Courses 8 to 20 are designed for those who are preparing to do special work in physics, and for these courses an adequate mathematical preparation is a prerequisite. This should include a working knowledge of the differential and integral calculus, and a completion of the equivalent of courses 2, 3, and 8.

Primarily for Undergraduates

1. General Lectures and Introductory Laboratory Practice. This course is open to election by all students, and may be taken without difficulty by those who have not had the mathematics of the freshman year. *A full study throughout the year.* Lectures: *M., Tu., W., Th., at* 12. Professor SNOW. One recitation by the class in smaller sections. Mr. COLTON. Laboratory practice, *twice a week at hours to be arranged.* Mr. MILLER, Mr. BEWICK, Mr. BRIDGMAN, Mr. BURRER, Mr. RUGGLES, Mr. SUYDAM, Mr. WETZEL, and Mr. WILLIAMS.

For Undergraduates and Graduates

2a. Advanced Course of Experimental Lectures. Heat and Light. *First semester; M., W., F., at* 2. Professor MENDENHALL.

2b. Advanced Course of Experimental Lectures. Electricity and Magnetism. *Second semester; M., W., F., at* 5. Professor SNOW.

Together with the accompanying laboratory practice (courses 3a and 3b), courses 2a and 2b are especially adapted to the needs of those expecting to teach. With this end in view, the lecture demonstrations are performed by the students before the class, thus giving each person practice in the presentation and illustration of special topics.

3a. Advanced Laboratory Practice. Heat and Light. *First semester; S.,* 9 *to* 1. Professor MENDENHALL.

3b. Advanced Laboratory Practice. Electricity and Magnetism. *Second semester; S., 9 to 1.* Mr. TERRY.

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

7. High Temperature Measurement. Recent developments in theory and practice will be considered, accompanied by laboratory practice with the various methods. *Second semester; one lecture and one laboratory period a week.* Professor MENDENHALL.

8a. Mathematical Physics. Theory of Electricity and Magnetism. *First semester; Tu., Th., F., at* 10. Assistant Professor TAYLOR.

8b. Mathematical Physics. Special topics in physical optics: Theory of the grating, spectroscopy, and dispersion. The first part of Schuster's *Theory of Optics* is used as a text. *Second semester; M., W., F., at* 9. Professor 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. Thesis. At the beginning of the first semester, the student is expected, with the advice of the instructors, to take up some special line of investigation, to be conducted under the direction of those in charge of the department. *Full study throughout the year.* Professors MENDENHALL and TAYLOR, and Dr. INGERSOLL.

10. 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., at* 5. Professor MENDENHALL.

11. Modern Optical Instruments. An advanced laboratory course in light and radiation, designed to follow course 2a and 3a, which are prerequisites. *Second semester; four laboratory hours a week, at hours to be arranged.* Dr. INGERSOLL.

Primarily for Graduates

14. Recent Developments in Electrical Measurements. This course will consist of reports on current papers in the line of electrical measurements, followed by informal discus-

sions. *Two hours a week throughout the year.* Assistant Professor TAYLOR.

15. Elements of Theoretical Physics. This course, which includes the subject of elasticity, the kinetic theory, the potential function, and the conduction of heat, is designed for those who expect to devote but one year to graduate work, and is required of all candidates for the master's degreee offering physics as a major study. *Throughout the year; M., W., F., at* 9. Dr. INGERSOLL.

16. Electricity and Magnetism. The treatment of this course is based on that given in Drude's *Physik des Aethers*, special attention being given to the subjects of electro-magnetism and the theory of electro-magnetic waves. *Throughout the year; M., W., F., at* 12. Professor ————.

17. The Electro-Magnetic Theory of Light. A rigid mathematical treatment of electro-magnetism, electric waves, and their relations to the phenomona of light. *Throughout the year; M., W., F., at* 9. (Omitted in 1907-08.) Professor MENDENHALL.

18. Thermodynamics. The treatment in this course will be substantially the same as that given in Buckingham's *Thermodynamics*, with additional applications to problems of radiation. *Throughout the year; M., W., F., at* 10. Professor MENDENHALL.

19. 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. This work will be encouraged by reserving in the laboratory rooms which are devoted exclusively to research work, and by securing whatever special apparatus may be necessary to the successful carrying out of original investigation. Professor SNOW and Professor MENDENHALL.

20. Mathematical Introduction to the Electron Theory. Dynamics of the electron. Course 16 is a prerequisite, and courses 16 and 20 will be given in alternate years. *Throughout the year; M., W., F., at* 11. (Omitted in 1907-08.) Professor ————.

Engineering Courses

101. General Lectures and Introductory Laboratory Practice. This course is similar in many respects to course 1, but is

more technical in its nature, and is particularly designed to meet the needs of the engineering students, of whom it is required. Lectures, *M., Th., at* 5. Assistant Professor TAYLOR. Two recitations a week by the class in smaller sections. Mr. COLTON, Mr. ELSOM, Mr. TERRY and Mr. WENIGER. Laboratory practice, *twice a week throughout the year.* Mr. MILLER, Mr. BEWICK, Mr. BRIDGMAN, Mr. BURRER, Mr. ELSTON, Mr. RUGGLES, Mr. SUYDAM, Mr. WETZEL, and Mr. WILLIAMS.

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

105. Advanced Electrical Measurements. A laboratory course in the more difficult electrical measurements such as the comparison of self-induction, mutual induction, capacity, etc. Elective for those who have completed course 3 or 104. *Second semester; Tu., F.,* 2 *to* 4. Assistant Professor TAYLOR.

ASTRONOMY

PROFESSOR COMSTOCK AND ASTRONOMER FLINT.

For Undergraduates

1. General Astronomy. A rapid survey of the fundamental concepts of astronomy. Given as a lecture course supplemented by quizzes and examination upon an assigned text. *Throughout the year; Tu., Th., at* 12. Professor COMSTOCK.

2. Exercises in General Astronomy. Designed as a supplement to course 1 and open only to students who have completed, or are pursuing that course. A direct study of the sky through simple observations made independently by the student, but discussed in the class room. *Throughout the year; Th., at* 7:30 P. M., at the Washburn Observatory. Astronomer FLINT.

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., at* 12. Professor COMSTOCK.

14. Practical Astronomy. Theory and use of the sextant, theodolite, transit, and equatorial. *Second semester; M., Tu., W., Th.,* 2 *to* 4. Professor COMSTOCK.

16. Orbital Motion. The differential equations of undisturbed motion and their integrals. Computation of ephemerides. Orbits of double stars and comets. *Throughout the year; conference M., at* 11, *with two or four hours of laboratory work a week.* Professor COMSTOCK.

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. Professor COMSTOCK.

22. The Method of Least Squares. The theory with application to numerical computations. *Throughout the year; conference F. at* 11, *with two or four hours laboratory work a week.* Professor COMSTOCK.

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.* Eleven volumes of these *Publications* have already been issued.

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

GEOLOGY

PROFESSORS FENNEMAN, LEITH; ASSISTANT PROFESSOR BLACKWELDER; MR. HOTCHKISS, AND MR. MARTIN.

For students who wish to take a general educational course in geology, no definite prerequisites are specified. It is, however, desirable that physics and chemistry be taken first. Students who have not had these sciences in college are advised to begin geology with course 4 (Physical Geography). They will not be allowed to enter course 1, except by special arrangement with the professors in charge. All who have had physical geography in the University are allowed to take General Geology without other prerequisites. Physics and chemistry are required of all who make geology a major study. It is advised that they be taken before General Geology, but it is allowable to take at least one of them during the same year. Mineralogy also should be taken as early as possible.

Courses 8 to 22 are advanced courses, adapted for graduate students, or for students who have had at least one full year of geology and mineralogy.

Primarily for Undergraduates

1. General Geology. This course aims to give a clear understanding of the forces which are now modifying the earth's crust and which have brought it to its present condition. This involves an elementary survey of dynamic, structural, physiographic, and historical geology, and of minerals, rocks, and fossils, to show the student the nature of the field covered by geological study. Excursions are made to points in the vicinity where geologic processes and forms are well illustrated. *Five-fifths, first semester, at* 12. Professors BLACKWELDER and LEITH.
2. Applied Geology. This includes economic geology, principles of map interpretation, and field geology. Prerequisite, course 1. *Five-fifths, second semester.* The work is divided as follows: (a) Elementary survey in economic geology. *First six weeks of second semester; M., W., F., at* 12. Professor LEITH. (b) Principles of map interpretation. Laboratory study of geologic maps, involving the interpretation of structure and geologic history of the areas represented.

First six weeks of second semester; Tu., and Th., at hour to be arranged. Mr. BLACKWELDER. (c) Field Geology. The study and mapping of selected areas adjacent to Madison. Involves preparation of complete topographic and geologic maps. The course includes a three-day trip to the Baraboo Ranges and the Dells of the Wisconsin river. *Twelve hours a week for the last twelve weeks of the second semester.* Professors FENNEMAN, LEITH, and BLACKWELDER.

4. Physical Geography. This course covers in a more technical way the customary field of physical geography, assuming that the student is familiar with the subject as studied in high schools. Assigned readings are supplemented by lectures, laboratory work, and excursions. *First semester; M., W., F.*, 10. Professor FENNEMAN.

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. *First semester; M., W., and F., at* 10. Mr. MARTIN.

5. Physiography of the United States. Its natural subdivisions on the basis of topography and geologic history. The topography, soil, climate, mineral, and other resources of each division are treated in their physical relations and as conditions affecting habitation. Open to those who have had the equivalent of course 4. *Second semester; M., W., F., at* 10. Professor FENNEMAN.

5a. Geography of Europe. The geologic structure, topography, physiographic history, climate and natural resources of the several countries of Europe; influence of geographic conditions on manner of life, location of cities and historic events; comparisons where possible with similar features and historic developments in North America. Open to those who have had the equivalent of course 4. *Three-fifths credit. Second semester.* Mr. MARTIN.

6. General Course in Mineralogy. Prerequisite, a general course in chemistry. Trigonometry should be taken if possible. The course is concluded by a brief treatment of the characteristics of rocks and their field classification. The course begins with an elementary study of chrystallography, after which descriptive and determinative mineralogy are taken

up and continued through the remainder of the year. *Throughout the year; M., Tu., W., Th., F., at* 11. Mr. COREY.

7. Short Course in Mineralogy. This course is an elective designed for engineering students who have not time to take course 6. Particular attention is given to the common, economically important minerals. *Hours to be arranged. Three times a week.* Mr. COREY.

For Undergraduates and Graduates

8. Optical Mineralogy. Lectures, quizzes, and laboratory work with the polarizing microscope. A prerequisite to petrology. *First semester; M., W., F.,* 8 *to* 10. Mr. HOTCHKISS.
9. Field Petrology. The characteristics of rocks and their classification as adapted to field work. The course is taken in connection with courses 6 and 10 by all students who pursue special work in geology. *Second semester; Tu., Th., at* 9 *to* 11. Mr. HOTCHKISS and Mr. COREY.
10. Microscopic Petrology. The study of rocks as mineral aggregates with the aid of the petrographical microscope. Course 8 is a prerequisite to this course. *Second semester; M., W., F.,* 8 *to* 10. Mr. HOTCHKISS.
11. Economic Geology. Emphasis is placed on the occurrence, origin, and development of metallic minerals, involving a summary of the principles of metamorphism and ore deposits given in course 15. Excursions are taken to iron, copper, lead and zinc districts accessible from Madison. The course includes also a study of water, building materials (of mineral origin), soils, coal, petroleum, natural gas, and minor non-metallic mineral products. Illustrations of most of the subjects are found within the field accessible to the class. Chemistry 1, Mineralogy 6, and Geology 1 and 2 are prerequisites for this course. *Throughout the year; M., W., F., at* 4. Given in alternate years with course 15. Professor LEITH.
12. Historical Geology. A detailed study of the geologic history of the earth with special reference to the North American continent. The geology of foreign countries will be briefly sketched for the sake of comparison. For their bearing on the development of life during the past geologic ages, groups of typical fossils will be studied in connection with

the respective periods which they represent. Prerequisites, courses 1 and 2. *First semester; M., Tu., W., Th., F., at* 10. Mr. BLACKWELDER.

13. Areal Physiography. An advanced course on selected areas from North America; their physiographic histories, natural boundaries, classification, subdivision and influence on habitation; critical studies of processes involved. Lectures, reading, and map studies. *Three hours a week.* Professor FENNEMAN.

13a. Soil Physiography. A geologic study of conditions of habitation, involving chiefly a study of soils as influenced by underlying rocks, topography and climate. The possibilities of reclaiming additional farm lands are illustrated by a study of the swamps, arid regions and other uncultivated lands of the United States. *Three hours a week.* Professor FENNEMAN.

Primarily for Graduates

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. For this course there is accessible an unequalled collection of specimens and slides illustrating structural features belonging to the pre-Cambrian and Metamorphic Division of the U. S. Geological Survey. *Lectures and laboratory work. First semester; Tu., Th., at* 4. Professor LEITH.

15. Metamorphism. The course is based largely on the survey monograph on this subject by President Van Hise. *Lectures and laboratory work. Throughout the year; M., W., F., at* 4. Alternates with course 11. Professor LEITH.

16. Metamorphic Rocks. A laboratory course. With special reference to description and classification under the principles of metamorphism of courses 11 and 15. *Throughout the year; Tu., W.,* 2 *to* 4. Professor LEITH.

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; Tu., Th., at* 4. Professor LEITH.

18. Lake Superior Geology. A course offered because of the scientific and commercial importance of the Lake Superior region, and the intimate relations of this department to its development. The U. S. Geological Survey Monographs on the Lake Superior region are used as texts, and the original specimens, slides, and charts described in the monographs are at the disposal of the students. At the close of the course in the spring, an excursion is made to points of geologic and economic interest in the Lake Superior country. Given in alternate years with course 17. *Second semester; Tu., Th., at* 4. Professor LEITH.

19. Advanced Petrology. Prerequisite to this course are courses 8, 9, and 10. Arranged to suit the needs of advanced students, and different subjects are considered from year to year. *Three-fifths or full credit as arranged.* Mr. HOTCHKISS.

20. Advanced Crystallography. Mineralogy 6 is a prerequisite. *Three-fifths or full credit as arranged.* Mr. HOTCHKISS.

21. Systematic Paleontology (Invertebrates). Study of the invertebrate groups which are important as fossils, with special reference to the life of the Paleozoic era. One lecture a week, supplemented by a laboratory study of specimens. Designed to follow course 12. *Second semester; three-fifths.* Mr. BLACKWELDER.

22. Research Work. Offered by the members of the department in continuation of their respective courses. President Van Hise will assist in the direction of this work. 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. *F., at* 5.

METEOROLOGY

MR. BARTLETT OF THE U. S. WEATHER BUREAU.

For Undergraduates and Graduates

1. Meteorology. The properties and phenomena of the earth's atmosphere, including barometric pressure, temperature,

precipitation, fog, dew, frost, clouds, the general circulation of the atmosphere, and general and local storms. Cold waves. The study of the weather map. Weather forecasting. Meteorological observations. Laboratory work with a complete set of meteorological instruments, in taking, recording and summarizing weather observations. *First semester; elective, two or three-fifths course.*

2. General Climatology. The climate elements. Solar or mathematical climate. Physical climate, including that of continents, oceans and mountain regions. Snow-line and glaciers. Mountain and valley winds, foehn or chinook, sirocco, bora and mistral. Mountains as climate barriers. Geological and secular changes of climate. Periodic variations in climate. Relations between climates and crops.

The Climate of the United States. Lectures on general climatic features. Comparison of climates of different sections. The climate of Wisconsin. Laboratory work in deriving, tabulating, computing and charting climatic data and in studying the peculiarities of selected sections. *Second semester; elective, two or three-fifths course.*

BIOLOGY

THE BIOLOGICAL DEPARTMENTS

Study in the biological sciences is conducted in the independent, though coordinated departments of Zoology, Botany, Anatomy, Physiology, and Bacteriology and Hygiene. The purpose of these departments is to offer the fullest possible facilities for the study of biological problems. In the department of Botany the structure, physiology, classification, and pathology of plants, and the fundamental problems of cell structure and functions are studied, as well as the direct application of the science to pharmacy and agriculture. In the department of Bacteriology microorganisms are first studied from the general biological point of view, and, in the advanced courses, attention is devoted to the applications of bacteriology, especially to medicine, sanitation, and agriculture. In the department of Zoology the broader problems of animal life are considered, as well as the special anatomy, physiology, and life history of animals. In the department of Anatomy the development, and the gross and microscopic struc-

ture of the lower vertebrates and man are taken up, both in their more general scientific aspects, and in reference to the special needs of students preparing for practical medicine. In the physiological department (which was opened for work in September, 1906) physiology and physiological chemistry will be pursued from a similar point of view.

In these various departments ample facilities are offered both to those who desire some knowledge of biology as a part of a liberal education, and to those who wish to prepare themselves for teaching, for the study of practical medicine, or for biological investigation.

The departments of Botany and Zoology offer in the course in general biology (Biology 1) opportunity for the study of the broader features of the structure and life history of plants and animals. The departments of Anatomy and Physiology will offer next year a course in human anatomy and physiology, intended especially for those who wish a general knowledge of the subjects, or who expect to prepare themselves to teach physiology in the high schools. In the department of Bacteriology a laboratory course is offered in general bacteriology, and a briefer course in communicable diseases and hygiene.

For higher work in the departments mentioned above the course in general biology (Biology 1) is a prerequisite. Each department offers a series of graded courses so arranged as to meet the needs of advanced students in various lines. Ample opportunity for research is offered those capable of undertaking original investigation. This work is encouraged by the Biological Club in which all the departments participate, as well as by special seminaries held by the various departments.

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. The facilities of the Wisconsin Geological and Natural History Survey are also available at all times. The libraries of the University and the Wisconsin Academy of Sciences afford exceptional advantages in the way of literature. The number of sets of important journals has been greatly increased within recent years, so that at present most of the important biological journals are being taken.

Primarily for Undergraduates

1. General Biology. Introductory to botany, zoology, and anatomy, and required as a preliminary to all advanced work in these departments. *Two recitations or lectures and four laboratory periods a week. Lectures M., and W., at* 3. Professor HARPER and Assistant Professor HOLMES.

   For laboratory work the class is divided into sections, each meeting for two hours daily. Associate Professor MARSHALL, Assistant Professor HOLMES, Assistant Professor ALLEN. Mr. WAGNER, Mr. MARQUETTE, Mr. VOORHIES, Mr. REED, Mr. CLAWSON, and Mr. LUTMAN. Quiz divisions are required to meet once a week.

   The first semester is devoted to a study of the general principles of biology as illustrated by plants. The second semester is devoted to zoology. Students can enter the course in either semester.

ZOOLOGY

PROFESSOR BIRGE, ASSOCIATE PROFESSOR MARSHALL, ASSISTANT PROFESSOR HOLMES; MR. CLAWSON, MR. VOORHIES, AND MR. WAGNER.

The courses in Zoology are designed to give the student a thorough acquaintance with the facts of the science and the fundamental problems of biology, so that he may be well equipped either for teaching or investigation. The department possesses a good collection of animals, both for morphological and systematic work. It is exceptionally well provided with sets illustrating life histories, mimicry, and seasonal and sexual dimorphism. There are numerous sets of models by Ziegler and others illustrating the development of animals and a large collection of Blatschka models of invertebrates. There is also a good and rapidly increasing collection of the fauna of the State. The laboratories are well supplied with apparatus, and the facilities of the Wisconsin Geological and Natural History Survey are available at all times. The preparation for, and encouragement of, research receive especial attention, and ample facilities are afforded the student who wishes to take up any line of investigation.

A Journal Club meets for the discussion of recent zoological literature.

For Undergraduates and Graduates

2a. Invertebrate Zoology. A discussion of the structure, development, classification, instincts, and life histories of invertebrate animals. Occasional field excursions will be made, and especial attention will be paid to the local fauna. Invertebrate zoology is a year's course, but it is so divided that the two parts come in the first semester of alternate years. Either half of the course, however, may be taken independently of the other. This course which is devoted to the lower invertebrates, the Protozoa, Coelenterata, Vermes, Mollusca, and some smaller groups will be given in 1906-07. *First semester. Lectures M., W., at* 10. *Three laboratory periods a week.* Assistant Professor HOLMES.

2b. A continuation of course 2a devoted to the higher invertebrates, the Crustacea, Arachnida, Myriapoda, Insects, Echinodermata, and Tunicata. *First semester. Lectures; M., W., at* 10. *Three laboratory periods a week.* Assistant Professor HOLMES.

4. Vertebrate Zoology. A study of the structure, physiology, habits, classification, and distribution of vertebrates. This course will cover for the vertebrates the same general ground discussed in course 2. It deals with a quite different field from that covered in course 5 in Anatomy and may advantageously be taken in connection with the latter course. *Second semester. Lectures; Tu., Th., at* 8. *Laboratory and field work three periods a week. Five-fifths credit.* Mr. WAGNER.

5. Organic Evolution. A series of lectures on the evidences for and general bearing of the theory of organic evolution. These lectures require no previous biological work, and are open to all students beyond the freshman year. *First semester; Tu., at* 4. Assistant Professor HOLMES. Other lecturers will also take part in this course.

6. Heredity. A discussion of the facts and theories of the nature and method of heredity, and their relation to other problems, biological and sociological. The work will be carried on in part as a lecture course and in part as a proseminary. *First semester; two hours a week, at hours to be arranged.* Mr. WAGNER.

7. Evolution Problems. A critical discussion of the theory of organic evolution, and the general development of evolution-

ary speculation since Darwin. Lectures and reports on assigned topics. Open to advanced students of biology, and others who may be especially qualified to carry on the work. *Second semester; Tu. Th., at* 2. Assistant Professor HOLMES.

9. Entomology. A general course dealing with the anatomy, embryology, classification, and life histories of insects. *Second semester. Lectures, Tu., Th., at* 10. *Three laboratory periods.* Associate Professor MARSHALL.

10. Animal Parasites. The structure and life history of animal parasities, with especial reference to those of man. Lectures and laboratory work. *First semester. Four-fifths credit.* Associate Professor MARSHALL.

11. Elementary Entomology. An elementary course in entomology, on the structure, life, history, and habits of insects and their relation to man and other animals. Open to all students. *Lectures. First semester; Tu., Th., at* 3.

17. Bionomics. It is the aim in this course to consider the habits and activities of animals in relation to their environment. An effort will be made to discuss the present state of our knowledge on the following points: The relation of animals to moisture, heat, and light, the supply of oxygen, and the nature of the substratum; migration; the fauna of the water, its nature, distribution and movements; and the general questions of geographical distribution. This course should be preceded by courses 2 and 4. *One lecture a week at hour to be arranged. Laboratory and field work twice a week. First semester; three-fifths credit.* 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.* Assistant Professor HOLMES.

20. Teachers' Course. 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.* Assistant Professor HOLMES.

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.* Associate Professor MARSHALL.

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.

BOTANY

PROFESSOR HARPER, ASSISTANT PROFESSOR ALLEN; DR. DENNISTON, MR. MARQUETTE, DR. OLIVE, DR. OVERTON; MISS ALLEN, MR. ARZBERGER, MR. LUTMAN, AND MR. REED.

For Undergraduates and Graduates

2. Plant Morphology. Algæ and fungi. Course 1 is a prerequisite to this course. The morphology of types of the principal groups will be studied in the laboratory. The lectures will give an outline of the development of the different series and their classification and will also discuss problems of research in connection with the different groups. *First semester; M., W., F.,* 2 *to* 4; *Tu., Th.,* 2 *to* 3. Lectures, *Tu., Th., at* 3. Professor HARPER and Dr. OLIVE.
3. Plant Morphology. Liverworts, mosses, ferns, equisetum, and lycopods. A continuation of course 2. *Two-fifths study during the second semester; M., Tu.,* 2 *to* 4. Lecture, *Tu., at* 3. Professor HARPER and Dr. OLIVE.
4. Plant Morphology. The flowering plants. A study of the life histories of a few types of flowering plants, including the phenomena of pollination, fertilization, development of organs and tissues, and discussions of morphological homologies and allied developmental problems. *Second semester; W., Th., F.;* 2 *to* 4; *lecture, Th., at* 3. Assistant Professor ALLEN.
5. Vegetable Histology. A systematic study of the tissues of phanerogams and ferns. Use of reagents and stains, section cutting, and mounting. Required of all students in pharmacy. *Three-fifths study, first semester.* Dr. DENNISTON and Mr. LUTMAN.
6. Physiology of the Flowering Plants. A course of lectures and laboratory work on the special physiology of the vascular plants. *Second semester; five-fifths study.* Professor HARPER and Dr. OVERTON.

7. Cytology. General physiology of organisms. Lectures and experimental work on the reproduction, irritability, and nutrition of the cell. Must be preceded by courses 2, 3, and 4, and an ability to read German is desired. *Daily; hours on consultation.* Professor HARPER with Dr. OVERTON, *first semester*, and Mr. MARQUETTE, *second semester.*
8. Mycology. Special work on the morphology and classification of the fungi is offered to advanced or graduate students. *Hours on consultation.* Professor HARPER.
9. Plant Pathology. Lectures and laboratory work on the diseases of plants. Especial attention is given to the methods of infection, effect on the host plant, etc., of the fungi which cause diseases of garden crops, cereal grains, etc. *Hours on consultation.* Professor HARPER and Mr. REED.
10. Diseases of Trees. A special course of lectures and laboratory work on the diseases of economically important trees, and the causes of decay in timber used for building and other purposes. The lectures may be taken without the laboratory work. *Two-fifths study, second semester. Hours on consultation.* Assistant Professor ALLEN.
11. Bryology. Special work on the morphology and classification of the bryophytes is offered to advanced or graduate students. This course must be preceded by courses 1 to 4, or their equivalent. *Hours on consultation.* Assistant Professor ALLEN.
12. Dendrology. A study of the structure and characteristics of forest trees. Lectures, laboratory, and field work. Open to those who have had the equivalent of one semester's work in general botany. *Two-fifths study; second semester.* Dr. DENNISTON.
13. Botanical Methods. Practice will be given in methods of preparing plant material and of growing various algæ and fungi for use in the class room. Opportunity will also be given for collection and preserving material for laboratory courses. Open to students who have had courses 1 to 4. *Two-fifths study; second semester.* Professor HARPER and Mr. MARQUETTE.
14. Hybridization, Parthenogenesis, and special problems in the fertilization of the angiosperms. The course deals with some of the more fundamental principles of plant breeding. *First semester; two-fifths study.* Dr. OVERTON.

15. Botanical Seminary. For the study of special subjects in general physiology, and for the presentation of the results of investigation. Professor HARPER.

16. Research Work. Students whose preparation is adequate may on consultation be assigned special subjects of investigation. *Daily.* Professor HARPER.

17. Facts and Theories of Heredity. A critical discussion of the more significant theories of heredity in the light of the results of recent experimental and cytological investigations. Course 1 or its equivalent is a prerequisite. *Second semester; two lectures a week.* Assistant Professor ALLEN.

18. Phycology. Special work on the morphology and classification of fresh-water and marine algæ is offered to advanced or graduate students. This course must be preceded by courses 1 to 4, or their equivalent. *Hours on consultation.* Assistant Professor ALLEN.

19. New and less known Fungi. A detailed account of the morphology and development of some of the less known fungi, together with a discussion of the unsolved problems concerning them. *Second semester; two lectures a week.* Dr. OLIVE.

20. Morphology and Classification of the Flowering Plants. An elementary course designed primarily for pharmacy students, but open to others who desire to begin the study of botany. 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; *second semester.* Dr. OLIVE and Mr. REED.

21. 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-fifths study; second semester.* Dr. DENNISTON.

22. 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. Text-book, Culbreth's *Materia Medica. Twice a week; throughout the senior year.* Dr. DENNISTON.

23. 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. *Three-fifths study during the first semester of the senior year.* Dr. DENNISTON.

24. Pharmacognosy. An abridgement 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. No drug collection is required and no microscopic study is expected. Two lectures and two hours' laboratory work per week. *Three fifths during the first semester.* Dr. DENNISTON.
25. The Collection and Commerce of Crude Drugs. Laboratory and field work supplemented by lectures and recitations. *One-fifth during the first semester of the junior year.* Dr. DENNISTON.
26. Research Work. Anatomy or the taxonomy of seed-plants and ferns. Special subjects for original investigation will be assigned to advanced or thesis students. Dr. DENNISTON.

ANATOMY

PROFESSOR BARDEEN, ASSOCIATE PROFESSOR MILLER, AND DR. ALLEN.

A group of courses intended to offer a comprehensive view of the gross and microscopic anatomy and the embryology of vertebrates with special reference to man, is given in this department. In addition, opportunities are afforded for advanced work and research in anatomy. The laboratory is thoroughly equipped with apparatus, models, books, and materials for advanced as well as elementary work.

For those prepared to carry on advanced research special laboratory facilities are provided.

A Journal Club meets bi-weekly for the discussion of important contributions to anatomical science.

Primarily for Undergraduates

2. Elements of Human Anatomy. Lectures and quizzes illustrated by models and special preparations showing the main features of human structure. This course, given in conjunction with course 1, in physiology, is intended primarily for those who wish a general, rather than a detailed, knowledge of human structure, and for those intending to

teach elementary human physiology. It is open to all students except freshmen. *First semester, until the Thanksgiving recess; M., W., F., at* 11. Professor BARDEEN.

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. Only those who have had a training equivalent to that given in Biology 1 are admitted to this course. *Throughout the year; M., W., F.,* 2 *to* 4. The work of either or both semesters may be taken. Dr. 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 in the following order: the blood and blood-forming organs, the organs of circulation, digestion, and respiration, the genito-urinary organs, the skin and its appendages. Open only to those who have taken or are taking course 5 or its equivalent. *First semester; Tu., Th., S.,* 9 *to* 12. Four unit-hours. Associate Professor MILLER.

15. Vertebrate Embryology. The development of the frog, chick, and pig are studied by means of dissection and the use of microscopic preparations. Human embryology is studied from sections, special preparations, and models. Open only to those who have taken one semester of course 5 or its equivalent. *Second semester; M., W., F.,* 11 *to* 1. Professor BARDEEN.

17. Problems of Vertebrate Embryology. This course involves a study of: (a) The development, structure, and physiological relations of the sex-cells; (b) Early stages in the development of the embryo under normal and experimental conditions. Current theories of inheritance and regeneration will be discussed. *Second semester; M., W., F.,* 9 *to* 11. Dr. ALLEN.

21. Human Anatomy. In this course a thorough training is offered in the dissection of the human body, and in descriptive human anatomy. The course is open only to those who have had course 5 or its equivalent. *M., T., W., Th., F.,* 2 *to* 5. *Throughout the year. Six unit-hours per semester.* Professor BARDEEN.

22. Topographical Anatomy. A study of frozen sections and special preparations. *Second semester; hours to be arranged.* Professor MILLER.

23. Special Human Anatomy. Those qualified to do independent work may make arrangements for the study of human anatomy at other periods than those covered by course 21.

26. Neurology. This course consists of dissections of the sheep's brain and 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 5, 10, and 15 or their equivalents. *Second semester; Tu., Th., S.,* 9 *to* 11. Associate Professor 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 the various members of the staff.

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.

40. Independent Investigation. The department will welcome independent investigators who wish to make use of its facilities for conducting research in anatomy.

PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY

PROFESSOR ERLANGER, ASSISTANT PROFESSOR BRADLEY, AND DR. BLACKMAN.

Primarily for Undergraduates

1. Elementary Physiology. A course similar in scope to anatomy 2, by which it must be immediately preceded. *Second half of first semester; M., W., F., at* 11. Professor ERLANGER.

For Undergraduates and Graduates

The following courses are designed especially for students intending to study medicine or to teach the biological sciences, and are open only to those who have had a previous training in general and organic chemistry (courses 1 and 20), physics (course 1), general biology (course 1), comparative anatomy, histology, and neurology, (anatomy 5, 10, and 26).

4. Physiological Chemistry. (a) Lectures. These will consist of a brief summary of the entire province of physiological chemistry. (b) Laboratory course. This will include the chemistry of various substances, such as proteids, which are usually not familiar to the student of pure chemistry, a chemical study of most of the tissues and fluids of the body, and a study of those physiological-chemical processes that can be closely imitated outside the body, special emphasis being laid on such enzymic processes as salivary, pancreatic, and gastric digestions. The course also includes a quantitative analysis of urine (normal and pathological), milk, gastric juice, stomach washings, and foods, and an examination of the faeces with especial reference to putrifactive processes. (c) Conferences are held for the discussion of the laboratory work, and for the consideration of the progress and needs of the students. *Second semester until April* 30; *M., Tu., W., Th., F.,* 2 *to* 5. *Five unit-hours.* Assistant Professor BRADLEY.

5. Physiology. The following subjects are considered: Muscle and nerve, central nervous system, special senses, blood, circulation, respiration, secretion, digestion, and nutrition. (a) Lectures. (1) Preliminary course. *May* 1 *to end of the year. M., Tu., W., Th., F., at* 12. *Two unit-hours.* (2) Continued course. *First semester; M., Tu., W., Th., F., at* 9. Five unit-hours. (b) Laboratory work. The preliminary course of lectures must precede, and the continued course of lectures be taken in conjunction with or precede the laboratory work. *First semester until the Christmas recess; Tu., W.,* 10 *to* 1. *Two unit-hours.* Professor ERLANGER and Dr. BLACKMAN.

Primarily for Graduates

8. Advanced Laboratory Course in Physiology. This course is designed primarily for teachers of animal physiology, and

consists mainly of experiments demonstrated in course 5. The time or amount of work is not limited, except that assistance must be arranged for by definite engagements. The instruction is given individually, and may involve undertaking a definite investigation. Professor ERLANGER.

10. Advanced Laboratory Course in Physiological Chemistry. This course corresponds to course 8.

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. *One hour a week throughout the year.*

BACTERIOLOGY AND HYGIENE

PROFESSOR RUSSELL, ASSISTANT PROFESSORS FROST, HASTINGS; DR. FULLER, MR. HOFFMANN, AND MR. WAYSON.

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 (course 2), Sanitary (course 8), Dairy (course 16), Agricultural (course 17), Home Economics (course 9), Bacteriology. Course 1 followed by courses 2, 9, 16, or 17, are prerequisites for major work in bacteriology.

Primarily for Undergraduates

1. General Bacteriology. A general survey of the entire field of bacteriology from the biological point of view. The course is a prerequisite to specialization in applied lines, as Medical, Sanitary, or Agricultural Bacteriology. Required of juniors in the College of Agriculture, but open to all properly prepared students. Lectures, *M., W., F., at* 11; Laboratory work, 11 *to* 1 *and* 2 *to* 4. *First semester.* Professor RUSSELL, Assistant Professor FROST, and Mr. WAYSON.

2. Medical Bacteriology. This course, which is especially designed for pre-medical students, considers the bacteria that are especially concerned in the production of disease processes. Course 1 is a prerequisite. Lectures, *M., W., F., at* 11, and laboratory work. *Second semester.* Assistant Professor FROST and Mr. WAYSON.

7. General Hygiene. A course of lectures dealing with the hygienic aspects of air, water, and food supplies, and the

disposal of sewage. Non-technical in character and open to all students except freshmen. *First semester; one-fifth study.* (Omitted in 1906-07.) Assistant Professor FROST.

6. Communicable Diseases: Their cause and prevention. A course of lectures non-technical in character and open to all students except freshmen. No previous work in science is required. *Second semester. One-fifth credit.* Assistant Professor FROST.

8. Biology of Water Supplies. This course includes a study of the elementary principles and technique of bacteriology, the hygiene of water-borne diseases, the testing of water purification plants, and the important microscopical organisms. Lectures and laboratory work. *Second semester. Three-fifths credit.* Required of juniors in Sanitary Engineering. Dr. FULLER.

9. Bacteriology for Students in Home Economics. Lectures, recitations, and laboratory work. The bacteria will be studied in their relation to the home and its environment. The course includes work on the various fermentations, and on the sanitary aspects of the subject. Course 1 is a prerequisite. *Three-fifths credit. Second semester.* Assistant Professor FROST.

16. Dairy Bacteriology. Study of bacteria in relation to dairy processes, including the production of milk, butter, and cheese; also action of disease bacteria in milk. Lectures, assigned literature, and laboratory work. *Second semester. Five-fifths credit.* Professor RUSSELL and Assistant Professor HASTINGS.

17. Agricultural Bacteriology. Embraces a consideration of bacteria as applied to agricultural processes, including their relation to soils, bacterial diseases of plant and animal life, and dairying. Lectures and laboratory work . *Second semester. Five-fifths credit.* Professor RUSSELL, Assistant Professor HASTINGS, and Mr. HOFFMAN.

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. Professor RUSSELL and Assistant Professors FROST and HASTINGS.

For Undergraduates and Graduates

4. Topical Work in Bacteriology. Students who have had sufficient preliminary work (course 1 and course 2, 9, 16, or 17 or their equivalent) will be assigned special topics for study. Laboratory work and conferences. Professor RUSSELL and Assistant Professor FROST.

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-fifth credit.* Assistant Professor FROST.

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-fifths or more.* Assistant Professor 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-fifth credit.* Assistant Professor FROST.

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. Professor RUSSELL, Assistant Professor FROST, and Assistant Professor HASTINGS.

18. Bacteriology of Special Dairy Problems. Exceptional opportunities are offered for a combination of laboratory work with the practical problems relating to the production of milk and its manufacture in the dairy. Lectures and laboratory work. *First semester; five-fifths.* Given in the College of Agriculture. Professor RUSSELL and Assistant Professor HASTINGS.

19. Bacteriology of Animal Diseases. Laboratory work, assigned literature, and conferences. *Second semester; three to five-fifths.* Given in the College of Agriculture. Professor RUSSELL and Assistant Professor HASTINGS.

PHARMACY

PROFESSOR KREMERS, ASSISTANT PROFESSOR FISCHER, MR. DU MEZ, AND MISS GAGE.

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, W., F., at* 11; *one laboratory period.* Miss GAGE.
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., at* 11; *three laboratory periods.* Assistant Professor FISCHER and Mr. DU MEZ.
3. Prescription Practice. The study of the prescription; practice in the compounding of physicians' prescriptions; also the study of physical, chemical, and therapeutical incompatibilities. *Second semester; lectures and recitations, Tu., Th., at* 11; *two laboratory periods.* Assistant Professor FISCHER and Mr. DU MEZ.

10. The Economic Function of the State. This course consists of a series of weekly lectures, historical and critical, on the state in its relation to industry, trade, and the professions, with special reference to pharmacy. Given in alternate years.
11. Law Applied to Pharmacy. A course of lectures treating of the validity and construction of laws especially restraining the practice of pharmacy; of the liability of pharmacists, both criminal and civil; for their own violation of laws and that of their agents; also for their own negligence and that of their agents. Given in alternate years.
12. State Boards of Pharmacy. The development of state boards of pharmacy in the United States and their legal functions, with special reference to their duties as examining bodies.
13. The History of Pharmacy. *Second semester; every other Wednesday at* 4. Professor KREMERS.
14. Pharmacopoeias and their Revision, with special reference to the U. S. Pharmacopoeia. *Second semester; every other Wednesday at* 4. (Given in 1906-07.) Professor KREMERS.

HOME ECONOMICS

PROFESSOR HUNT AND MISS HUNTINGTON.

Primarily for Undergraduates

1. House Sanitation. The site, surroundings, and construction of a dwelling house considered with reference to health. This course is designed for all undergraduates except those specializing in Home Economics, who are advised to take course 6. *Three-fifths study. First semester; Tu., Th., at* 11 *and one hour to be arranged.* Professor HUNT.
3. Food Materials. Lectures upon the composition and nutritive value of foods, and the processes involved in their manufacture and preparation. Laboratory work includes cooking, experiments to show the composition of food, and household tests for adulteration of food. Prerequisite: General Chemistry. *Five-fifths credit. M., W., at* 2. *Laboratory periods; M., W.,* 3 *to* 5; *F.,* 2 *to* 4. Miss HUNTINGTON.
4. Food Materials. A continuation of course 4, including the calculation of dietaries, a study of dietetics, and practice in the preparation of meals of given food value. *Second semester; M., W., F.,* 3 *to* 5. Professor HUNT.
5. Household Economy. A study of the materials used in the house, such as woods, metals, and fabrics, and of the organization of the household, and of the details of house management. *Two-fifths credit. Second semester; Tu., Th., at* 11. *Laboratory period; Tu.,* 8 *to* 10 *or* 2 *to* 4. Miss HUNTINGTON.
6. Advanced Course in House Sanitation. Designed for students specializing in Home Economics. Prerequisites: chemistry and bacteriology. *First semester; M., W., F., at* 9. Professor HUNT.

   Course 6 may be substituted for course 1, but credit will be given for only one of the two courses.
7. Adulterations of Food Stuff. Prerequisites: General Analytical and Organic Chemistry. *First semester; three hours a week.* Professor FISCHER.

   Unusual facilities are offered to students in this course. The work is done in the laboratory of the Wisconsin State Food and Dairy Commissioner, to which large amounts of material are sent for examination.

8. Microscopical Examination of Food Products and Fibers. The histology of plant products used as foods, beverages, and condiments, with special reference to the detection of adulterants. A study of the structure and nature of the common textile fibers is also included. *Second semester; two-fifths study.* Dr. DENNISTON.
9. Bacteriology for Students in Home Economics. (See p. 209.) For a description of the department of Home Economics, see p. 233.

MUSIC

PROFESSOR PARKER, MR. BREDIN, AND MR. OWEN.

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.

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

For admission to course 1, no previous knowledge of music is required. Those desiring to take course 2 must be able to read and play simple four-part music. Course 1 will be found useful in strengthening preparation for the courses in harmony and counterpoint. Courses 1 and 2, or their equivalent, are required as a preparation for course 6. Students may take the lectures of the second semester of course 7 without having taken those of the first semester.

Course 9 allows a credit of two-fifths. It is intended primarily for those who expect to teach in the public schools, either in the grades or high school. The course is open, however, to all students of the University except freshmen. No previous knowledge of music is required for entrance to this course. The work of the second semester is open without examination to those who have completed the work of the first semester and to Normal school graduates who have finished the course in music in the state Normal schools. Others are admitted only on examination.

Course 10 provides for advanced study in orchestral music, and is open to all who have had sufficient experience in such work to

enable them to pass a satisfactorily examination. Credit is given for the second year of study. Symphonies, classical overtures, and standard concert selections are studied. Advanced vocal and instrumental students are given an opportunity to practice with the orchestra in solos and concertos.

Course 11, Conducting, is open to all students for chorus drill. The subjects considered are: methods of beating time, use of the baoon, organization of a chorus and orchestra, study and interpretation of songs, and practice in conducting. Credit is allowed for the work of the second semester to all above the freshman year.

Course 12, Principles of Music Education, consists of a series of lectures on the principles of education with special references to the work of the supervision of music in the public schools.

A special course in the study of Methods of Teaching for the supervision of music in the public schools is given by Mr. Herman E. Owen.

Students may be admitted to advanced courses on examination.

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

Classes meet in the music lecture room, Assembly Hall.

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

Primarily for Undergraduates

1. Musical Theory and Choral Practice. *Throughout the year; M., W., at* 5. Mr. BREDIN.
2. Elementary Harmony. *Throughout the year; Tu., Th., at* 4. Professor PARKER.
3. Advanced Harmony. *First semester; M., W., F., at* 11, *subject to change.* Professor PARKER.
4. Counterpoint. *Second semester; M., W., F., at* 11. Professor PARKER.
5. Double Counterpoint and Fugue. *Throughout the year; M., W., F., at* 10, *subject to change.* Professor PARKER.
6. Musical Composition. *Twice a week throughout the year; Tu., Th., at* 11, *subject to change.* Professor PARKER.

7. History of Music. Lectures. *Throughout the year; Tu., Th., at* 3. Professor PARKER.
8. Advanced Piano Playing, Singing, Organ, or Violin. Senior and junior years only. Hours and credit to be arranged with the instructor and Director of the School of Music, but not to exceed a total of ten semester hours.
9. Public School Music. *Throughout the year; M., W., at* 4, *subject to change.* Mr. OWEN.
10. Advanced Study in Orchestral Music. *Throughout the year; W., at* 7 P. M. Mr. OWEN.
11. Conducting. *Throughout the year; S. at* 10. Mr. OWEN.
12. Principles of Music Education. Lectures. *S. at* 11. Professor O'SHEA, Associate Professor ELLIOT, Assistant Professor TRESSLER, Dr. DEARBORN, and Mr. OWEN.

THE COURSE IN COMMERCE

STAFF OF INSTRUCTION

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
W. A. SCOTT, Ph. D., Director. Professor of Political Economy.

T. S. ADAMS, Ph. D., Associate Professor of Political Economy.
D. E. BURCHELL, A. M., Professor of Business Administration.
A. L. P. DENNIS, Ph. D., Professor of European History.
N. M. FENNEMAN, Ph. D., Professor of Geology.
C. R. FISH, Ph. D., Assistant Professor of American History.
H. C. HORACK, Ph. B., LL. B., Assistant Professor of Law.
VICTOR LENHER, Ph. D., Associate Professor of Chemistry.
B. H. MEYER, Ph. D., Professor of Political Economy.
P. S. REINSCH, Ph. D., Professor of Political Science.
E. C. L. C. ROEDDER, Ph. D., Assistant Professor of German Philology.
B. W. SNOW, Ph. D., Professor of Physics.
S. E. SPARLING, Ph. D., Assistant Professor of Political Science.
H. C. TAYLOR, Ph. D., Assistant Professor of Political Economy.
FLORENCE E. ALLEN, M. L., Instructor in Mathematics.
W. E. ATWELL, Assistant in Business Administration.

C. D. Cool, A. M., Instructor in Romance Languages.
Elva Cooper, B. A., Assistant in Mathematics.
E. P. R. Duval, B. A., Instructor in Mathematics.
S. W. Gilman, LL. B., Instructor in Business Administration.
J. F. Haussmann, Ph. D., Instructor in German.
R. H. Hess, M. L., Assistant in Political Economy.
M. O. Lorenz, Ph. D., Instructor in Political Economy.
Douglas Macduff, B. A., Assistant in Romance Languages.
L. Martin, B. A., Assistant in Geology.
Otto Patzer, M. L., Instructor in French.
W. H. Price, Ph. D., Instructor in Political Economy.
Eduard Prokosch, Ph. D., Instructor in German.

THE PURPOSE OF THE COURSE

The purpose of this course is to supply facilities for the training of young men who desire to enter business careers, especially in such fields as domestic and foreign commerce and banking or branches of the public service, like the consular, in which knowledge of business is essential. It has been established in the belief that in order to achieve the largest measure of success at the present time, and in order properly to perform his duties to himself and to society, the business man should have not only a college education, but a course of study adapted to his peculiar needs. Justification for this belief may be found in the magnitude, complexity, and rapidly changing character of modern industrial processes, and in the unfitness of the traditional college course properly to equip a young man for the most efficient work in this field. The modern business man needs training of the highest order, combined with a knowledge of the mathematical, physical, and social sciences, and of their applications to commerce and industry, and a thorough command of his mother tongue and of at least one modern foreign language. Fortunately the development of historical, political, economic, and scientific studies in recent times, and improvement in our educational methods, has made possible the construction of a course of study which combines the necessary elements.

It is not the purpose of this course to graduate young men equipped with all the technical knowledge needed for the performance of the manifold processes of industry and commerce. It is well understood that such knowledge must be acquired by actual experience in connection with business institutions. It is

our purpose, however, to give our students such training and such knowledge of the structure and workings of the industrial organism as will enable them to learn the technique of any concern in much less time than would otherwise be required, and to attain a degree of industrial and social efficiency which is impossible for the average man who goes into business without such preliminary 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 p. 63.)

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

I. STUDIES REQUIRED OF ALL

These occupy nearly the whole of the student's time in the freshman and sophomore years, and about one-half of his time in the junior and senior years.

With two exceptions the studies of the first two years are those which have long been considered as fundamental and necessary in a liberal education, namely: natural science, mathematics, English, foreign languages, history, and economics. The peculiarity of the course in these years consists in the selection made from the numerous studies available under these different heads. In natural science, physical geography and the physiography of the United States have been included because they are basal to economic geography; in mathematics, algebra and its commercial applications have been selected because of their practical utility in various branches of industry and commerce; the course in English is the general training course required of all freshmen in the University; the foreign language courses devote special attention to the acquisition of a speaking and writing command of these languages, though the study of literature is by

no means neglected; the course in history is selected both for its value as a training in the use of the historical method, and because it aids in laying a proper foundation for various other courses; elementary economics and commercial geography are basal to a large number of courses in applied economics offered in the junior and senior years.

The required work of the junior and senior years includes continuation courses in the modern languages, money and banking, transportation, commercial law, and business administration. These are designed to complete the student's survey of the structure and workings of the modern industrial organism, to supplement the specialized studies of his elective group, to increase his breadth of vision, and to train him in the investigation and interpretation of the kinds of facts that he must deal with in after life. The course in business administration serves the additional purpose of testing the student's ability to perform the various duties for which he is being trained; for example, to carry on correspondence in English and the foreign language he is studying, to make the mathematical calculations required in the various business situations placed before him, to use business forms and papers, rate sheets, etc., to devise systems of accounting, and actually to keep the accounts of the various enterprises suggested; in short, to put to actual use the knowledge and the training derived from the courses he has been pursuing.

II. ELECTIVE GROUPS

These occupy from three to five hours per week during the junior and senior years, and furnish opportunity for a more thorough study of the various branches of commerce and industry. The following groups are at present available, and others may be arranged on consultation with the Director:

Banking and Finance

Junior Year: Public Finance, 3; Corporation Economics, 2; Financial Institutions, 3.

Senior Year: Corporation Finance and Securities, 2; The Money Market, 3; Financial History of the United States, 3; Seminary, 2; Thesis, 4.

Transportation

Junior Year: Statistics, 3; Corporation Economics, 2.

Senior Year: Corporation Finance and Securities, 2; Special Problems in Transportation, 2; Thesis, 4.

Manufacturing Industries

Junior Year: Manufacturing Industries, 6; Corporation Economics, 2.

Senior Year: Statistics, 3; Corporation Finance and Securities, 2; Seminary, 4; Thesis, 4.

Agricultural Industries

Junior Year: Statistics, 3; Elements of Agricultural Economics, 2; Historical and Comparative Agriculture, 2.

Senior Year: Agricultural Industries, 4; Soil Physiography, 3; Thesis, 4.

The Consular Service

Junior Year: Colonial Politics, 3; Contemporary International Politics, 3; History of Diplomacy, 4.

Senior Year: International Law, 3; Federal Administration, 3; Consular Service, 2; Thesis, 4.

III. FREE ELECTIVES

From thirty-two to forty semester hours are available for free electives. These may be chosen from any of the courses in the University which the student is fitted to enter, but it is expected that his choice will be guided by the desire to round out and broaden the course he is pursuing.

ARRANGEMENT OF STUDIES

FRESHMAN YEAR

Physical Geography, 3, (first semester); Economic Geography, 3, (second semester); German, French, or Spanish, 4; English, 3; Mathematics, 3; History, 3; Gymnastics and Drill.

SOPHOMORE YEAR

Economic Geography, 3, (first semester); Foreign language (continued), 2, or second language, 4; Chemistry or Physics, 5; Elementary Economics (first semester), Money and Banking, 3, or Transportation, 3, (second semester); Free Electives, 2 to 0; Gymnastics, Drill, and Business Administration.

JUNIOR YEAR

Foreign language (continued), 2, or second language (if not taken in sophomore year), 4; Elective Group, 3; Free Electives, 8 or 10; Business Administration.

SENIOR YEAR

Foreign language (continued), 2; Commercial Law, 3, Elective Group and Thesis, 4 to 6; Free Electives, 4 to 6; Business Administration.

DEPARTMENTS OF INSTRUCTION

Political Economy

For detailed information regarding these courses see p. 117.

1. The Elements of Economic Science. *Repeated each semester; M., W., F., at* 8, 9, *and* 10. Professor COMMONS, Assistant Professor TAYLOR, Dr. LORENZ, Dr. PRICE, Mr. COULTER, and Mr. HESS.
3. Elements of Public Finance. *First semester; M., W., F., at* 9. Assistant Professor ADAMS.
5. The Elements of Money and Banking. *Repeated each semester; M., W., F., at* 9. Professor SCOTT and Mr. HESS.

7a. Economic Geography. A general survey. *Second semester; M., W., F., at* 8 *and* 9. Assistant Professor TAYLOR.

7b. Economic Geography of the United States. *First semester; M., W., F., at* 8. Assistant Professor TAYLOR.

8. Business Administration. *Throughout three years, two hours a week; or two years, three hours a week.* Professor BURCHELL, Mr. GILMAN, and Mr. ATWELL.
9. Commercial Law. Open only to juniors and seniors of suitable preparation. *Throughout the year; three times a week.* Assistant Professor HORACK.
18. Senior Seminaries. For thesis students. Professors SCOTT and BURCHELL, Assistant Professors ADAMS and TAYLOR, and Dr. PRICE.
26. The Elements of Agricultural Economics. *First semester; Tu., Th., at* 12. Assistant Professor TAYLOR.
27. Historical and Comparative Agriculture. *Second semester; Tu., Th., at* 12. Assistant Professor TAYLOR.
28. Agricultural Industries. *Throughout the year; Tu., Th., at* 10. Assistant Professor TAYLOR.
29. Manufacturing Industries. Must be preceded by courses 7a and 7b. Group A: *First semester; M., W., at* 3. Group B: *First semester; Tu., Th., at* 3. Group C: *Repeated each semester; hours to be arranged.* Professor BURCHELL, Mr. GILMAN, and Mr. ATWELL.

30. Elements of Statistics. Two lectures and two hours laboratory work a week, for which a credit of three hours is given. *First semester; W., F., at* 12. *Laboratory hours to be arranged.* Assistant Professor ADAMS.

31. Economic Statistics. *Second semester; Tu., Th., at* 12. *Laboratory hours to be arranged.* Assistant Professor ADAMS.

33. Financial History of the United States. *Second semester; M., W., F., at* 8. Professor SCOTT.

34. Corporation Finance and Securities. Lectures and assigned reading. *First semester; Tu., Th., at* 8. Dr. PRICE.

34a. The Money Market. Lectures and practical exercises in the interpretation of money market records and documents. *First semester; Tu., Th., at* 12. *Hour for quiz to be arranged.* Professor SCOTT.

35. Transportation and Communication. *Repeated each semester; M., W., F., at* 9. Professor MEYER and Dr. LORENZ.

36. Special Problems in Transportation. *Second semester; Tu., Th., at* 9. Dr. LORENZ.

37. Corporation Economics. *Second semester; Tu., Th., at* 8. DR. PRICE.

38a. Insurance Economics. *First semester; Tu., Th., at* 11. Dr. PRICE.

38b. Life Insurance. *Second semester; Tu., Th., at* 11. Dr. PRICE.

45. Financial Institutions. Must be preceded by course 5. *First semester; Tu., Th., at* 5; *laboratory period to be arranged.* Professor BURCHELL and Mr. GILMAN.

Political Science

17. Federal Administration. *Second semester; M., W., F., at* 9. Assistant Professor SPARLING.

18. International Law. *First semester; M., W., F., at* 9. Professor REINSCH.

20. Contemporary International Politics. *Second semester; M., W., F., at* 10. In connection with this course a series of public lectures on problems of international politics will be given. Professor REINSCH.

21. Colonial Politics. A study of the principal systems of colonial government. *First semester; M., W., F., at* 10. Professor REINSCH.

23. The Consular Service. *First semester; Tu., Th., at* 9. Assistant Professor SPARLING.

History

For detailed information see p. 109.

4. History of the United States. A general survey, with emphasis on political history. This course, or an equivalent, must precede all advanced courses in American history.

4a. To the Presidency of Jackson. *First semester; M., W., F., at* 11. Assistant Professor FISH.

4b. From the Presidency of Jackson to the present time. *Second semester; M., W., F., at* 11. Assistant Professor FISH.

5. English History. *Throughout the year; Tu., Th., at* 10 *and a third hour in sections of quiz work.* Professor DENNIS and assistants.

15. Diplomatic History of the United States. *Throughout the year; Tu., Th., at* 10. Assistant Professor FISH.

English

For detailed information see p. 165.

1. Freshman English. English prose style. Composition. *Three hours per week throughout the year.*

German

For detailed information see p. 153.

2C. Modern Prose, narrative and dramatic, and one classical drama. *Throughout the year; Tu., W., Th., F., at* 9. Assistant Professor ROEDDER.

3C. Reading, Conversation, and Composition. *Throughout the year; Tu., Th., at* 11. Dr. HAUSSMANN.

4C. A continuation of the work of the preceding year, the texts being chosen chiefly to illustrate German history, political, cultural, and literary. *Tu., Th., at* 9. Dr. HAUSSMANN.

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. *Throughout the year; Tu., Th., at* 11. Dr. PROKOSCH.

French

For detailed information see p. 145.

6C. Elementary Course. *Throughout the year; Tu., W., Th., F., at* 9. Mr. PATZER.

17C. Conversation, Composition, and Reading. *Throughout the year; Tu., Th., at* 11. Mr. PATZER.

29C. Conversation, Commercial Correspondence, and Reading. *Twice a week throughout the year.* Mr. PATZER.

30C. Conversation, Commercial Correspondence, and Reading. A continuation of course 29C. *Twice a week throughout the year.* Mr. PATZER.

Spanish

2EC. Elementary. Giese's *First Spanish Book*, and other easy prose. *Four hours a week throughout the year; in three sections; at* 8 *and* 9. Mr. COOL and Mr. MACDUFF.

6C. Conversation, Composition, and Reading. Special attention is devoted to the vocabulary of everyday life. *Throughout the year; Tu., Th., at* 11. Mr. COOL.

7C. Conversation, Commercial Correspondence, and Reading. Special attention is devoted to the vocabulary of commerce. *Throughout the year; W., F., at* 11. Mr. COOL.

8C. Conversation, Commercial Correspondence, and reading. Continuation of course 7C. *Twice a week throughout the year.* Mr. COOL.

Algebra

1. Algebra. Theory of indices, logarithms, limits, arrangements and groups, and progressions. *First semester; three times a week.* Mr. DUVAL and Miss COOPER.

7. Commercial Algebra. Theory of probabilities, series, and the application of mathematics to insurance and finance. *Second semester; three times a week.* Miss ALLEN, Mr. DUVAL, and Miss COOPER.

Physics

1. General Lectures and Introductory Laboratory Practice. *Lectures; M., Tu., W., Th., at* 12. *One recitation a week at an hour to be arranged. Laboratory practice twice a week.* Professor SNOW and assistants.

Chemistry

7. General Chemistry. Lectures and laboratory work. *Five hours a week throughout the year.* Associate Professor LENHER and assistants.

Geology

For detailed information see p. 191.

4a. Physical Geography. *First semester; M., W., F., at* 10. Mr. MARTIN.

13a. Soil Physiography. *First semester; three hours a week.* Professor FENNEMAN.

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, on p. 275 of the Catalogue, and the studies of the Course in Commerce as follows:

FRESHMAN YEAR

Physical Geography and Economic Geography, 3.

SOPHOMORE YEAR

Economic Geography, 3; Elementary Economics (*second semester)*, 3.

JUNIOR YEAR

Money and Banking (*first semester*) and Transportation (*second semester*), 3; Elective Group, 3.

SENIOR YEAR

Elective Group, 3; Business Administration, 3.

FIFTH YEAR

Business Administration, 3; Commercial Law, 3.

At the end of the fifth year the appropriate engineering degree will be conferred. Students who so desire may, during the senior year, write a thesis in connection with their elective group in Commerce, and receive the degree of B. S., General Engineering Course.

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 LECTURERS

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.

CHARGES AND FEES

All fees are required to be paid strictly in advance at the beginning of each semester before cards are issued entitling the student to admission to classes.

Tuition is free for all students from the State of Wisconsin.

Tuition for non-resident students, per semester	$15 00
Incidental fee for all students, per semester	10 00
Gymnasium fee for all men students, per semester	1 00

Communications regarding this Course should be addressed to W. D. Hiestand, Registrar, or to William A. Scott, Director.

THE COURSE IN PHARMACY

STAFF OF INSTRUCTION

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
E. A. BIRGE, Ph. D., Dean of the College of Letters and Science.
EDWARD KREMERS, Ph. G., Ph. D., Director. Professor of Pharmaceutical Chemistry.

C. E. ALLEN, Ph. D., Assistant Professor of Botany.
W. W. DANIELLS, M. S., Sc. D., Professor of Chemistry.
RICHARD FISCHER, Ph. C., Ph. D., Assistant Professor of the Theory and Practice of Pharmacy.
W. D. FROST, Ph. D., Assistant Professor of Bacteriology.
R. A. HARPER, Ph. D., Professor of Botany.
L. KAHLENBERG, Ph. D., Professor of Physical Chemistry.
VICTOR LENHER, Ph. D., Associate Professor of Chemistry.
B. W. SNOW, Ph. D., Professor of Physics.
R. H. DENNISTON, Ph. G., Ph. D., Instructor in Pharmaceutical Botany and Curator of the Drug Cabinet.
W. F. KOELKER, Ph. D., Instructor in Organic Chemistry.
H. B. NORTH, Ph. G., B. S., Instructor in Chemistry.
E. W. OLIVE, Ph. D., Instructor in Botany.
A. G. DU MEZ, Ph. G., Laboratory Assistant in Pharmacy.
F. M. GAGE, M. S., Assistant in Pharmacy and Plant Chemistry.
B. F. LUTMAN, Assistant in Botany.
G. M. REED, M. A., Assistant in Botany.
R. L. SCHULZ, Assistant in Pharmaceutical Chemistry.
A. F. SIEVERS, Ph. G., Assistant in 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 manu-

facturing establishments, as analytical or sanitary chemists, or as bacteriologists, will find that the graduate work in the Course in Pharmacy, as well as the other departments of the University, offers excellent opportunities for advanced and more specialized study. Special lines of research can also be pursued in various departments by those who desire to work for a higher degree. The attention of advanced students is especially called to the graduate work. (See Index.)

Laboratories

A description of the various general laboratories of the University may be found by reference to the Index.

THE PHARMACEUTICAL LABORATORIES. These laboratories are located in the west wing of the second floor and the east wing of the third floor of the new Chemistry Building. Their equipment is similar to that of the other laboratories in the same building.

Collections

The collections of the University, including the drug cabinet, are described elsewhere. See Index under Collections.

Libraries

For a statement as to general library facilities at the University 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 work 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 physician's 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 degree of *Master of Science* and *Doctor of Philosophy*, are conferred as higher degrees upon candidates who have a baccalaureate degree.

Fees and Expenses

The tuition and laboratory fees and an estimate of expenses for board and lodging are given on previous pages. See Index.

COURSES OF STUDY

Two-Year Course

FIRST YEAR. FIRST SEMESTER

Chemistry 3*. General Chemistry. The laboratory work accompanying this course is especially designed for pharmacy students. Eight-fifths credit. Associate Professor LENHER and Mr. SIEVERS.

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.* Professor HARPER, Professor ALLEN, and assistants.

Botany 25. The Collection and Commerce of Crude Drugs. Laboratory and field work supplemented by lectures and recitations. One-fifth. Dr. DENNISTON.

*The figures refer to the numbers of the courses as given in the statements under Departments of Instruction.

Pharmacy 1. Laboratory Technique. The principles and practice of pharmaceutical operations, such as comminution, expression, decantation, filtration, maceration, percolation, diffusion, dialysis, crystallization and precipitation. Three-fifths. *W., F., at* 11. Miss GAGE.

FIRST YEAR. SECOND SEMESTER

Chemistry 3. General Chemistry continued as a three-fifths study.

Chemistry 10. Qualitative Analysis. First half of semester, daily. Professor DANIELLS and Mr. SIEVERS.

Chemistry 15. Quantitative Analysis. Second half of semester, daily. Professor DANIELLS and Mr. SIEVERS.

Chemistry 20b. Organic Chemistry for Pharmacy students. Two-fifths course. Recitations and laboratory work. Dr. KOELKER and Mr. SIEVERS.

Botany 20. Morphology and Classification of the Flowering Plants. An elementary course designed primarily for students in Pharmacy. The life histories and ecology of seed plants, with a comparative study of the structure 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. Dr. OLIVE and Mr. REED.

Pharmacy 1. Laboratory Technique. Continuation of the work of the first semester. (See above.)

SECOND YEAR. FIRST SEMESTER

Chemistry 6. Advanced Inorganic Chemistry. Lectures and recitations, *Tu., Th., F., at* 10; *laboratory work daily.* Professor KREMERS and Mr. SCHULZ.

Chemistry 40. Plant Chemistry. As a three-fifths study supplementary to pharmacognosy. Recitations, *Mon., at* 10; *two laboratory periods.* Professor KREMERS and Miss GAGE.

Botany 5. Vegetable Histology. A systematic study of the tissues of the phanerogams and ferns. Use of reagents and stains, section cutting and mounting. Dr. DENNISTON and Mr. LUTMAN.

Botany 22. Pharmacognosy. This course presents to the student the main facts of the natural history of drugs, and the plants producing them. *Twice a week throughout the senior year.* Dr. 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., at* 11; *three laboratory periods.* Assistant Professor FISCHER and Mr. DU MEZ.

SECOND YEAR. SECOND SEMESTER

Chemistry 27. Advanced Organic Chemistry. Lectures and recitations, *Tu., Th., F., at* 10; *laboratory work daily.* Professor KREMERS and Mr. SCHULZ.

Chemistry 40. Plant Chemistry. Continued from first semester. Professor KREMERS and Miss GAGE.

Chemistry 45. Alkaloidal Assay. *One-fifth credit.* Assistant Professor FISCHER and Mr. DU MEZ.

Botany 21. 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-fifths credit. Dr. DENNISTON.

Botany 22. Pharmacognosy. Continuation of first semester's work. Dr. DENNISTON.

Pharmacy 3. Prescription Practice. The study of the prescription; practice in the compounding of physicians' prescriptions; also the study of physical, chemical and therapeutical incompatibilities. *Lectures and recitations, Tu., Th., at* 11; *two laboratory periods.* Assistant Professor FISCHER and Mr. DU MEZ.

Four-Year Course

Students who desire to include pharmaceutical studies as a part of their general college education will have to elect the prerequisite studies enumerated below to accomplish this end. Such a course, if to lead to the degree of *Bachelor of Science, Pharmacy Course,* must include courses 1, 2, and 3 in Pharmacy, and course 22 in Botany.

Basal sciences: Chemistry 3, 10, 15, 20b, or their equivalents also 6 and 27. Biology 1, Physics 1. These should be taken during the first and second years.

Advanced sciences: Chemistry 3, 10, 15, 20b, or their equivalents also 6 and 27. Botany 20 or its equivalent, also 5, 21. 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, biology, 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 p. 94.

Additional electives sufficient to make 120 unit hours may be chosen upon consultation with the adviser for Pharmacy students.

THE PRE-MEDICAL COURSE

The facilities for preparation for practical medicine have been constantly increased in the College of Letters and Science. Not only is opportunity given for the study of subjects of which some knowledge is demanded for entrance into leading medical schools, but in addition a thorough training and facilities for research are offered in human anatomy, histology, embryology, neurology, physiology, physiological chemistry, and bacteriology, subjects among the most important of those included in the medical curriculum. Credit is given in the leading medical schools of the country for the studies here pursued. Work equivalent to the entire first year and a large part of the second year of the standard American medical curriculum, is offered. It is intended in the near future to offer the full work of the first two years of this curriculum.

General Requirements

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.

For the requirements for a degree, see Index under Degrees.

Preparation for Medicine

A candidate for the degree of Bachelor of Arts, who desires special preparation for the study of medicine, is advised, first to take courses in general biology and in chemistry, and then to choose his advanced work mainly from the departments of anatomy, physiology, bacteriology, and chemistry, in one of which his major should be taken. A course in psychology will prove of special value to one intending later to specialize in nervous and mental diseases, and the courses in botany and zoology to those desirous of broad biological foundation for medical study. Physics should be taken in preparation for physiology. Latin is important for an understanding of medical terms, German and French are essential to one who desires to keep up with the progress of medicine, and Italian is of great value.

For detailed information regarding the courses of special advantage to the student preparing for practical medicine, see the accounts given of the various departments in the College of Letters and Science, especially those of anatomy, physiology, bacteriology, and hygiene, biology, botany, zoology, chemistry, philosophy, physics, English, French, German, and Latin.

A special bulletin describing the courses preparatory to practical medicine has been prepared. A copy of this, as well as further information regarding the course, may be obtained by applying to the Registrar of the University.

HOME ECONOMICS

STAFF OF INSTRUCTION

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
CAROLINE L. HUNT, A. B., Director, and Professor of Home Economics.
ELLEN A. HUNTINGTON,, A. B., Instructor in Household Economy.

W. W. DANIELLS, M. S., Sc. D., Professor of Chemistry.
JOSEPH ERLANGER, Ph. D., Professor of Physiology.
H. L. RUSSELL, Ph. D., Professor of Bacteriology.
RICHARD FISCHER, Ph. D., Chemist for the Wisconsin State Dairy and Food Commission.

W. D. Frost, Ph. D., Assistant Professor of Bacteriology.
Victor Lenher, Ph. D., Associate Professor of Chemistry.
R. H. Denniston, Ph. D., Instructor in Botany.
W. F. Koelker, Ph. D., Instructor in Organic Chemistry.
Arthur Peabody, University Architect and Special Lecturer in Domestic Architecture.

The department of Home Economics has two purposes. The first is to offer elective courses which shall be available as a part of the general education of all the young women in the College of Letters and Science. For this purpose courses 1, 2, and 3 on page 212 are offered. These courses, having no prerequisite in science, are open to all students. The second purpose is to offer a four-year course to those young women who wish to specialize in Home Economics. This course leads to the degree of Bachelor of Arts, and includes:—

1. The studies required of all regular students in the College of Letters and Science;
2. Prescribed courses in general science;
3. Special courses in Home Economics;
4. Free electives.

The course is outlined below. For a description of the courses in Home Economics, see p. 212.

Requirements for Admission

The requirements for admission to this course are the same as for admission to the other courses in the College of Letters and Science. (See Index.)

OUTLINE OF THE COURSE OF STUDY

The number after a study indicates the number of hours per week.

FIRST YEAR

First semester: English 3; Language 4; Mathematics 3; Chemistry 5; Physical Training 2.

Second semester: Continuation of the first.

SECOND YEAR

First semester: Analytical Chemistry 3; Language 2 or 4; Bacteriology 5; Food Materials 5.

Second semester: Language 2 or 4; Bacteriology for Home Economic Students 3; Analytical Chemistry 3; Food Materials 3.

THIRD YEAR

First semester: Biology or Physics 5; Physiology 3; Organic Chemistry 5; Language 2.

Second semester: Biology or Physics 5; Physiology 2; Language 2; Organic Chemistry 5; Electives 3.

FOURTH YEAR

First semester: Food Adulterations 3; Advanced Course in House Sanitation 3; Language 2; Electives 7.

Second semester: Household Economy 2; House Decoration 1; Microscopical Examinations of Food Products and Foods 2; Electives 10.

Students in Home Economics will take General Chemistry, Biology, Physiology, the first semester of Organic Chemistry, and the first semester of Bacteriology with the other college students. The analytical work in Chemistry, the second semester's work in Organic Chemistry, and the second semester's work in Bacteriology will be adapted to the special needs of the department. In order to give larger opportunity for electives than would otherwise be possible, the student is allowed to choose between Physics and Biology; but unless her preparation in the science not chosen has been exceptionally good she is advised to elect it at some time during her course.

For detailed information concerning this department address Caroline L. Hunt, South Hall, Madison, Wisconsin.

COURSES PREPARATORY TO JOURNALISM

STAFF OF INSTRUCTION

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
WILLARD G. BLEYER, Ph. D., Chairman. Assistant Professor of English.

T. S. ADAMS, Ph. D., Associate Professor of Political Economy.
B. H. BODE, Ph. D., Assistant Professor of Philosophy.
W. B. CAIRNS, Ph. D., Assistant Professor of American Literature.
VICTOR COFFIN, Ph. D., Assistant Professor of European History.
J. R. COMMONS, A. M., Professor of Political Economy.
A. L. P. DENNIS, Ph. D., Professor of European History.

R. E. N. Dodge, M. A., Assistant Professor of English.
R. T. Ely, Ph. D., LL. D., Professor of Political Economy.
C. R. Fish, Ph. D., Assistant Professor of American History.
J. C. Freeman, LL. D., Professor of English Literature.
F. G. Hubbard, Ph. D., Professor of the English Language.
Joseph Jastrow, Ph. D., Professor of Psychology.
Charles McCarthy, Ph. D., Lecturer in Political Science.
E. B. McGilvary, Ph. D., Professor of Philosophy.
D. C. Munro, A. M., Professor of European History.
J. B. Parkinson, A. M., Professor of Constitutional Law.
J. F. A. Pyre, Ph. D., Assistant Professor of English Literature.
P. S. Reinsch, Ph. D., Professor of Political Science.
E. A. Ross, Ph. D., Professor of Sociology.
W. A. Scott, Ph. D., Professor of Political Economy.
G. C. Sellery, Ph. D., Assistant Professor of European History.
F. C. Sharp, Ph. D., Professor of Philosophy.
S. E. Sparling, Ph. D., Assistant Professor of Political Science.
H. C. Taylor, Ph. D., Assistant Professor of Political Economy.
F. J. Turner, Ph. D., Professor of American History.

PURPOSE AND PLAN OF THE COURSES

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 training necessary for the successful pursuit of this profession. The increasing demand by editors of newspapers and periodicals for college graduates, indicates the recognition of the value of a college course as preparation for journalism. It is believed that the value of such a course may be greatly increased by having it include those subjects with which journalistic work is concerned. The purpose in outlining these courses, therefore, is to assist the student to shape his work with a view to obtaining the broadest possible preparation.

The courses included in the list are of three kinds: First, 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; second, those designed to develop the power of expressing his ideas effectively in writing; third, 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, the knowledge of which is essential for journalism of the best type. 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, 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 is given a series of special lectures by practical newspaper men on various phases of journalistic 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 p. 63.)

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, see p. 93.

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 numbers in

parenthesis indicate the number of the course in the department; Arabic figures following the parenthesis indicate the number of hours a week; and the Roman figures the semester in which the course is given.

FRESHMAN YEAR

*Freshman English (1), 3; *Foreign Language, 4; English History (5), 3; Medieval History (1), 3; *Mathematics, 3 or *Science, 5.

SOPHOMORE YEAR

Sophomore Composition (2), 2; General Survey of English Literature (30), 3; History of the United States (4), 3; Elements of Economic Science (1), 3, I; Elements of Money and Banking (5), 3; Elements of Political Science (1), 3, I; Economic Geography of the United States (7b), 3, II; *Foreign Language, 4.

JUNIOR YEAR

Advanced Composition (6), 3; Narrative Composition (19b), 2, II; American Literature (40), 2; Modern History (2), 3; The British Empire Since 1688 (43), 2; Elementary Law (2), 3, I; Government and Politics in the United States (7), 3, II; International Law (16), 3, I; Party Government (22), 3, I; Charities and Corrections (40), 3, I; Labor Problems (9), 3, II; Social Psychology (39), 3, I; Elements of Public Finance (3), 3, I; Problems of Taxation (24), 3, II; History of the South (12), 3; History of New England (13), 2; Psychology (1), 3, I; Ethics (41), 3, II; History of Modern Philosophy (32), 3, II; *Foreign Language, 2.

SENIOR YEAR

Newspaper Writing (19, 19a), 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 (30, 31), 3; Transportation and Communication (35), 3, II; Financial History of the United States (33), 3, I; Industrial Evolution and Its Problems (20), 2, I; Monopolies and Trusts (58); Labor and Industrial History (64), 2, II; Comparative Administration (3), 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; Social and Political Ethics (42), 2, I; Philo-

sophic Thought in Nineteenth Century English Literature (23), 2, II; Abnormal Psychology (7), 2, II; Modern Drama (52), 2; Drama and Shakespeare (36), 3; American Literature (47), 2; *Foreign Language, 2.

DEPARTMENTS OF INSTRUCTION

English

For detailed information regarding these courses see p. 166.

1. Freshman English. English prose style. Composition. *Throughout the year; three hours a week.* Required of all freshmen. Professor HUBBARD and assistants.

2. Sophomore Composition. Elective for students who have finished freshman English. *Throughout the year; Tu., Th., at* 8, 11, *and* 12. Mr. DICKINSON and Miss BERKELEY.

6. Advanced Composition. Elective for juniors and seniors, and for sophomores who have done very good work in course 1. *Throughout the year; Tu., Th., at* 11. *Three-fifths credit.* Assistant Professor DODGE.

19b. Narrative Composition. The study of some representative forms of the story, with exercises in plot-structure, technique, and criticism. Open to seniors, juniors, and to sophomores who have done very good work in English 1. *Second semester; Tu., Th., at* 10. Dr. BEATTY.

19. Newspaper Writing. Practice in newspaper reporting, correspondence, and other details of a reporter's work. Open to students who have had considerable practice in composition. *First semester; Tu., Th., at* 10. Assistant Professor BLEYER.

19a. Newspaper Writing. The course includes practice in editorial work, preparation of special articles, and other forms of journalistic writing. Open to those who have taken English 19, and to others, by special permission. *Second semester; Tu., Th., at* 10. Assistant Professor BLEYER.

30. General Survey of English Literature. The history of English literature from the earliest times to the middle of the Nineteenth Century. *Throughout the year; M., W., F., at* 8, 9, 10, 11. Assistant Professors PYRE, CAIRNS, and BLEYER, and Dr. DICKINSON.

40. American Literature. A general survey of literary writings in America from the earliest times to the present. This

course must be preceded by course 1, and should be preceded or accompanied by course 30. *Throughout the year; Tu., Th., at* 9 *and* 10. Assistant Professor CAIRNS.

36. The Drama. A part of the first semester is devoted to the history of the development of the drama, the remainder of the year to Shakespeare. The course is open to seniors *Throughout the year; M., W., F., at* 11. Professor FREEMAN.

47. Significant Movements in American Literature. The first semester is devoted to the historical study of the origin and development of the short story in America; the second semester to the study of American humor, with especial reference to political satire. Open to those who have completed course 40 or its equivalent. *Throughout the year; Tu., Th., at* 8. Assistant Professor CAIRNS.

52. Modern Drama. A survey of English dramatic literature beginning with the younger contemporaries of Shakespeare and extending to the present time. *Throughout the year; Tu., Th., at* 11. Assistant Professor PYRE.

History

For detailed information regarding these courses see p. 109.

1. Medieval History. A general survey of the history of Europe from the barbarian invasions to the close of the fifteenth century. *Throughout the year; M., W., F., at* 11. Professor MUNRO, Assistant Professor SELLERY, and assistants.

2. Modern European History. A general survey extending from the close of the fifteenth century to the present day. *Throughout the year; M., W., F., at* 8 *and* 12, *and a third hour in sections. First semester,* Assistant Professor SELLERY; *second semester,* Assistant Professor COFFIN.

4. History of the United States. A general survey from the Revolutionary era to the present, with emphasis upon political history. *Throughout the year; M., W., F., at* 11. Assistant Professor FISH.

5. English History. An outline of political and constitutional history will serve as a framework for the study of the economic, social, and intellectual development of the nation. *Throughout the year; Tu., Th., at* 10, *and a third hour in sections for quiz work.* Professor DENNIS and assistants.

11b. The History of The West, 1840 to the present. Particular attention is paid to the conditions of westward imigration and its economic, political, and social aspects. *Throughout the year; M., W., F., at* 12. Professor TURNER.

12. History of the South. Especial attention is given to the economic and social forces involved in the plantation system. *Throughout the year; M., W., F., at* 11. Dr. PHILLIPS.

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 the expansion westward across the United States and Canada. *Second semester; M., W., F., at* 10. (Omitted in 1907-08.) Assistant Professor FISH.

15. Diplomatic History of the United States. A study of the actual negotiations between the United States and other countries and of the problems involved in these negotiations. *Throughout the year; Tu., Th., at* 10. Assistant Professor FISH.

43. The British Empire since 1688. 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. *Throughout the year; Tu., Th., at* 12. (Omitted in 1907-08.) Professor DENNIS.

48. Europe and Asia. A general survey of the historical relations of eastern and western peoples, as a basis for courses in contemporary world politics. *Throughout the year; Tu., Th., at* 3. Professor DENNIS.

Political Science

For detailed information regarding these courses see p. 129.

1. Elements of Political Science. A general survey of the field of political science. *First semester; M., W., F., at* 8. Assistant Professor SPARLING.

2. Elementary Law. The nature and sources of law, and the methods of its application. *First semester; M., W., F., at* 12. Mr. SCOTT.

6. Administrative Problems. *Second semester; Tu., Th., at* 8. Assistant Professor SPARLING.

7. Government and Politics in the United States. A general study of the American system of government. *Second semester; M., W., F., at* 8. Professor REINSCH and assistants.
14. Comparative Administration. A survey of the administrative systems of Europe and the United States. *First semester; Tu., Th., at* 8. Assistant Professor SPARLING.
15. Municipal Government in Europe and the United States. *Second semester; M., W., at* 8. Assistant Professor SPARLING.
18. International Law. *First semester; M., W., F., at* 10. Professor PARKINSON.
20. Oriental Politics and Civilization. *Second semester; M., W., F., at* 10. Professor REINSCH.
22. Party Government. Special attention will be given party organization and methods of legislative bodies. *First semester; M., W., F., at* 10. Professor REINSCH.
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; M., at* 3.
26. The Theory and Practice of Legislation. *Throughout the year; M., W., F., at* 12. Dr. MCCARTHY.

Political Economy

For detailed information regarding these courses see p. 119.

1. The Elements of Economic Science. *Repeated each semester; M., W., F., at* 8, 9, *and* 10. Professor COMMONS, Assistant Professor TAYLOR, and assistants.
2. Elementary Sociology. This course traces the actual evolution in each of the great departments of social life. *One-fifth credit. First semester; M., W., F., at* 10. Professor ROSS.
3. Elements of Public Finance. An introductory study of the general principles of public expenditure, public revenue, public indebtedness, and financial administration. *First semester; M., W., F., at* 9. Associate Professor ADAMS.
5. The Elements of Money and Banking. An introductory course. *Repeated each semester; M., W., F., at* 9. Professor SCOTT.

7a. Economic Geography. A general survey of the history and present status of industry and commerce in the principal

countries of the world excepting the United States. *First semester; M., W., F., at* 8 *and* 9. Assistant Professor TAYLOR.

7b. Economic Geography of the United States. *Second semester; M., W., F., at* 8. Assistant Professor TAYLOR.

20. Industrial Evolution and Its Problems. A general survey of industrial development. *First semester; Tu., Th., at* 10. Professor ELY.

23. Labor Problems. Strikes, trades unions, employers' associations, arbitration, immigration, child labor, etc. *First semester; M., W., F., at* 11. Associate Professor ADAMS.

24. Problems in Taxation. *Second semester; Tu., Th., at* 11. Associate Professor ADAMS.

25. Labor Legislation. A study of the labor law of the United States and foreign countries. *Second semester; M., W., F., at* 10. Associate Professor ADAMS.

31. Economic Statistics. Prices, wages, family budgets, labor, financial statistics. *Second semester; Tu., Th., at* 12. *Laboratory hours to be arranged.* Associate Professor ADAMS.

32. Social Statistics. A study of vital statistics, suicides, crime, pauperism, etc. *Second semester; Tu., Th., at* 10. *Laboratory hours to be arranged.* Associate Professor ADAMS.

34a. The Money Market. Lectures on the methods and movements of the money markets. *First semester; Tu., Th., at* 12. Professor SCOTT.

35. Transportation and Communication. Railways, waterways and the express, telephone, telegraph, and the postoffice services. *Repeated each semester; M., W., F., at* 8. Professor MEYER.

39. Social Psychology. The laws of mob-mind, craze, fad, fashion, conventionality, custom, standard of comfort, spirit of the age, public opinion, etc. *First semester; M., W., F., at* 11. Professor ROSS.

41. Charities and Corrections. *Second semester; M., W., F., at* 9. Professor ROSS.

42. Labor Problems. *First semester; M., W., F., at* 10. Professor COMMONS.

58. Monoplies and Trusts. Professor ELY.

64. Labor and Industrial History. The development of the modern labor movement. *Second semester; M., W., at* 2:30 *to* 4:00. Professor COMMONS.

Philosophy

For detailed information regarding these courses see p. 102.

1. Psychology: Introductory Course. *First semester; M., W., at* 9, *and F., at an hour to be arranged; and Tu., Th., at* 9, *and F., at an hour to be arranged.* Professors JASTROW and SHARP and Assistant Professor BODE.

23. The Philosophic Thought of the Nineteenth Century as Reflected in English Literature. *Second semester; Tu., Th., at* 11. Assistant Professor BODE.

32. History of Modern Philosophy. A study of the development of philosophy from the Renaissance to the present day. *Second semester; M., W., F., at* 11. Professor MCGILVARY.

41. Ethics: Introductory Course. *Second semester; M., W., F., at* 9. Professor SHARP.

42. Social and Political Ethics. Course 41 is not required as a preliminary. *First semester; Tu., Th., at* 12. Professor SHARP.

7. Abnormal Psychology. *Second semester; Tu., Th., at* 10. Professor JASTROW.

THE COLLEGE OF ENGINEERING

FACULTY

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
F. E. TURNEAURE, C. E., Dr. Eng., Dean. Professor of Engineering.

Officers of Instruction in Technical Departments

M. C. BEEBE, B. S., Associate Professor of Electrical Engineering.
STORM BULL, M. E., Professor of Steam Engineering.
C. F. BURGESS, E. E., Professor of Applied Electrochemistry.
C. H. BURNSIDE, M. A., M. S., Assistant Professor of Mechanics.
J. C. DICKERMAN, B. S., Assistant Professor of Chemical Engineering.
*D. C. JACKSON, C. E., Professor of Electrical Engineering.
J. G. D. MACK, M. E., Professor of Machine Design.
E. R. MAURER, B. C. E., Professor of Mechanics.
D. W. MEAD, C. E., Professor of Hydraulic and Sanitary Engineering.
H. F. MOORE, M. M. E., Assistant Professor of Mechanics.
W. D. PENCE, C. E., Professor of Railway Engineering.
J. D. PHILLIPS, B. S., Professor of Drawing.
A. W. RICHTER, M. M. E., Professor of Experimental Engineering.
J. W. SHUSTER, B. S., Assistant Professor of Electrical Engineering.
L. S. SMITH, C. E., Associate Professor of Topographic and Geodetic Engineering.
J. C. STEEN, Superintendent of Machine Shops.
H. J. B. THORKELSON, M. E., Assistant Professor of Steam Engineering.
J. T. ATWOOD, B. S., Instructor in Experimental Engineering.
H. S. ELLIOTT, B. S., Instructor in Electrical Engineering.
D. E. FOSTER, B. S., Instructor in Mechanical Drawing and Descriptive Geometry.
LOUIS FUSSELL, M. S., Assistant in Electrical Engineering.
L. F. HARZA, B. S., Instructor in Hydraulic Engineering.

*Resigned at the close of the first semester, 1906-07.

F. W. Huels, B. S., Instructor in Experimental Engineering.
R. M. Keown, B. S., Instructor in Machine Design.
W. S. Kinne, B. S., Instructor in Structural Engineering.
O. L. Kowalke, B. S., Assistant in Chemical Engineering.
Henry Kratsch, Machinist and Instructor in Mechanical Practice.
E. A. Loew, B. S., Instructor in Electrical Engineering.
W. G. Lottes, Instructor in Forge Practice.
F. M. McCullough, B. S., Instructor in Mechanics.
W. H. McIntosh, Instructor in Wood Mechanics.
A. V. Millar, M. S., Instructor in Descriptive Geometry.
E. S. Moles, B. S., Instructor in Mechanical Drawing and Descriptive Geometry.
R. S. Owen, B. S., Instructor in Civil Engineering.
J. C. Potter, B. S., Instructor in Electrical Engineering.
J. R. Price, B. S., Instructor in Electrical Engineering.
E. M. Shealy, B. S., Instructor in Steam Engineering.
J. G. Van Zandt, B. S., Assistant in Railway Engineering.
J. H. Vosskuehler, B. S., Instructor in Machine Design.
J. W. Watson, B. S., Instructor in Electrical Engineering.
O. P. Watts, Ph. D., Instructor in Chemical Engineering.
W. E. Wickenden, B. S., Instructor in Electrical Engineering.
L. D. Williams, B. S., Instructor in Civil Engineering.
M. O. Withey, C. E., Instructor in Mechanics.

Officers of Instruction in other Departments

G. C. Comstock, Ph. B., LL. B., Professor of Astronomy.
C. A. Curtis, A. B., Captain U. S. Army. Professor of Millitary Science and Tactics.
W. W. Daniells, M. S., Sc. D., Professor of Chemistry.
J. C. Elsom, M. D., Professor of Physical Culture.
N. M. Fenneman, Ph. D., Professor of General and Physiographic Geology.
W. D. Frost, Ph. D., Assistant Professor of Bacteriology.
Louis Kahlenberg, Ph. D., Professor of Physical Chemistry.
C. K. Leith, Ph. D., Professor of Economic and Structural Geology.
Victor Lenher, Ph. D., Associate Professor of Chemistry.
C. S. Slichter, M. S., Professor of Applied Mathematics.
A. H. Taylor, B. S., Assistant Professor of Physics.

ARTHUR BEATTY, Ph. D., Instructor in English.
ELIOT BLACKWELDER, A. B., Assistant Professor of Geology.
ELIOT BOARDMAN, A. B., Assistant in French.
A. L. COLTON, A. M., Instructor in Physics.
E. A. COOK, B. L., Instructor in English.
C. D. COOL, A. M., Instructor in Romance Languages.
T. H. DICKINSON, Ph. D., Instructor in English.
T. S. ELSTON, Ph. D., Instructor in Physics.
S. H. GOODNIGHT, Ph. D., Instructor in German.
N. C. GRIMES, A. B., Instructor in Mathematics.
M. H. HAERTEL, Ph. D., Instructor in German.
J. F. HAUSSMANN, Ph. D., Instructor in German.
F. C. HICKS, Ph. D., Instructor in German.
W. O. HOTCHKISS, B. S., Instructor in Petrology.
L. R. INGERSOLL, Ph. D., Instructor in Physics.
J. L. KIND, Ph. D., Instructor in German.
W. F. KOELKER, Ph. D., Instructor in Organic Chemistry.
W. E. LEONARD, Ph. D., Instructor in English.
DOUGLAS MACDUFF, A. B., Assistant in Romance Languages.
H. W. MARCH, M. A., Instructor in Mathematics.
S. E. MOODY, Ph. D., Instructor in Analytical Chemistry.
L. F. MILLER, M. A., Instructor in Physics.
E. A. MORITZ, C. E., Instructor in Mathematics.
W. J. NEIDIG, A. B., Instructor in English.
W. R. NELLES, A. B., Instructor in English.
G. N. NORTHROP, B. A., Instructor in English.
OTTO PATZER, M. L., Instructor in French.
F. R. PERRIN, B. L. S., Assistant in French.
F. W. ROE, A. M., Instructor in English.
E. B. SCHLATTER, A. M., Instructor in Romance Languages.
L. P. SHANKS, A. M., Instructor in Romance Languages.
F. L. SHINN, Ph. D., Instructor in Physical Chemistry.
E. R. SMITH, A. B., Instructor in Mathematics.
E. M. TERRY, A. M., Instructor in Physics.
C. A. TIBBALS, JR. A. M., Instructor in Chemistry and Assaying.
EDMUND WILD, M. S., Assistant in German.
H. C. WOLFF, M. S., Instructor in Mathematics.
E. C. WOOLLEY, Ph. D., Instructor in English.

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 applications 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 and the applied courses as strong in the later years, while the draughting 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 or 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

The requirements for the admission of regular students are stated fully on page 63.

Preparation in Algebra for Engineering Courses

All students entering the College of Engineering are required to pass an examination in algebra before being admitted to the regular algebra classes. It is essential that students in the engineering courses shall possess a good working knowledge of algebra *at the time when they begin their course*, and it is the purpose of the examination to secure this by requiring a review of the subject shortly before entering the University. Students failing in the examination will be required to take extra work in algebra during the first semester.

In performing the fundamental operations of algebra such as multiplication and division, the use of parentheses, the solving of numerical and literal equations of the first and second degree, the

simplification of fractions and radicals, and the putting of problems into equations, it is of the first importance that the student should have distinct notions of the meaning and reasons for all that he does, and be able to state them clearly in his own language. He should be able to perform all these operations, even when 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.

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. Students of other colleges of good standing who have not taken such standard courses, but who have studied 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 SPECIAL STUDENTS

Candidates under twenty-one years of age desiring to take special courses will be required to have the same qualifications as candidates for one of the regular courses.

Persons over twenty-one years of age, *who are not candidates for a degree* and who wish to take special studies, will be permitted to do so upon giving satisfactory evidence that they are prepared to take the desired studies advantageously. An examination in elementary algebra and geometry will be required. If they subsequently desire to become candidates for a degree, or to take a regular course, they must pass the required entrance examinations.

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	$20.00
General fee—first semester	15.00
General fee—second semester	15.00
General fee for four weeks summer term, shop or field work	7.00
Engineering periodical fee for the year	1.00
Gymnasium fee—per semester	1.00

A laboratory fee of $2 per semester, for each two hours' work per week, is charged in all the engineering laboratories, and for the use of surveying instruments in the field.

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 $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 $2.75 to $3 a week; in private families from $3 to $4 a week.

EQUIPMENT

Buildings

The work of the College is carried on in four large buildings. The main building is a four-story structure built for the special use of the College of Mechanics and Engineering. It contains the offices, recitation and draughting rooms, and laboratories for work in Mechanical Engineering, hydraulics, and the testing of materials. A second large building of simple construction contains the main electrical laboratories and the various departments for shop

instruction. A third building contains the laboratories for Chemical Engineering, electrical testing and photometer rooms. Laboratory work in hydraulics is provided for in a large concrete building situated on the shore of Lake Mendota.

For chemistry the engineering students go to the Chemical Building, for physics and other natural sciences to Science Hall, and for language, mathematics, and other similar work, to the literary halls of the University. In this way the students of engineering come into daily contact with the students in the other courses, to the great advantage of all classes.

Libraries

For a general account of the library facilities of the University see page 42. The College of Mechanics and Engineering subscribes for about one hundred and seventy-five technical periodicals, and also purchases duplicate copies of standard engineering works of reference, one set of which, and the engineering periodicals, are kept in the engineering reading room, on the first floor of the Engineering Building, in order to facilitate the frequent use of them by the engineering students. The bound files of technical periodicals in the library are unusually complete, and additions are made every year.

Laboratories and Apparatus

The engineering laboratories are well equipped for purposes of instruction and investigation.

THE TESTING LABORATORY occupies the high sub-basement under the assembly room of the Engineering Building. It is supplied with a Riehlé torsion machine of one hundred and twenty-five thousand inch-pound capacity, permitting the testing of a shaft fifteen feet long and three inches in diameter. There is also installed a Russell impact machine, a one hundred-thousand-pound Riehlé automatic and autographic testing machine, permitting the testing of materials of the larger sizes used in practice, and a beam testing machine, with a capacity of one hundred thousand pounds on a base of twenty-four feet. In addition to these there are also other Riehlé machines, and Olsen and Thurston machines for making tests in tension, compression, bending, and torsion. A hydraulic testing machine of six hundred thousand pounds capacity, designed in the laboratory, is under process of construction. These machines are supplied with extensometers, clamps, devices for

autographic records, and other special devices. A set of standard appliances, including a foundry rattler, is available for testing the wearing and cementing properties of road-building material.

THE CEMENT LABORATORY contains a full supply of necessary apparatus for making tests according to the American Society of Civil Engineers' standard; baths, self-recording thermometers, Boehme hammer, complete one-thousand-pound Riehlé and Fairbanks testing machines, etc.

THE HYDRAULIC LABORATORY.—This laboratory has recently been built on the shore of Lake Mendota, and equipped for experimental and research work. The facilities are especially good for studying those problems where large quantities of water are needed. A direct-connected thirty-inch centrifugal pump furnishing up to 35,000 gallons of water a minute under a twelve-foot head has been installed. This water is delivered into a receiving chamber connected with various conduits and channels by means of which investigations covering the flows in such channels and conduits together with the effects thereon of dams, weirs, racks, submerged orifices, and other features encountered in water power work can be conducted. Four turbines have been purchased. The largest of these, a thirty-inch wheel, which will develop about fifty horse-power under the maximum available head, is equipped with a weir in the tail race, so that accurate determination in regard to quantities, velocities and efficiences under various heads and conditions can be made.

Apparatus has also been provided for the study of flows in straight and curved pipe and hose and losses due to sudden enlargements and contraction and to valves and other forms of restricted passages; for the study of ground water flow and the friction of water through sands and gravels; and for the study of flow over free and submerged weirs of various types and of free and submerged orifices. A large assortment of accurate apparatus for the measurement of quantities, velocities and pressures, both in open and closed channels is available.

The laboratory is equipped with various types of impulse water-wheels, including tangential and Girard turbines, and with various reciprocating steam pumps, centrifugal pumps, vacuum pumps, jet pumps, and hydraulic rams. There is also provided a variety of water meters, among them the Venturi meter.

The regular course of instruction includes a careful selection of typical determinations, and opportunities are offered for ad-

vanced and research work in practical hydraulics and hydraulic machinery as well as in more advanced lines.

THE MECHANICAL LABORATORY.—The main laboratory, which is 74 feet by 50 feet, is a one-story addition in the rear of the Engineering Building, and is so placed that the wings, which ultimately will be added to the building, will leave this laboratory in the court thus created. The floor of this laboratory is on the same level as the main basement of the building; a gallery arranged especially for visitors runs around the whole laboratory, to which gallery one gains entrance from the first floor. A part of this wide gallery is partitioned off, a portion forming laboratories for special investigation. The main laboratory is well equipped with a variety of steam engines, specially arranged for experimental work. The most important of these is a fifty horse-power cross compound engine, so arranged that either cylinder can be supplied with live steam from the boilers and run as a single cylinder engine. The surface condenser and air pump can also be disconnected so that the engine may be run as a non-condensing one. Both cylinders and receiver are provided with steam jackets, which may be used at will. By means of a Proell governor the number of revolutions may be varied from 50 to 125. The cut-off of the steam may vary automatically between zero and ninety-five per cent. of the stroke.

The above engine is also connected to a fifty horse-power superheater, capable of superheating the steam 200 degrees F.

There is also installed a fifteen-ton refrigerating plant, consisting of a Corliss engine direct connected to a horizontal double-acting ammonia compressor. This machine is cross-connected to a five ton, vertical, three-cylinder, single-acting ammonia compressor belted to an electric dynamo. With the above compressors 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. Among the more important pieces of apparatus is a vertical three-cylinder gas engine of seventy-five horse-power capacity. There is also installed a twenty-five horse-power gas producer and producer gas engine.

The laboratory is supplied with friction brakes, transmitting

dynamometers of various kinds and capacities, a mercury column, and other means for testing steam and vacuum gauges and indicators, and various devices for special tests. There are also the necessary tanks, weighing apparatus, pyrometers, theremometers, calorimeters, some forty indicators, revolution counters, tachometers, recording gauges, reducing motions, water meters, etc., for making complete tests of the economy and capacity of boilers and engines. The laboratory is also supplied with a very large number and variety of injectors, and with special facilities for making tests of the same.

The boiler house of the University, which furnishes steam for nearly all of the buildings of the institution, both for heating and for power purposes, is also equipped in such a manner that experimental work with reference to the economy of boilers under various conditions may easily be carried out.

Gas Analysis and Fuel Laboratories.—In the eastern wing of the building are the separate laboratories for gas and coal analysis; these rooms are both large and well lighted, and furnish excellent opportunities for extended researches in these very important branches of study. The equipment includes the Carpenter Coal Calorimeter, Mahler Bomb Calorimeter, Junker Gas Calorimeter, and many forms of gas apparatus.

The Electrical Laboratories are liberally supplied with scientific and commercial instruments, and are arranged for instruction and investigation. With the space and apparatus which are allowed through the generosity of past legislatures, the equipment has been made unusually complete in the lines of continuous current and single and polyphase alternating current generation and distribution, and commercial electrochemistry and electrometallurgy.

The dynamo collection consists of a large number of continuous current dynamos and motors of various types and sizes and a similar number of alternating current dynamos and motors likewise of various types and sizes. They are specially installed for the purpose of instruction and experiment. Over fifty dynamos of various types are supplied for exclusive laboratory use. The largest one has a capacity of 270 horse power and the smallest one a capacity of a fraction of a horse power. The greater number have capacities ranging between five horse power and twelve horse power, which make them particularly adapted to the purpose of laboratory instruction. Two engines, one a high speed

Ideal engine of 150 horse power driving a Bullock continuous current dynamo and the other a Filer and Stowell Corliss engine of 300 horse power driving a National polyphase alternator,—are provided to furnish the necessary power, and electric currents are distributed over the laboratories for use in driving machinery, operating electrical furnaces, and other desirable purposes.

All the necessary apparatus is supplied for use in testing dynamos, including large lamp banks, transformer banks and water rheostats for loading generators; special Prony brakes, etc., for loading motors; and accurate electrical measuring instruments of the various useful types. An extensive collection of transformers and an equally comprehensive bank of integrating electric meters afford opportunities for routine testing and the study of problems relating to the design, construction and use of such apparatus.

Several large rooms are occupied by the appliances and apparatus required for instruction and experiments relating to electric batteries, electrolysis, electroplating, and electrometallurgy. Several smaller rooms are fitted up for experimental investigations. The equipment for these laboratories consists of dynamos and tanks for depositing metals and for other electrolytic processes, apparatus for cleaning, polishing, precipitating, filtering and other processes. An electric furnace room has been fitted up with rheostats and instruments for operating electric furnaces, power being supplied by the large generators described above; various electric furnaces for electrometallurgical operations requiring the intense heat of the electric arc are operated therefrom. Sources of electrical current, both alternating and direct, are available for experimental work, alternating pressures as high as 50,000 volts being employed. The equipment is one of the first and most complete of its kind.

Other rooms are assigned to work in electrical testing, measuring, illumination, and various other branches of laboratory instruction and investigation. The room for electrical testing, photometrical experiments, and the investigation of high tension electrical phenomena are particularly well equipped.

A great number of amperemeters, voltmeters, wattmeters, Wheatstone bridges, variable self-inductance and mutual-inductance boxes, condensers, galvanometers, electrodynamometers, electric balances, 100,000 ohm and megohm resistances, Clark cells, Burgess electrometer testing sets, and other apparatus are

supplied for general use, while standard apparatus for determining the adjustments of the several instruments is at hand. Special means are provided for the important functions of insulation testing, testing the magnetic qualities of metals (including a Ewing hysteresis tester, Ewing permeability bridge, magnetic balance, and other apparatus) for photometry of Nernst, arc and incandescent lamps, and for measuring the distribution of illumination, for which the equipment is very full, three oscillographs, electrical condensers for use with alternating current circuits, etc. Apparatus is also provided for class-room demonstration, such as apparatus for demonstrating the phenemona of polyphase current transformation and polyphase motors, a fine set of models and charts illustrating the different forms of armature windings, etc.

A Thomson electric welder, located in the dynamo room, gives opportunity for instruction upon the electrical working of metals, and a transformer of twenty kilowatts capacity furnishes alternating current at 50,000 volts pressure for instruction in high pressure testing and the phenomena of high pressure electric power transmission. Alternating and polyphase (two-phase and three-phase) currents of the ordinary frequencies are on tap, at the switch-boards, and other frequencies and phases may be generated at will by means of rotary converters, one of which has a capacity of thirty kilowatts.

The demand, from both undergraduate and graduate students, for accommodations in these laboratories has grown so rapidly that another large addition has just been made to the laboratory building for the purpose of increasing the already extensive facilities briefly described in the above paragraphs.

All electrical laboratory work is made to conform with, and to illustrate, the class-room instruction. Of the total number of hours given to instruction in the electrical engineering courses, about one-half is devoted to work in the laboratories. The laboratory work of graduate students is ordinarily in the nature of original experiments or investigations carried on under favorable conditions and directed through constant consultations with the instructor.

Chemical Engineering and Applied Electrochemistry Laboratories.—In the Chemical Engineering Building the first floor and basement are devoted to laboratories for instruction in chemical technology and applied electrochemistry. Two rooms are com-

pletely 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 calcimining 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 500 horse-power.

THE BRIDGE ENGINEERING DEPARTMENT owns a set of Fraenkel's autographic apparatus for the testing of bridges under moving trainloads This includes two extensometers for measuring strains in members and a deflectometer for measuring vertical and lateral deflections. The department also possesses a large French model of a skew arch bridge, several large size iron models of bridge joints and a large collection of drawings and photographs, to which additions are constantly being made.

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, and including, in addition to the large equatorial telescope and the meridian circle, collimators, transit micrometers, chronograph, sidereal and meantime clocks, zenith telescopes, a transit instrument of the broken type, chronometers, an altazimuth, a universal instrument of the German type, spherometer calipers, and a complete set of meteorological instruments.

In addition to this equipment the surveying laboratory contains all the portable, astronomical, and field instruments needed for extensive triangulation, topographic, hydrographic and railroad surveys, including theodolites, altazimuth, tidal gauge, heliotropes, Kern precise-level and new U. S. C. & G. S. precise-level outfits, sounding apparatus, base-line apparatus, current meters, transits, compasses, levels, plane-tables, telemeters, and such

special instruments as plani-meters, pantographs, sextants, computing machines, aneroid barometers, etc.

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.

BACTERIOLOGICAL LABORATORIES.—For a description of these see Index.

THE ENGINEERING MUSEUM contains a complete set of Schroeder's models for descriptive geometry, including shades, shadows, and perspective; also a small collection of Schroeder's kinematic models, besides a number of smaller models, made by students, illustrating problems in kinematics. An excellent industrial collection is in process of development.

The standards of weight and measure belonging to the state are kept in the civil engineering department, and all official comparisons are made here.

COURSES OF STUDY AND DEGREES

Four-Year Courses

The College of Engineering offers six systematic four-year courses as follows:

CIVIL ENGINEERING,
SANITARY ENGINEERING,
MECHANICAL ENGINEERING,
ELECTRICAL ENGINEERING,
APPLIED ELECTROCHEMISTRY,
CHEMICAL ENGINEERING,
GENERAL ENGINEERING, including an elective course in MINING ENGINEERING.

Students who complete any one 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.

Higher Degrees

The degree of *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer*, and *Chemical Engineer* are conferred as second degrees upon Bachelors of Science in the Civil, Mechanical, Electrical, and Chemical Engineering Courses respectively, or in allied courses, (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.

Five and Six-Year Courses

With the rapid development in the industrial and commercial life of the country, the work of the engineer is constantly being extended to new and wider fields. These changing conditions demand that the training of the engineer shall be as broad and thorough as possible, for experience shows that those who prove to be the most successful in handling large enterprises are those who have breadth of view coupled with high technical attainments. Very often, indeed, the technical requirements are of secondary importance compared to the ability to secure the economical execution of work through efficient organization. It is coming to be generally recognized that a four-year technical course following the high school course is not an adequate preparation for those who are to fill the most important positions in the engineering profession; and the University would urge upon all those who can afford the time to extend their studies over a period of five or six years. To those who can thus extend their course the University offers excellent opportunities for acquiring a more thorough preparation by a combination of studies of the College of Letters and Science with the technical studies of the College of Engineering. Provision is made for carrying out such a combination of studies in two ways, as indicated below.

A

Courses leading to the B. S. Degree at the end of five years, and the professional degree (C. E., M. E., Ch. E., or E. E.)at the end of six years.

Courses of study have been arranged in which the work included in the regular four-year engineering course is distributed over a period of five years, and the time thus available is thrown open for election in any department of the University. The amount of time open for election is sufficient to enable the student to pursue satisfactorily some one or two lines of study in the College of Letters and Science, the College of Law, or the College of Agriculture, and thus greatly to strengthen his course By taking such a five-year course a student may, for example, secure all of the essential studies of the Course in Commerce, together with a full Engineering course. Outlines of the five-year courses with suggested groups of electives are given on page 275.

At the end of the fourth year of the fifth-year course no degree is given unless the student so elects. In this case he is required to write a thesis, and the degree will be *Bachelor of Science, General Engineering Course*, the work on the first four years corresponding closely to that course. The degree conferred at the end of the five years is the same as that given on the completion of the regular four-year course in Civil, Mechanical, or Electrical Engineering. Students pursuing their work for a sixth year will be ranked as graduate students, and will receive the professional degree of C. E., M. E., Ch. E., or E. E.

B

Courses leading to the B. A. degree in four years, and to the B. S. degree in two additional years.

Students desiring to secure the collegiate degree at the end of four years, and the engineering degree at the end of two additional years, will register in the College of Letters and Science during their 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.

Modern Language Requirements in all Engineering Courses

1. When the entrance language requirement is fulfilled (see page 66): There are required 11 semester hours in French or German. (When French or German is offered for entrance, then the same language should preferably be continued in the University).

2. When the entrance language requirement is not fulfilled: Students who present the required number of units for entrance and who are graduates of accredited schools will be admitted without a preparation in language, but subject to a condition in the same. In this case there are required 19 semester hours in French or German. If French be taken and an average mark of 85, or over, be made in the first 11 hours, then the remaining 8 hours may be taken in another language.

Note.—For satisfactory reasons, the Faculty will permit the substitution of Spanish for French or German.

Inspection Tours

An inspection trip is made by the junior class during the week of the Easter recess. In this tour great manufacturing establishments and other important private and public engineering works in Chicago, Milwaukee and elsewhere are visited. These tours are made under the guidance of the professors, and are required of all juniors, unless excused by the faculty. Students who may be excused are required to present a report at the opening of the senior year on assigned inspection work of a similar character.

OUTLINE OF ENGINEERING COURSES

FOUR-YEAR COURSES

Freshman Year--All Courses

Note.—In reckoning the hours per week required for the various studies, two hours of laboratory, draughting room, field, or shop work count as one hour of class-room work, which is the unit in this outline.

FIRST SEMESTER

	Hours per Week
German 2E*, French 5E, or Spanish 2EC†	4
English 1	3
Mathematics 101, Algebra	5
Chemistry 2	3
Mechanical Drawing 1	3
‡Topographical Engineering 2, or Shopwork	1

SECOND SEMESTER

German 2E, French 5E, or Spanish 2EC	4
English 1	3
Mathematics 102 and 103 (Trigonometry and Analytical Geometry)	5
Chemistry 2	3
Mechanical Drawing 2	3
‡Topographical Engineering 2, or Shopwork	1

CIVIL ENGINEERING COURSE

Sophomore Year

FIRST SEMESTER

	Hours per Week
Mathematics 105 (Calculus)	5
Physics 101	5
Topographical Engineering 3, Elementary Surveying	4
Railway Engineering 1	2
Topographical Engineering 1 (Topographic Drawing)	1
Mechanical Drawing 3 (Descriptive Geometry)	3
French 16E	3

*The figures in the text refer to the numbers of the courses of study.

†Students taking second year Spanish must take it in the first semester.

‡Topographical Engineering is required of Civil Engineers, and Shop-work of Mechanical and Electrical Engineers.

SECOND SEMESTER

	Hours per Week
Mathematics 105 (Calculus)	3½
Physics 101	5
German 3E, or Mechanical Drawing	3
Mechanics 1, 2	5
Topographical Engineering 1 (Drawing)	1
Topographical Engineering 4 (Advanced Surveying)	3
*Topographical Engineering 6 (Trigonometric Survey)	4 weeks

Junior Year

FIRST SEMESTER

Mechanics 2, 3	6
Mechanics 4 (Testing Laboratory)	2
Steam Engineering 7	2
Mechanical Laboratory 3	1
Structural Engineering 1 (Structural Details)	2
Railway Engineering 2	5
Hydraulic Engineering 1, 2	3

SECOND SEMESTER

Mechanics 4	2
Railway Engineering 3 (Maintenance of Way)	2
Structural Engineering 2, 3, 4a (Masonry)	4
Structural Engineering 5a (Bridge Stresses)	3
Structural Engineering 7a (Bridge Design)	3 or 1
Astronomy 6	4
or Topographical Engineering 5 (Geodesy)	2
Hydraulic Engineering 10	2
Elective	1 to 3

Inspection tour of engineering work.

Senior Year

FIRST SEMESTER

Structural Engineering 4b (Dams and Stereotomy)	3
Structural Engineering 6, 7b (Bridge Design)	4 or 6
Hydraulic Engineering 11 (Water Supply)	3
Electrical Installations 11	2
Applied Electromagnetism 2	1
Thesis and Elective	7 or 5

*May be taken at the end of either the sophomore or junior year.

SECOND SEMESTER

	Hours per Week
Railway Engineering 7 (Tunnels and Substructures)	1
Rivers and Canals 1	1
Electrical Installations 11	2
Applied Electromagnetism 2	1
Contracts and Specifications 1	1
Thesis and Elective	14

In the senior year opportunity is given to select groups of electives in Railway, Structural, Hydraulic, or Geodetic Engineering; or the student may select studies so as to secure a more general course. Details of the various courses offered are given on subsequent pages.

For the statement of the five-year course see page 275.

SANITARY ENGINEERING COURSE

Freshman and Sophomore Years

Same as the Civil Engineering Course.

Junior Year

FIRST SEMESTER

	Hours per Week
Mechanics 2, 3	6
Mechanics 4 (Testing Laboratory)	2
Hydraulic Engineering 1, 2	3
Railway Engineering 2	5
Chemistry 12	3
Structural Engineering 1	2

SECOND SEMESTER

Mechanics 4 (Testing Laboratory)	2
Railway Engineering 3 (Maintenance of Way)	2
Structural Engineering 2, 3, 4a (Masonry)	4
Structural Engineering 5a, 7a (Bridge Stresses, Roof and Bridge Design)	6
Hydraulic Engineering 10	2
Chemistry 14 (Water Analysis)	5

*Topographical Engineering 6 (Trigonometric Survey) 4 weeks

Inspection tour of engineering works.

*May follow either the sophomore or junior year.

Senior Year

FIRST SEMESTER

	Hours per Week
Steam Engineering 7 (Steam Engine)	2
Mechanical Laboratory 3	1
Structural Engineering 4b (Dams and Stereotomy)	2
Hydraulic Engineering 11, 13 (Water Supply)	5
Steam Engineering 8 (Heating and Ventilation)	3
Biology of Water Supplies	5
Electrical Installations 11	2
Applied Electromagnetism 2	1

SECOND SEMESTER

Railway Engineering 7 (Tunnels and Substructures)	1
Hydraulic Engineering 12, 13 (Sewerage and Drainage)	5
Roads and Pavements	2
Electrical Installations 11	2
Applied Electromagnetism 2	1
Contracts and Specifications	1
Thesis and Elective	8

MECHANICAL ENGINEERING COURSE

Sophomore Year

FIRST SEMESTER

Mathematics 104 (Analytical Geometry, Calculus)	5
Physics 101	5
Shop Work	4
German 3E, French 16E, or Spanish 5E	3
Mechanical Drawing 3 (Descriptive Geometry)	3

SECOND SEMESTER

Mathematics 104	5
Mechanics 1, 2	5
Physics 101	5
Machine Design 1 (Mechanism)	4
Shop Work	1

Shop-work; four weeks vacation work. See note p. 302.

Junior Year

FIRST SEMESTER

	Hours per Week
Mechanics 2, 3	6
Mechanics 4 (Testing Laboratory)	2
Steam Engineering 1, 2 (Thermodynamics, Heat Engines)	5
Machine Design 3	5
Shop Work	2
Mechanical Laboratory 5	1

SECOND SEMESTER

Mechanics 4	1
Hydraulic Engineering 1, 2	3
Steam Engineering 3, 4 (Boilers, Valve Gears)	5
Mechanical Laboratory 1	1½
Machine Design 3	5
Shop Work	3
Elective	2 or 3

Inspection tour through industrial establishments.

Senior Year

FIRST SEMESTER

Applied Electro-Magnetism 2, 3 (Electrical Machinery, Laboratory)	5
Mechanical Laboratory 2	1½
Hydraulic Engineering 4	3
Steam Engineering 5 (Steam Engine Design, optional)	5
Machine Design 5 (optional)	5
Thesis and Elective	6

Inspection tour through industrial establishments.

Either Steam Engineering 5, or Machine Design 5, must be taken. The study selected must be taken for the entire year.

SECOND SEMESTER

Contracts and Specifications	1
Alternating Currents 2, 7 (Elementary Applied)	5
Steam Engineering 5 (Steam Engine Design, optional)	5
Machine Design, Machine Elements, Transmission of Power (optional)	5
Mechanical Laboratory 4	1
Thesis and Elective	8

For statement of five-year courses see page 276.

ELECTRICAL ENGINEERING COURSE

Sophomore Year

FIRST SEMESTER

	Hours per Week
French 16E, German 3E, or Spanish 5E	3
Mathematics 104 (Analytical Geometry and Calculus)	5
Physics 101	5
Chemistry 12	3
Machine Design 1 (Mechanism)	4

SECOND SEMESTER

Mathematics 104	5
Physics 101	5
Chemistry 12	2
Mechanics 1, 2	5
Mechanical Drawing 3 (Descriptive Geometry)	3

Shop work; four weeks vacation work. See note p. 302.

Junior Year

FIRST SEMESTER

Mechanics 2, 3	6
Mechanics 4 (Testing Laboratory)	2
Physics 104 (Precision of Measurement)	2½
Applied Electromagnetism 1 (Electromagnetism and Dynamos)	3
Steam Engineering 6 (Thermodynamics)	2
Machine Design 2	3
Shop Work	2

SECOND SEMESTER

Hydraulic Engineering, 1, 2	3
Steam Engineering 6 (Thermodynamics)	2
Mechanical Laboratory 1	1½
Applied Electro-Magnetism 1, 2 (Electro-Magnetism and Dynamos)	5
Electrical Installations 2 (Electrical Testing)	3
Mechanics 4	1
Machine Design 2	2
Electives in Civil and Mechanical Engineering	3

Inspection tour through industrial establishments.

Senior Year

FIRST SEMESTER

	Hours per Week
Alternating Currents 1, 2	5
Applied Electro-Magnetism 2 (Testing Direct Current Dynamos)	2
Mechanical Laboratory 2	1½
Hydraulic Engineering 4	3
Electives from: Electrical Installations 3, 5, 7, 8, 10, Applied Electrochemistry or Ry. Engineering 4	7
Thesis	2

SECOND SEMESTER

Alternating Currents 1, 2	3
Electives from: Electrical Installations 3, 4, 5, 6, 8, Alternating Currents 3, 4, Applied Electrochemistry 2, Structural Engineering 9	10
Contracts and Specifications	1
Thesis and Elective	5

For a statement of the five-year course see page 276.

Graduate Courses

Graduates and advanced students are offered instruction in advanced theory, design, and experimental investigations relating to electrical engineering and applied electrochemistry, as is more fully explained in later pages under Departments of Instruction and also under the Graduate School. (See Index.)

CHEMICAL ENGINEERING COURSE

Sophomore Year

FIRST SEMESTER

	Hours per Week
German 3E or French 16E	3
Mathematics 105 (Calculus)	5
Physics 101	5
Mechanical Drawing 3	3
Chemistry 12 (Analytical)	4

SECOND SEMESTER

	Hours per Week
Mathematics 105 (Calculus)	3½
Mechanics 1, 2	5
Physics 101	5
Machine Design 1	3
Chemistry 12 (Analytical)	4

Shop work; four weeks summer term; may be taken during any summer vacation.

Junior Year

FIRST SEMESTER

Mechanics 2, 3	6
Mechanics 4 (Testing Laboratory)	2
Steam Engineering 6	2
Machine Design 2	3
Chemistry 20 (Organic)	5
Physical Chemistry	2

SECOND SEMESTER

Mechanics 4 (Testing Laboratory)	1
Machine Design 4	2
Steam Engineering 6	2
Mechanical Laboratory	1½
Hydraulics 1, 2	3
Structural Engineering 2	2
Topographical Engineering 8	3
Physical Chemistry	4
Chemical Technology 1	2

Inspection tour through industrial establishments.

Senior Year

FIRST SEMESTER

Electrical Installations 11	2
Applied Electromagnetism 2	1
Structural Engineering 11 (Building Construction)	2
Mechanical Laboratory 2	1½
Chemical Technology 2	2
Chemical Technology 5	3
Thesis and Electives	9

SECOND SEMESTER

	Hours per Week
Electrical Installations 11	2
Applied Electromagnetism 2	1
Hydraulic Engineering 5	3
Chemical Technology 3	2
Chemical Technology 4	5
Contracts and Specifications	1
Thesis and Electives	6

Courses from which electives may be chosen:

Applied Electrochemistry 1, 2, 6, 7.
Chemical Technology 6, 7, 8.
Advanced Physical Chemistry.
Advanced Inorganic Chemistry.
Advanced Organic Chemistry.
Geology.
Mineralogy.
Assaying.
Bacteriology.
Steam Engineering 9.

For students who wish to specialize in gas engineering or to fit themselves for any particular line of work, a fifth year is recommended. At the completion of such fifth year, including the preparation of a thesis, the degree of Chemical Engineer will be granted.

APPLIED ELECTROCHEMISTRY COURSE

Freshman and Sophomore Years

Same as the Chemical Engineering Course.

Junior Year

FIRST SEMESTER

	Hours per Week
Mechanics 2, 3	6
Mechanics 4 (Testing Laboratory)	2
Applied Electro-Magnetism 1, 2 (Electro-Magnets and Dynamos)	3
Chemistry 20 (Organic)	5
Chemistry 31 (Electrochemistry)	4

SECOND SEMESTER

	Hours per Week
Applied Electro-Magnetism 1, 2 (Electro-Magnets and Dynamos)	5
Mechanics 4 (Testing Laboratory)	1
Mechanical Drawing 4	2
Chemistry 31 (Electrochemistry)	5
Chemical Technology 1	2
Hydraulics 1, 2	3
Elective	3

Inspection tour through industrial establishments.

Senior Year

FIRST SEMESTER

Applied Electrochemistry 1	5
Chemical Technology 5	3
Electrical Installations 3	2
Steam Engineering 7	2
Mechanical Laboratory 3	2
Thesis and Elective	6

SECOND SEMESTER

Alternating Currents 7	3
Applied Electrochemistry 2	5
Chemical Technology 4	5
Contracts and Specifications	1
Thesis and Elective	6

GENERAL ENGINEERING COURSE

There is a strong demand in various industrial and commercial lines for technically educated men who cannot be classified as engineers, properly speaking. Superintendents and managers, presidents and secretaries, owners and members of boards of directors, of all large manufacturing and commercial enterprises, as well as of all transportation, lighting, and power companies, should be acquainted with the fundamental principles and practices of some of the ordinary applications of science to modern industry. For the practical education of such men a General Engineering Course has been established, with only the fundamental engineering sciences required, in addition to the regular work of

the freshman year. This leaves about one-third of the entire time to be filled by such elective studies in the College of Engineering, or in other Colleges of the University, as the student may find best suited to his particular needs. It may well be also that some students who expect to practice engineering will prefer to elect a considerable portion of their course in place of taking any one of the fixed engineering courses.

The subjects given below are the ones which are required. Elective studies must be arranged to secure continuity of work and must be approved by the student adviser.

Freshman Year

All the studies of this year are required, and are the same as in the other engineering courses.

Sophomore Year

FIRST SEMESTER

	Hours per Week
Mathematics 105	5
Physics 101	5
Mechanical Drawing 3 (Descriptive Geometry)	3
German 3E, French 16E; either first or second semester	3
Elective	4

SECOND SEMESTER

Mathematics 105 (Calculus)	3½
Physics 101	5
Mechanics 1, 2	5
Elective	6

Shop or field work, four weeks' summer term; may be taken at the end of either the sophomore or junior year.

Junior Year

FIRST SEMESTER

Mechanics 2, 3	6
Mechanics 4 (Testing Laboratory)	2
Steam Engineering 6	2
Hydraulic Engineering 1, 2	3
Elective	7

SECOND SEMESTER

	Hours per Week
Mechanics 4 (Testing Laboratory)	1
Steam Engineering 6	2
Mechanical Laboratory 1	1½
Elective	16

Inspection tour through industrial establishments.

Senior Year

FIRST SEMESTER

Applied Electro-Magnetism 2 and 3	5
Elective	15

SECOND SEMESTER

Contracts	1
Thesis and Elective	19

A two or three-hour course in Hydraulic Engineering must be taken in the senior year.

MINING ENGINEERING GROUP OF ELECTIVES

Students who take the General Engineering Course may group their electives in chemistry, mineralogy, and geology in such a way as to prepare them for mining engineering. The arrangement of these electives, together with such other studies as are most desirable in a mining course, is as follows:

Sophomore Year

FIRST SEMESTER

	Hours per Week
Chemistry 12, 13	5
Topographical Engineering 3	3½

SECOND SEMESTER

Chemistry 12, 13	5
Topographical Engineering 9, 10	4

Junior Year

FIRST SEMESTER

Geology 6	5
Geology 1	5

SECOND SEMESTER

	Hours per Week
Geology 6	5
Geology 2, 3	5
Structural Engineering	2

Senior Year

FIRST SEMESTER

Railway Engineering 1	4
Machine Design 3	2
Geology 11 and one of courses 14 to 18	6
Geology 8	3

SECOND SEMESTER

Railway Engineering 7	2
Structural Engineering 9	3
Geology 11, 12 and one of courses 14 to 18	6
Geology 9, 10	5

The course of study here outlined is arranged with special reference to the needs of those who expect to work in the Lake Superior region.

The professors in the department of Geology, in the College of Letters and Science, have for many years been engaged in the investigation of the mining resources of the Northwest for the United States Geological Survey, and they offer training for mining work in this field, and especially in the iron ores, which is surpassed in no other institution. Attention is also given to the zinc and lead district of southwestern Wisconsin. Students who continue work in geology in a graduate course may qualify themselves for work in mining geology (as distinguished from technical mining engineering), judging ore districts and ore deposits, directing exploration and mining development, and better qualifying themselves for mine superintendency.

If desired, students taking the mining group will usually be able to obtain their degree in Mining Engineering at a mining school in one additional year.

A five-year course for Civil Engineering students offering larger options in mining geology and similar elections along any line of geological work, and leading to the degree of *Bachelor of Science, Civil Engineering Course*, is outlined below. This is a more desirable course than the one given above.

FIVE OR SIX-YEAR COURSES.

COURSE IN CIVIL ENGINEERING

Leads to the degree of *B. S., Civil Engineering Course*, at the end of five years, and the degree of *C. E.* at the end of six years.

First Year

FIRST AND SECOND SEMESTERS

	Hours per Week
Mathematics 101, 102, 103	5
German 2E, French 5E or Spanish 2EC	4
Chemistry 2	3
English 1	3
Elective	3

Second Year

FIRST AND SECOND SEMESTERS

Mathematics 105	5
Physics 101	5
Mechanical Drawing 1 and 2	3
Elective	5

Third Year

FIRST SEMESTER

Mechanics 1 and 2	5
Mechanics 4	2
Topographical Engineering 2 and 3	4
Mechanical Drawing 3	3
Elective	4 to 6

SECOND SEMESTER

Mechanics 2 and 3	6
Mechanics 4	1
Topographical Engineering 1 and 4	4
Structural Engineering 2, 3, 4a	4
Elective	4 to 6

Fourth Year

FIRST SEMESTER

	Hours per Week
Hydraulic Engineering 1, 2	3
Steam Engineering 7	2
Mechanical Laboratory 1	1
Railway Engineering 1	5
Structural Engineering 1, 4b	5
Elective	5

SECOND SEMESTER

Hydraulic Engineering 10	2
Structural Engineering 5a, 7a	6
Railway Engineering 3	2
Topographical Engineering 5	2
or Astronomy	4
Elective	5 to 7

Fifth Year

FIRST SEMESTER

Structural Engineering 6, 7b	4
Hydraulic Engineering 11	3
Elective in Engineering	7
Thesis and Elective	6

SECOND SEMESTER

Railway Engineering 7	1
Rivers and Canals	1
Engineering Contracts and Specifications	1
Elective in Engineering	11
Thesis and Elective	6

Sixth Year

Sixth year work will be arranged for as graduate work.

The thesis for the baccalaureate degree may be written in any department of the University, subject to the approval of the Engineering faculty.

Courses in Mechanical and Electrical Engineering, and in Applied Electrochemistry, similar to the foregoing course in Civil Engineering have been arranged in which the special work of the respective course replaces the Civil Engineering studies here

given. Detailed statements of these courses, together with full information regarding the various departments, are contained in the special announcement of the College of Engineering, which may be had by addressing the Dean of the College.

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 College in Commerce, together with a full engineering course.

First Year: Physiography and Physical Geography, 3 hours.

Second Year: Elementary Economics, 3 hours for one semester; Commercial Geography 3 hours for one year.

Third Year: Money and Banking and Transportation 3 hours; Commercial Law 3 hours.

Fourth Year: Group in Banking and Finance, Transportation, or the Manufacturing Industries, 3 hours; Business Administration 2 hours.

Fifth Year: Business Administration 2 hours; Group and Thesis 4 hours (if the thesis is taken in Commerce).

ELECTIVE GROUP IN GEOLOGY

For Civil Engineering students desiring to enter mining or geological work, the following group of studies is suggested:

Third Year: Mineralogy, 5 hours.

Fourth Year: General Geology, 5 hours.

Fifth Year: Economics, Structural or Metaphoric Geology, 5 hours. To be selected from Geology: Courses 11, 12, 14, 15, 16, 17. Elective work in Advanced Geology, 5 hours.

Students selecting this group should take Surveying in their second year.

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 their undergraduate course, in order that the engineering course may be completed in two additional years:

Mathematics 101 to 105; Physics 101; Chemistry 2; Mechanical

Drawing 1, 2 and 3; Topographical Engineering 2, 3, and 4, or Machine Design 1; Applied Mechanics 1.

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-fifth study. Two hours of draughting, laboratory, field, or shop work (which require no outside preparation) count as one hour of recitation.

ENGLISH

DR. BEATTY, DR. WOOLEY, MR. COOK, MR. LEONARD, MR. NEIDIG, MR. NELLES, MR. NORTHROP, AND MR. ROE.

1. Freshman English. English prose. Style. Composition. *Three hours a week throughout the year.*

GERMAN

ASSISTANT PROFESSOR EVANS, DR. HAERTEL, DR. HAUSSMANN, DR. HICKS, MR. PURIN, AND MR. WILD.

2E. *First Semester:* Review of grammar. Narrative and historical prose.
Second Semester: One drama and introductory scientific prose. *Four times a week at* 8, 9, 2, *and* 3. Five sections.

3E. Advanced scientific prose and current engineering literature. *First or second semester; M., W., F., at* 9 *and* 10. Two sections. For sophomores.

FRENCH

MR. PATZER, MR. SCHLATTER, MR. SHANKS, AND MR. BOARDMAN.

5E. Elementary French for Engineers. In the first semester the work will be for the most part the same as that in course

1 (College of Letters and Science), except that more attention will be paid to reading. During the second semester Herdler's *Scientific Reader* or other work of similar character will be introduced. Three sections: *Four hours a week throughout the year.* Mr. SCHLATTER, Mr. SHANKS, and Mr. BOARDMAN.

16E. Second Year French for Engineers. Continuation of course 5E. Reading in literary and scientific prose. Review of Grammar. *M., W., F., at* 8, Mr. PATZER.

SPANISH

MR. COOL AND MR. MACDUFF.

2EC. Elementary. Giese's *First Spanish Book* and other easy prose. *Three sections. Four hours a week throughout the year, at* 8 *and* 9. Mr. COOL and Mr. MACDUFF.

5E. Second Year. Scientific Spanish for Engineers. Reading and Grammar. *First semester; M., W., F., at* 8. Mr. COOL.

Courses 7C and 8C (see Index under French) are also open to students in engineering.

MATHEMATICS

PROFESSOR SLICHTER, MR. GRIMES, MR. MARCH, MR. MORITZ, MR. SMITH, AND MR. WOLFF.

101. Algebra and Trigonometry. *First semester; M., T., W., Th., F., (90 hours in class-room).* Required of freshmen in engineering.

102. Analytical Geometry and Trigonometry. *Second semester; M., Tu., W., Th., F., (90 hours in class-room).* Required of freshmen in engineering.

104. Calculus. For all courses except Civil Engineering. *Throughout the year; M., Tu., W., Th., F., (180 hours in class-room).*

105. Calculus. For the Civil Engineering course. *First semester and part of second semester; M., Tu., W., Th., F., (166 hours in class-room).*

PHYSICS

ASSISTANT PROFESSOR TAYLOR, MR. COLTON, DR. ELSTON, MR. MILLER, MR. TERRY, MR. BEWICK, MR. BRIDGEMAN, MR. RUGGLES, MR. SUYDAM, MR. WENIGER, MR. WETZEL, AND MR. WILLIAMS.

101. General Lectures and Introductory Laboratory Practice. Required of sophomores in engineering. *Throughout the year. Lectures, M., at* 5, *Th., at* 4. Assistant Professor TAYLOR. *Two recitations in sections, at hours to be assigned.* Mr. TERRY, Mr. COLTON, and Dr. ELSTON. *Two laboratory periods a week.* Mr. MILLER and assistants.

104. Laboratory Course in Electrical and Magnetic Measurements Testing and calibration of electrical instruments, and determination of constants. Required of juniors in Electrical Engineering. *Two and one-half hours a week. First semester.* Assistant Professor TAYLOR and Mr. TERRY.

105. Advanced Electrical Measurements. Elective for those who have had course 104 or its equivalent. The determination of self-inductance, mutual inductance, capacity, etc., by the most recent methods. *Hours and credits to be arranged.* Assistant Professor TAYLOR and Mr. TERRY.

7. High Temperature Measurements. A laboratory course in the measurements of high temperatures by the most recent optical and electrical methods. *Four laboratory hours per week accompanied by lectures every other week. Second semester; two-fifths credit.* Professor MENDENHALL and Dr. INGERSOLL.

9. Thesis. Open to those who have completed courses 101 and either 105 or 7. Professor MENDENHALL and Assistant Professor TAYLOR.

CHEMISTRY

PROFESSORS DANIELLS AND KAHLENBERG, ASSOCIATE PROFESSOR LENHER, DR. KOELKER, AND ASSISTANTS.

2. General Chemistry. For freshmen in the College of Engineering. *Three-fifths study. Two lectures, one recitation, and one three-hour laboratory period a week throughout the year.* Associate Professor LENHER and assistants.

4. Chemical Preparations. Laboratory course in the preparation of typical inorganic compounds. Associate Professor LENHER.

12. Analytical Chemistry. For sophomore engineers. *Two-fifths study. First semester:* Qualitative analysis. *Second semester:* Quantitative analysis. Professor DANIELLS, Dr. MOODY and Mr. KRAUSKOPF.

13. Quantitative Chemical Analysis. For junior engineers. Continuation of course 12. The analysis of metals, ores, minerals, and economic products. *Three-fifths study throughout the year.* Professor DANIELLS, Dr. MOODY and Mr. KRAUSKOPF.

14. Water Analysis. For students in sanitary engineering. *Second semester; five-fifths study.* Professor DANIELLS.

20. Organic Chemistry. Lectures and Labratory work. In the first semester the work will be chiefly on the aliphatic, and in the second semester on the aromatic compounds. *Full study throughout the year. Lectures, M., W., and six hours labratory work.* Dr. KOELKER and Mr. JOHNSON.

24. Advanced Organic Chemistry. One lecture a week throughout the year on selected topics. In 1907-08 the subjects will be selected from the aromatic series. Dr. KOELKER.

30. Physical Chemistry. The lectures and recitations are supplemented by labratory exercises in physicochemical measurements. Must be preceded by Chemistry 1. *Five-fifths study throughout the year. Lectures and recitations, first semester; Tu., Th., at* 8. *Second semester; W. F., at* 8. Professor KAHLENBERG and Dr. SHINN.

31. Electrochemistry. Lectures and recitations. Labratory work in electrochemical measurements supplements the lectures, and with them makes a full study. *Lectures during the first semester; W., F., at* 8. *Labratory work throughout the year.* Professor KAHLENBERG and Dr. SHINN.

32. Thermal Chemistry. *Lectures M., at* 8, *and one three-hour laboratory period a week. Second semester.* Professor KAHLENBERG.

35. Advanced Physical Chemistry. Lectures on selected topics. *Second semester; Th., at* 8. In 1908 the lectures will be on the subject of solutions. Professor KAHLENBERG.

36. Advanced Electrochemistry. A course in the preparation of chemical compounds by means of electrolysis and the electric furnace. Weekly conferences accompany the laboratory

work. *Full study throughout the year; hours to be arranged.* Professor KAHLENBERG and Dr. SHINN.

37. Research Work in Physical Chemistry. *Daily throughout the year; hours to be arranged.* Professor KAHLENBERG.

50. Assaying. A course in practical assaying. *Second semester; hours to be arranged.* Associate Professor LENHER and Mr. TIBBALS.

ASTRONOMY

PROFESSOR COMSTOCK.

6. Astronomical Practice. Theory and use of the simpler instruments used in astronomical and geodetic field work. Determination of time, latitude, and the direction of the meridian, together with drill in numerical computations. *Second semester; M., Tu., W., Th.,* 2 *to* 4:

Elective for juniors in Civil, Sanitary, and General 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. *Two hours a week throughout the year.*

Open to election by students who have completed course 6.

GEOLOGY

PROFESSORS FENNEMAN AND LEITH, ASSISTANT PROFESSOR BLACKWELDER, MR. HOTCHKISS, AND MR. MARTIN.

1. General Geology. *First semester; M., Tu., W., Th., F., at* 12. Professors BLACKWELDER and LEITH.

2. Applied Geology, including economic geology, map work and field geology. *Second semester; five-fifths credit.* Professors FENNEMAN, LEITH and BLACKWELDER.

4. Physical Geography. *First semester; M., W., F., at* 10. Professor FENNEMAN.

4a. Physical Geography for Commerce Students. *First semester; M., W., F., at* 10. Mr. MARTIN.

5. Physiography of the United States. *Second semester; M., W., F., at* 10. Professor FENNEMAN.

5a. Geography of Europe. *Second semester; three-fifths credit* Mr. MARTIN.

6. General Course in Mineralogy. *Throughout the year; M., Tu., W., Th., F., at* 11. Mr. COREY.
7. Short Course in Mineralogy. *Throughout the year; three-fifths credit.* Mr. COREY.
8. Optical Mineralogy. *First semester; M., W., F.,* 8 *to* 10. Mr. HOTCHKISS.
9. Field Petrology. *Second semester; Tu., Th.,* 9 *to* 11. Mr. HOTCHKISS and Mr. COREY.
10. Microscopic Petrology. *Second semester; M., W., F.,* 8 *to* 10. Mr. HOTCHKISS.
11. **Econo**mic Geology. *Throughout the year; M., W., F., at* 4. Alternates with course 15. Professor LEITH.
12. Historical Geology. *First semester; M., Tu., W., Th., F.. at* 10. *Five-fifths credit.* Mr. BLACKWELDER.
13. Areal Physiography. *Credit given on work done.* Professor FENNEMAN.

13a. Soil Physiography. *Three hours a week.* Profesor FENNEMAN.

14. Principles of Structural Geology. *First semester; Tu., Th., at* 4. Professor LEITH.
15. Metamorphism. *Three-fifths study throughout the year at* 4. Alternates with course 11. Professor LEITH.
16. Metamorphic Rocks. Labratory work, suplementary to course 15. *Throughout the year; Tu., W.,* 2 *to* 4. Professor LEITH.
17. Principles of pre-Cambrian Geology. *Second semester; Tu., Th., at* 4. Alternates with course 18. Professor LEITH.
18. Lake Superior Geology. *Second semester; Tu., Th., at* 4. Alternates with course 17. Professor LEITH.
19. Advanced Petrology. *Credit given on work done.* Mr. HOTCHKISS.
20. Advanced Crystallography. *Credit given on work done.* Professor HOBBS and Mr. HOTCHKISS.
21. Systematic Paleontology (Invertebrates). *Second Semester; three-fifths credit.* Mr. BLACKWELDER.
22. Research Work for Graduates. A full or double study running through the year, as desired by individual students.
23. Geological Seminary. *F. at* 5.

BIOLOGY OF WATER SUPPLIES

ASSISTANT PROFESSOR FROST.

8. Biology of Water Supplies. Lectures and labratory work. Adapted to the needs of students in Sanitary Engineering. *First Semester; full study.* Assistant Professor FROST.

MECHANICAL DRAWING

PROFESSOR PHILLIPS, MR. MILLAR, MR. MOLES, AND MR. FOSTER.

1. Elements of Drawing. Working drawings; Sketching, Lettering, Tinting, Tracing, and Blue Printing. Tracy's *Mechanical Drawing. First semester; three two-hour drawing periods weekly; three-fifths credit.* Professor PHILLIPS, Mr. MOLES, and Mr. FOSTER.

   Required of freshmen in engineering.

2. Elements of Drawing. Third angle projection. Isometric and Cabinet drawing. Tracy's *Mechanical Drawing. Second semester; three two-hour drawing periods weekly; three-fifths credit.* Professor PHILLIPS, Mr. MOLES and Mr. FOSTER.

   Required of freshmen in engineering.

3. Descriptive Geometry. Problems relating to the point, line and plane. The generation and classification of lines and surfaces; planes tangent to surfaces of single and double curvature; intersections, developments, and revolutions. Notes on *Descriptive Geometry. First semester* for students in Civil and Mechanical Engineering. *Second semester* for students in Electrical Engineering. *One lecture, one recitation, and two two-hour drawing periods weekly; three-fifths credit.* Mr. MILLAR, Mr. MOLES, and Mr. FOSTER.

   Required of sophomores in engineering.

4. Freehand Lettering. A continuation of the lettering work in courses 1 and 2. *First semester; two one-hour periods weekly; one-fifth credit.* Professor PHILLIPS.

   Elective for engineering students.

5. Sketching. In perspective. Architectural, bridge and machine details. *Second semester; one two-hour period weekly; one-fifth credit.* Professor PHILLIPS.

   Elective for engineering students.

6. Mechanical Lettering. Roman and Gothic styles. *Second*

semester; two two-hour periods weekly; two-fifths credit. Professor PHILLIPS.

Elective for engineering students.

7. Finished Drawings. Drawings finished in line and color. Preparation of drawings for zinc etching process. *First semester; one two-hour period weekly; one-fifth credit.* Professor PHILLIPS.

Elective for engineering students.

APPLIED MECHANICS

PROFESSOR MAURER, ASSISTANT PROFESSORS BURNSIDE AND MOORE, MR. M'CULLOUGH AND MR. WITHEY.

1. Statics. Treated, as are all the following courses, with special reference to the requirements of engineers. Resolution and composition of forces; center of gravity; principles of equilibrium with numerous applications. Graphic as well as algebraic methods are used. *First ten weeks of the second semester; M., Tu., W., Th., F., at* 10 *or* 11; *three-fifths credit.*
2. Mechanics of Materials. Simple tension, compression and shear; riveted joints; moment and shear diagrams; moment of inertia of plane figures; strength and stiffness of beams, columns and shafts; combined stress and resilience. *Last eight weeks of the second semester; M., Tu., W., Th., F., at* 10 *or* 11; *two hours credit. First nine weeks of the first semester; M., Tu., W., Th., F., at* 10 *or* 11, *and S., at* 8; *three-fifths credit.*
3. Dynamics. Relates principally to rigid bodies; laws of motion; translation; moment of inertia and rotation; combined translation and rotation; work and energy; impulse and momentum. *Last nine weeks of the first semester; M., Tu., W., Th., F., at* 10 *or* 11, *and S., at* 8; *three-fifths credit.*
4. Materials of Construction. Principally laboratory work; assigned readings and reports; also the preparation and manufacture of materials. *First and second semester. One or two-fifths credit.*
5. Advanced Mechanics of Materials. Inertia circle and ellipse; kern; beams of unsymmetrical section; curved beams; principle of least work; whirling shafts; revolving disks;

flat plates; thick cylinders, etc. *Second semester; two hours a week.* Professor MAURER.

Elective for students who have had course 2 or its equivalent.

6. Elements of Mechanics. A general course with emphasis on topics of special interest to the class. Algebra and trigonometry are prerequisites. *First semester; two hours a week.* Professor MAURER.

Elective for students in the College of Letters and Science.

7. Advanced Technical Mechanics. A review and extension of the principles and equations of Dynamics as presented in course 3 with applications especially to harmonic motion, vibrations and balancing of machines. *First semester; two hours a week.* Professor MAURER.

Elective for students who have had courses 1 and 3 or their equivalent.

8 Materials of Construction. Laboratory research.

8a. Materials of Construction. Iron and Steel. Comparative study of methods of testing machinery, and specifications. Open to seniors. *First semester; one-fifth credit.* Assistant Professor MOORE.

8b. Materials of Construction. Concrete. Plain: *second semester; one-fifth credit.* Open to juniors and seniors. Reinforced: *first semester; two-fifths credit.* Open to seniors who have had plain concrete. Mr. WITHEY.

8c. Materials of Construction. Brick. Complete tests of several varieties, including sand-lime brick, and comparison of results. Open to students who have had one semester of Mechanics 4. *Throughout the year; one-fifth credit.* Mr. MCCULLOUGH.

TOPOGRAPHIC AND GEODETIC ENGINEERING

ASSOCIATE PROFESSOR SMITH AND MR. OWEN.

1. Topographic Drawing and Mapping. This work includes work in pen and water color topography. *Throughout the year; 64 hours in draughting room. One-fifth credit each semester.*

2. Elementary Surveying. Johnson's *Surveying* and Smith's *Field Manual. Throughout the year; first half of first semester and last half of second semester; one-fifth credit.*

3. Elementary Surveying. A continuation of course 2, and includes the field and office work of a variety of practical problems in the use of the engineer's transit and level. Special emphasis is placed on methods of computation and arrangement of data. *First semester; recitations two hours a week; field work first nine weeks, 72 hours; four-fifths credit.*
4. Advanced Surveying. A continuation of course 3, and includes a study of the higher instruments of precision, and their use in topographic and hydrographic surveys. *Second semester; recitations two hours a week, first twelve weeks; field work, 56 hours, last eight weeks; three-fifths credit.*
5. Elementary Geodesy. Text: Johnson's *Surveying. Second semester; two-fifths credit.*
6. Trigonometrical Survey. Field work for illustrating course 5. Each year a portion of the region in the vicnity of Portage, Wisconsin, will be covered by an accurate triangulation, and also by a topographic and hydrographic survey. Survey begins the Monday of Commencement week, and continues for four weeks (240 hours). Professor SMITH, Mr. OWEN, and Mr. WILLIAMS.
7. Advanced Geodesy. Lectures, assigned readings, field work. Wright's *Adjustment of Observations. First semester; two hours a week.*

   Elective for students who have taken courses 2, 3, 4, and 5, or their equivalents.
8. Short Course in Surveying. Planned to meet the demands of Mechanical Engineering and Electrical Engineering students for a general study of the subject including the use of both transit and level. *Second semester; three-fifths credit.*
9. Rapid Topography. Adapted for training topographers for the United States Geological Survey. Use of the plane table and aneroid barometer in sketching topography.
10. Mining Surveying. Field and office work for an underground survey of the University system of tunnels. *Second semester; field work, 60 hours, two-fifths credit.*
11. City Surveying, Topographic and Cadastal. Lectures, assigned readings and field work. *Two hours a week.*

RAILWAY ENGINEERING

PROFESSOR PENCE, MR. WILLIAMS, AND MR. VAN ZANDT.

1. Railway Curves. An introductory course in simple curves. *First semester; 18 hours in class-room, 36 hours computation and field work.* Mr. VAN ZANDT.

2a. Railway Location and Construction. The theory of field and office work necessary to survey and construct a new railway line and to improve or reconstruct an old one. *First semester; twice a week.* Professor PENCE.

2b. Practice in Field and Office Work. In connection with course 2a. 108 *hours field and office work; three-fifths credit.* Mr. WILLIAMS.

3. Maintenance of Way, Train Control and Railway Signalling. *Second semester; twice a week.* Professor PENCE.

4. Railway Engineering. A short course in the above subjects, especially adapted to city and interurban railways, is offered as an elective to those who have had course 2 in Topographical Engineering. *First semester;* 18 *hours in class-room and* 36 *hours in the field and office.* Professor PENCE.

5. Railway Economics. A study of the history of railway development, railway geography, railway operation, and the economics of railway construction and improvement. *First semester;* 36 *hours in class-room.* Professor PENCE.

6. Railway Standards. Continuation of course 3. It is intended to give the student some degree of familiarity with designing various railway standards. *Twice a week in either semester.* .Professor PENCE and Mr. WILLIAMS.

7. Tunneling and Substructures. The various methods of tunneling, shaft sinking, ordinary and deep foundation work. Cost and methods of handling earth and rock excavation. Quarrying and use and care of explosives. *Second semester; once a week.* Professor PENCE.

9. Economic Study of the organization, construction, traffic and operation of the great American systems. *Second semester; three hours a week.* Professor PENCE.

For course in railway transportation, see courses under the head of Political Economy. This course is offered as an elective to seniors and graduates in Civil Engineering.

RIVERS AND CANALS

PROFESSOR MEAD.

1. River and Harbor Improvement and Canal Construction. *Second semester; once a week.*

ROADS AND PAVEMENTS

ASSOCIATE PROFESSOR SMITH.

1. Location and Construction of Highways and City Streets. *First semester; twice a week.*

HYDRAULIC AND SANITARY ENGINEERING

PROFESSOR MEAD, MR. DAVIS, MR. HARZA, AND MR. LAWRENCE.

1. Hydraulics. Hydrostatics and the flow of water over weirs, and through orifices, pipes and open channels. *One semester; two hours a week.* Mr. DAVIS and Mr. HARZA.
2. Hydraulic Laboratory. Elementary course. 36 *hours in laboratory.* .Professor MEAD, Mr. DAVIS, Mr. HARZA, and Mr. LAWRENCE.
3. Hydraulic Laboratory. Advanced experimental and thesis work. Professor MEAD.
4. Water Power. Stream flow, hydraulic power development and test of motors and appliances. *First semester; three times a week.* Professor MEAD.
5. Hydraulic Machinery. Water wheels, motors, pumps and other machines. *Second semester; twice a week.* Professor MEAD.

10. Hydrology. Physiography, hydrogeology, and hydrography in relation to water power, water supply and sanitary works. *Second semester; twice a week.* Professor MEAD.
11. Water Supply Engineering. *First semester; three times a week.* Professor MEAD.
12. Sewerage, Drainage, and Irrigation. *Second semester; twice a week, or three times a week for those who desire special instruction in any of these subjects.* Professor MEAD.
13. Hydraulic Design. Design of various features of hydraulic and sanitary works. *One or both semesters; four hours draughting a week.* Professor MEAD.

STRUCTURAL ENGINEERING

PROFESSOR TURNEAURE, ASSISTANT PROFESSOR BURNSIDE, MR. WILLIAMS, AND MR. KINNE.

1. Structural Details. The designing of simple forms of members and of joints in wood and iron, and of wooden roof and bridge trusses. *First semester; draughting four hours a week.* Mr. KINNE.
2. Masonry Construction. Theory governing the design of masonry structures and foundations. *Second semester; two hours a week in class-room.* Mr. WILLIAMS.
3. Engineering Architecture. Treats of those principles of artistic design applicable to engineering structures, especially those of masonry. *Second semester; four lectures in connection with course* 4. Mr. WILLIAMS.

4a. Masonry Arches. A discussion of the theory of the stability of masonry arches followed by the complete design of an arch including working drawings. *Second semester; two-fifths study.* Mr. WILLIAMS.

4b. Masonry Dams and Stereotomy. A design for a high masonry dam is made, followed by several problems in stereotomy. *First semester; three-fifths study.* Mr. WILLIAMS.

5a. Bridge Stresses. Simple bridge trusses. *Second semester; three times a week.* Professor TURNEAURE and Mr. KINNE.

5b. Bridge Stresses. Suspension, swing, cantilever, and arch bridges. *First semester; twice a week.* Professor TURNEAURE.

6. Bridge Design. Theoretical considerations. *First semester; once a week.* Professor TURNEAURE.
7. Design and Estimates. In this course each student makes a complete design of one structure of each class mentioned below, prepares detail drawings, and makes an estimate of the quantity of material and cost; complete working drawings are made of at least one structure.

7a. Roof Trusses, and Plate Girders. *Second semester;* 108 *hours in draughting room.* Mr. KINNE.

7b. Riveted and Pin-Connected Trusses. *First semester; with course* 6 *makes a four-hour study.* Mr. KINNE.

7c. Swing Bridges. Design of truss, turntable, and operating machinery. *Second semester;* 72 *hours in draughting room.* Professor TURNEAURE.

Elective for seniors and graduates in Civil Engineering.

8. Advanced Theory and Experimental Work. Higher structures, secondary stresses, and tests on bridges under moving loads. *One or two semesters; two hours a week.* Professor TURNEAURE.

Open to seniors and graduates.

9. Structural Design. A short general course in the designing of roofs and buildings designed for students in mechanical and electrical engineering. *Second semester; three times a week.* Mr. KINNE.

10. Reinforced Concrete Structures. Theory and design. *Second semester; twice a week.* Professor TURNEAURE.

11. Building Construction. Elementary course open to all engineering students. *One or both semesters; two hours a week.* Assistant Professor BURNSIDE.

STEAM ENGINEERING

PROFESSOR BULL, ASSISTANT PROFESSOR THORKELSON, MR. HUELS, AND MR. SHEALY.

1. Thermodynamics. This course covers those principles of the mechanical theory of heat which are preliminary to the study of the various kinds of heat engines. *First semester, first ten weeks;* 50 *hours in classroom.* Assistant Professor THORKELSON.

2. Theory of Heat Engines. The study is partly given by lectures; for a large part of the work Peabody's *Thermo-dynamics is used. First semester, last eight weeks;* 40 *hours in class-room.* Assistant Professor THORKELSON.

3. Steam Boilers. The general subject of combustion and its application to steam boilers. H. de B. Parson's *Steam Boilers.* The study is partly taught by lectures. *Second semester, last nine weeks;* 45 *hours in class-room.* Assistant Professor THORKELSON.

Open to students who have had either course 1 or course 6.

4. Valve Gears of Steam Engines. Peabody's *Valve Gears for Steam Engines. Second semester, first nine weeks;* 18 *hours in class-room,* 54 *hours drafting.* Assistant Professor THORKELSON.

5. Design of the Steam Engine. Taught by lectures, supplemented by the work in the draughting room, where each student is required to work out a complete problem. *First*

and second semesters; class work two hours a week, draughting six hours a week. Professor BULL and Assistant Professor THORKELSON.

6. Short Course in Thermodynamics, the Steam Engine, and the Steam Boiler. *First and second semester; (twice a week).* Mr. HUELS and Mr. SHEALY.
7. Course in Steam Engineering for Civil Engineers. *First semester; two hours a week.* Mr. HUELS and Mr. SHEALY.
8. Heating and Ventilation. *First semester; three times a week.* Professor BULL.
9. Gas and Gasoline Engines. Treated both from a theoretical and experimental point of view. *Three times a week throughout the year. First semester,* 18 *hours in class-room,* 72 *hours in draughting room. Second semester,* 54 *hours in class-room.* Professor BULL.
10. Advanced Course in Steam Engineering. Lectures and assigned readings. *First and second semesters; at hours to be arranged.* Professor BULL.

    Open to graduate students and to those who have completed courses 1, 2, 3, 4, and 5 in Steam Engineering.
11. Compressed Air and Its Application. *Second semester; two hours a week.* Assistant Professor THORKELSON.

    Open to students who have had a course in thermodynamics.
12. Steam Turbines. Lectures on theory and design. *Throughout the year; twice a week.* Professor BULL.

    Open to students who have had a course in thermodynamics.
13. Refrigeration and Refrigerating Machinery. The principles and methods of producing low temperatures artificially are studied together with the construction, operation and application of refrigerating machinery. *Second semester; two hours a week.* Assistant Professor THORKELSON.

    Elective for all students who have had Thermodynamics.

MECHANICAL LABORATORY

PROFESSOR RICHTER, MR. HUELS, MR. ATWOOD, AND MR. SHEALEY.

1. Calibration of Instruments, and the determination of efficiencies of simple machines. *Second semester; three hours a week.*

   Required of juniors in Mechanical and Electrical Engineering.

2. Determination of the Efficiencies and Losses occurring in the steam boiler, and steam, gas and gasoline engines, and air compressors. Determination of power plant losses and efficiencies. *First semester; three hours a week.*

   Required of seniors in Mechanical and Electrical Engineering.

3. Abridged Course. Arranged for Civil Engineering students. *Three hours a week during the last twelve weeks of the first semester.*

   Required of juniors in Civil Engineering and the Electro-Chemical course, and seniors in Sanitary Engineering. *Four hours a week.*

4. Superheated Steam, Gas and Producer gas engines. Efficiencies and construction of refrigerating plants. Fuel and gas analysis. *Second semester; two hours a week.*

   Required of seniors in Mechanical Engineering.

5. Transmission of Power. Determination of losses in belt and similar transmission. Screw and gear friction, oil testing, etc., illustrating problems in the design of machinery. *First semester; two hours a week.*

   Required of juniors in Mechanical Engineering.

6. Calibration of Instruments. Determination of efficiencies and losses occurring in heat engines and their auxiliaries. Power station losses and efficiencies. The above is followed by work along the line the student wishes to follow. Gas Engineering students will pay particular attention to the prime movers involved in or using a product of gas manufacture. *First semester; five hours a week. Second semester; three hours a week.*

   Required of juniors and seniors in Chemical Engineering.

7. Determination of the constituents of air in rooms and buildings. This course must be accompanied by course 8 in Steam Engineering. *First semester; two hours a week.*

8. Advanced Laboratory Work. Advanced courses will be offered in any of the different lines of experimental work, to conform with the special line of work the student wishes to follow. Stress will be laid on original research and investigation. *Tu., Th., at hours to be arranged.*

   Open to graduate students and to those who have completed the required courses in the line they wish to follow.

MACHINE DESIGN

PROFESSOR MACK, MR. VOSSKUEHLER, AND MR. KEOWN.

1. Mechanism. The relative motions of machine parts, including belting, toothed gears, cams, chains, ratchets and linkages. *Repeated each semester; one lecture, one recitation and four hours drafting a week.* Prerequisite Mechanical Drawing 1 and 2. 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 draughting course conforming to the requirements of modern draughting practice. This course is a condensation of courses 3 and 4, arranged for the electrical engineering students. Prerequisite, Machine Design 1, Mechanics 1, 2. *Throughout the year. First semester; one recitation and four hours drafting a week and an occasional lecture. Second semester; one recitation and three hours drafting a week.* Mr. VOSSKUEHLER.
3. Machine Design for Mechanical Engineering. A continuation of mechanical drawing and Kinematics as applied to the making of shop drawings. Problems in the determination of sizes and proportions involving empirical and elementary mathematical methods. A study of the application of the principles of mechanics to the design of machine elements and complete machines. Prerequisite, Machine Design 1, Mechanics 1 and 2. *Throughout the year; one lecture, one recitation, and eight hours drafting a week.* Professor MACK and Mr. VOSSKUEHLER.
4. Machine Design for Chemical Engineering. A study of and practice in the design of pumping, filtration, sugar, oil, and other machinery used in the chemical engineering industries. Prerequisite, three-fifths from Machine Design, and first semester of Machine Design 2. *Second semester; one lecture and three hours drafting a week.* Mr. VOSSKUEHLER.
5. Machine Design. Continuation of course 3, including the design of special and automatic machinery. A study is made of manufacturing economics and the influence of various methods of construction, shop facilities, special tools and processes, methods of remuneration of labor, etc., on

costs. The subjects of cost estimation, inventory and valuation are treated in detail. A complete design and estimate of a manufacturing plant for a given output is made by each student. Lectures on the business organization and works management of manufacturing companies. *Throughout the year; two hours class work and six hours drafting a week.* Professor MACK, Mr. VOSSKUEHLER, and Mr. STEEN.

6. Patent Office Drawing. A course giving practice in the preparation of drawings required by the U. S. Patent Office. *One-fifth credit. Time arranged upon consultation.* Professor MACK.

   Open to all who have had course 1 in Mechanical Drawing.

7. Special and Automatic Machinery. *Four hours drafting a week.* Mr. KEOWN.

   Students in Civil, Sanitary, or General Engineering electing special work in Machine Design, should have the same prerequisites as noted in course 5.

APPLIED ELECTROMAGNETISM AND THE CONSTRUCTION OF DYNAMOS

ASSOCIATE PROFESSOR BEEBE, ASSISTANT PROFESSOR SHUSTER, MR. ELLIOTT, MR. LOEW, MR. PRICE, MR. WATSON, MR. WICKENDEN, AND MR. FUSSELL.

1. Electromagnets and Dynamos. A discussion of the simple forms of electromagnets; the development of the laws of magnetization by electric currents; the laws of simple magnetic circuits and the windings of electromagnets; the practical design, construction, management, and testing of dynamos. *Throughout the year; M., W., F., at* 8, 11, 12. Mr. WATSON and Mr. LOEW.
2. Testing Direct-Current Dynamos. Laboratory work with generators, motors, and accessory apparatus. For undergraduates. *Throughout the year.* Assistant Professor SHUSTER, Mr. ELLIOTT, Mr. WICKENDEN, and Mr. FUSSELL.
3. Electrical Machinery and Appliances. A short course in the theory, construction, management, and testing of direct-current generators, motors, and sundry appliances. *First semester; M., W., F., at* 9. Associate Professor BEEBE and Mr. LOEW.
4. Design and Construction of Large Direct-Current Dynamos. By seminary method. This course includes the working

out of complete designs. *Throughout the year; either a three or five-hour course.* Mr. WATSON.

Open to graduates and others who have had the equivalent of courses 1 (or 3) and 2.

ALTERNATING CURRENTS AND ALTERNATING-CURRENT MACHINERY

PROFESSOR JACKSON, ASSOCIATE PROFESSOR BEEBE, ASSISTANT PROFESSOR SHUSTER, MR. ELLIOTT, MR. LOEW, AND MR. PRICE.

1. Theory and Application of Single-Phase Alternating Currents. The theory of the generation and utilization of alternating electric currents; the design, construction, and operation of single-phase alternating-current dynamos and transformers; and methods for testing alternating-current machinery. *Throughout the year.* Professor JACKSON, Associate Professor BEEBE, and Mr. LOEW.

   For seniors and graduates.

2. Testing Alternating-Current Machinery and Appliances. The testing and operation in the laboratory of single-phase alternating-current generators, motors, transformers, meters, and other appliances. *Throughout the year.* Assistant Professor SHUSTER, Mr. ELLIOTT, Mr. WICKENDEN, and Mr. PRICE.

   For seniors and graduates.

3. Elementary Polyphase Currents. Following the treatment in Jackson's *Alternating Currents and Alternating-Current Machinery. Second semester; twice a week.* Associate Professor BEEBE.

   Open to students who have had the equivalent of courses 1 and 2.

4. Testing Polyphase Machinery and Appliances in the Laboratory. *Second semester; once a week.* Assistant Professor SHUSTER and Mr. ELLIOTT.

   Open to students who are pursuing or have completed course 3.

6. Advanced Course in Alternating Currents (including Polyphase Currents and Machinery). Lectures treating in detail the properties of alternating-current circuits and machinery including the effects of resonance, protecting the circuits from lightning, etc. The methods of vector alge-

bra are demonstrated and used throughout the course. *Throughout the year; Tu., and Th., from* 10 *to* 11:30. *Two* hours laboratory work may be elected in addition. Professor JACKSON, Associate Professor BEEBE, and Assistant Professor SHUSTER.

Open to graduates and others with requisite preparation.

7. Elementary Applied Alternating Currents. A short course in the theory, construction, management, and testing of alternating-current machinery and appliances. *Second semester; M., W., F.* Associate Professor BEEBE and Mr. LOEW.

Open to all who have completed the equivalent of one semester of Applied Electromagnetism 3.

ELECTRICAL INSTALLATIONS

PROFESSOR JACKSON, ASSOCIATE PROFESSOR BEEBE, ASSISTANT PROFESSOR SHUSTER, MR. POTTER, MR. WATSON, AND MR. WICKENDEN.

2. Telephones and Telegraphs. The construction, testing, maintenance, and operation of lines and appliances used in telephony, telegraphy, and electric signalling. For undergraduates. *Second semester; three times a week.* Mr. POTTER and Mr. WICKENDEN.
3. Electrical Testing. Laboratory practice in insulation and breakdown tests, location of faults, testing insulators, etc. Study of the phenomena produced by high pressures on electric circuits. *First semester; twice a week.* Assistant Mr. POTTER and Mr. WICKENDEN.

Open to seniors and graduates.

4. Electric Lighting and Transmission of Power. Theory and practice in the construction and operation of lines. The construction of appliances for the transmission and distribution of electric power. *Second semester; three times a week.* Assistant Professor SHUSTER.
5. Graduate Conference. A conference of seminary for the detailed study of engineering problems.

Open to seniors and graduates.

6. Electric Railways. The road-bed, rolling stock, electric circuits, and power plants. Location, construction, and operation. *Second semester; three times a week.* Assistant Professor SHUSTER.

Open to seniors and graduates.

7. Industrial Applications of Electricity. The applications of electricity to industrial uses not specifically taken up in other courses. Mining and quarrying, applications to machine tools, etc *First semester; twice a week.* Assistant Professor SHUSTER.

Open to seniors and graduates.

8. Central Stations. Design, management, and estimates. *First semester; three times a week; second semester, twice a week.* Assistant Professor SHUSTER.

Open to seniors and graduates.

9. Inspection Tours. An inspection tour to large industrial centers is made during the Easter recess. Each student is expected to accompany one of these parties during the last two years of his course or otherwise gain the equivalent thereof. The tours comprise visits to Milwaukee, Chicago, Pittsburg, Niagara Falls, and other manufacturing centers, for the purpose of inspecting manufacturing plants and great engineering works under operation or construction.

10. Illumination and Photometry. The distribution and measurement of light and comparison of sources of illumination. Manufacture and use of electric lamps. *First semester; two hours in class-room. One hour or two hours per week in laboratory.* Mr. POTTER and Mr. WICKENDEN.

Open to seniors and graduates.

11. Elements of Electrical Engineering. A general course particularly designed for students in Civil and Chemical Engineering. *Throughout the year; Tu., Th., at* 9. Associate Professor BEEBE and Mr. LOEW.

Open to juniors and seniors.

APPLIED ELECTROCHEMISTRY AND ELECTRO-METALLURGY

PROFESSOR BURGESS, DR. WATTS, AND MR. KOWALKE.

1. Laws, Principles, and Theories Involved in Electrolytic Phenomena, and their application in the electro-deposition of metals for plating, electrotyping and refining, and in electrochemical generation and storage of electrical energy. Class-room and laboratory instruction. Must be preceded by courses in chemistry. *First semester; five times a*

week. Associate Professor BURGESS, Dr. WATTS, and Mr. KOWALKE.

Required of seniors in Applied Electrochemistry. Open to seniors and graduates.

2. Industrial Applications of Electrochemistry. A study of the various electrochemical and electrothermal products and processes which have become of technical importance dealing especially with the electric furnace. *Second semester; twice a week in class, and two or more times in laboratory.* Associate Professor BURGESS, Dr. WATTS, and Mr. KOWALKE.

Required of seniors in Applied Electrochemistry. Open to all students who have completed course 1.

3. Laboratory Work. Lines of experimental investigation assigned by instructors, together with occasional conferences and written dissertations. *Throughout the year; three or five times a week.* Associate Professor BURGESS, Dr. WATTS, and Mr. KOWALKE.

Elective for students who have completed course 1 and 2 and the course in Theroretical Electrochemistry.

4. Short Course, dealing with principles of electrochemistry and their various industrial application. *First semester; once a week in class and one or more periods per week in laboratory. Open to juniors and seniors.* Professor BURGESS and Dr. WATTS.

6. Batteries, Construction testing, and operation of primary and storage cells. Open to all juniors and seniors. *Second semester; one recitation and one or more laboratory periods a week.* Professor BURGESS and Dr. WATTS.

CHEMICAL TECHNOLOGY

PROFESSOR BURGESS, ASSISTANT PROFESSOR DICKERMAN, MR. POTTER, AND MR. KOWALKE.

1. Chemical Machinery and Appliances. General operations, such as crushing, grinding, separation by the wet and dry methods, filtration, distillation; problems involving the application of thermodynamic principles to evaporation, drying, and refrigeration; various types of apparatus used for carrying on these processes. *Second semester; two hours a week.* Professor BURGESS.

2. Technical Fuel, Gas, and Oil Analysis. Laboratory instruc-

tion in the technical analysis of fuels, illuminating and fuel gases, products of combustion, etc. *First semester; two periods a week.* Assistant Professor DICKERMAN and Mr. KOWALKE.

3. Technology of Fuels. Lectures relating to the production, properties, and uses of solid, liquid and gaseous fuels, and a consideration of refractory materials and furnace construction. *Second semester; two times a week.* Assistant Professor DICKERMAN.

4. Chemical Manufacture. Instruction and laboratory practice in the preparation of chemical products on a scale sufficiently large to involve the use of filtering, evaporating, centrifugal, and other chemical machinery, and to obtain data upon which the design of a plant may be based. The design of a plant for the production of one or more materials, with an analysis of costs is required of each student. *Second semester; five periods a week.* Assistant Professor DICKERMAN and Mr. KOWALKE.

5. Industrial Chemistry. Class-room work relating to the manufacture of the more important chemical products such as acids, alkalis, cements, fertilizers, glass, paper, etc.; the equipment of plants, and problems connected with the same chemical resistance of materials. *First semester; three periods a week.* Assistant Professor DICKERMAN.

6. Thermal Efficiencies. A study of heat utilization and losses in chemical and metallurgical reactions involving the use of high temperatures. The purpose of this course is to give instruction in the various types of furnaces, their design and operation. *First semester; two times a week.* Professor BURGESS.

7. Illumination and Photometry. A laboratory course in the measurement of the illuminating power of gas and oils. *Second semester; once a week.* Mr. POTTER.

8. Manufacture and Distribution of Gas. A class and laboratory study of the development of the gas industry, the chemistry of gas manufacture, and the apparatus, and problems involved in the manufacture, distribution and consumption of gas for fuel, power, and illuminating purposes. *Throughout the year.* (Given in 1908.)

ENGINEERING CONTRACTS AND SPECIFICATIONS

PROFESSOR PENCE.

1. The law of contracts as applied to engineering work, together with the typical forms of specifications governing both the commercial and technical features of engineering construction, and of all the related documents pertaining to engineering contracts. *Second semester; twice a week for nine weeks.*

SHOP WORK

SUPERINTENDENT STEEN, MR. KATELEY, MR. KRATSCH, MR. LOTTES, AND MR. MCINTOSH.

1. Bench Work in Wood. *Both semesters; one-fifth credit.*
2. Wood, Lathe, Pattern, and Foundry Work. *Both semesters; one-fifth credit.*
3. Bench Work in Iron. Instruction in the use of the chisel, file and scraper. *First semester; one-half fifth credit.*
4. Pipe Fitting, Maintenance of Belting, Babbiting, and Soldering. *First semester; one-fifth credit.*
5. Lathe Work in Metals. *First semester; two-fifths credit* in Mechanical Engineering course; *one-fifth credit* in Electrical Engineering course.
6. Planing and Milling. *Both semesters; one-fifth credit.*
7. Forge Work. *First semester; one and one-half fifths credit* in Mechanical Engineering course; *one-fifth credit* in Electrical Engineering course.
8. Chipping and Filing, Maintenance of Belting, and Soldering. *First semester; one-fifth credit.*
9. Tool Making, Grinding, Jigs and Fixtures. *First semester; two-fifths credit.*
10. Turret Lathe Operation. Forms of tools and methods of operation for production of duplicate parts. *Second semester; one-fifth credit.*
11. Machine Construction. *Both semesters; four-fifths credit* in Mechanical Engineering course; *two-fifths credit* in Electrical Engineering course.
12. Advanced Foundry Practice. Loam, Sweep, and Dry Sand Molding; Management of Cupola. *Second semester; one-fifth credit.*
13. Elective for Civil Engineering Students. Wood work; trusses, trestle work, and concrete molds. Forge practice; forg-

ing, welding, and tool dressing. Machine shop; lathe work, drilling, use of hand tools, punching, riveting, and instrument repairs. *Second semester; three-fifths credit.*

14. Elective for Chemical Engineering students. (Wood work; scaffolding, machine framing, concrete molds.) Forge practice; forging, welding, brazing, soldering, and tool dressing. Machine shop; lathe work, drilling, use of hand tools, pipe fitting, maintenance of belting and shafting, sheet metal construction, lead and copper working. *Second semester; three-fifths credit.*

Required for Mechanical Engineering Course, Nos. 1, 2, 3, 4, 5, 6, 7, 9, 10, 11, 12; total, 16 fifths.

Required for Electrical Engineering Course, Nos. 1, 2, 5, 6, 7, 8, 11; total, eight-fifths.

Note:—Four-fifths in each of the above lists of required courses must be taken during vacation periods. Opportunity is offered to do this work in the University shops, but credit for same may be obtained for not less than four weeks' work in industrial establishments when a satisfactory equivalent can be obtained.

THE COLLEGE OF LAW

FACULTY

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
HARRY S. RICHARDS, LL. D., Dean, and Professor of Law.

ROBERT M. BASHFORD, A. M., LL. B., Professor of Law.
JAIRUS H. CARPENTER, LL. D., Jackson Professor of Law. (Emeritus.)
WALTER W. COOK, A. M., LL. M., Professor of Law.
EUGENE A. GILMORE, A. B., LL. B., Professor of Law.
BURR W. JONES, A. M., LL. B., Professor of Law.
JOHN M. OLIN, A. M., LL. B., Professor of Law.
HOWARD L. SMITH, A. B., LL. B., Professor of Law.
H. CLAUDE HORACK, Ph. B., LL. B., Assistant Professor of Law.

History

Plans for the organization of the College of Law 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. At the time of its organization the College occupied rooms in the capitol building.

It now occupies a building especially erected for it in 1893.

Objects of the Course

The College of Law 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. In addition to the regular law courses, other departments of the University offer courses treating of law in its more general aspects, which are open to law students.

Admission

Students applying to the College of Law 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 College of Law as candidates for a degree must satisfy the general requirements of the University (see p. 62), and in addition, must present credits equivalent to the Freshman and Sophomore years in the College of Letters and Science. The above requirements may be satisfied by work done in any reputable college or university. Graduates of the regular course in the several State Normal schools of Wisconsin will be admitted as candidates for a degree.

Applicants for admission who can satisfy the general entrance requirements will be admitted as special students and entitled to all the privileges of the school in the way of instruction. An opportunity is thus afforded to prepare for the bar examinations in this and other states. In exceptional cases, special students may become candidates for the degree. (See Requirements for Graduation.)

The examinations are conducted at the same time and by the same members of the Faculty as the examination of candidates for admission to the College of Letters and Science.

In addition to the other entrance requirements, all candidates for admission to the College of Law, 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 p. 67), 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 13-14, and September 24-25, 1907, beginning at 9 o'clock.

While students are admitted as above, yet those who are able to satisfy only the minimum requirements for admission will probably find it difficult to do the work required in a satisfactory manner.

Advanced Standing

SECOND YEAR

Candidates complying with the general requirements for admission to the College as above set out, will be admitted to the second year on passing satisfactory examinations in the subjects of the first year. Students who have graduated from the College of Letters and Science, and who while students in that college have elected and successfully completed ten hours a week of law study, will be admitted to the second year. To meet the above requirement the student must elect seven hours of work in the subjects of the first year of the College of Law and three hours in law courses offered in the College of Letters and Science. The courses from which elections can be made in both colleges to be designated by the faculty of the College of Law.

THIRD YEAR

Candidates complying with the general requirements for admission to the College as above stated will be admitted to the third year on passing satisfactory examinations in the subjects of the first and at least twenty semester hours of the work of the second year, and in addition thereto presenting certificates signed by the executive officer of a law school of good standing having a three years' course, showing at least one year's study as a regularly enrolled student of such school.

Candidates will be given equivalent credit for satisfactory work done in other law schools in good standing having a three years' course, upon presenting properly authenticated certificates of such work.

Time of Examinations

Examinations for advanced standing will be held at the Law Building on Monday, Tuesday, and Wednesday of the opening week of the University year. All persons who intend to take these examinations must notify the Dean of such intention, not later than September 15th, stating the subjects in which an examination is desired. Special examinations will not be given.

Time of Opening

Lectures begin on the opening day of the semester. All students are required to enter at that time. Entrance after that date will be permitted only for good cause shown.

Graduation

The degree of Bachelor of Laws will be conferred upon all candidates of good moral character and of at least twenty-one years of age, who have complied with the following conditions:

(1) Credit for at least sixty-six term hours (a term hour 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 College. Students who have successfully passed the subjects of the first year, under the regulations as to advanced standing, are not required to be in residence at a law school more than two years.

(3) Preparation and presentation of a satisfactory thesis of not less than 3,000 words on some legal topic selected by the Faculty.

(4) Special students who have completed sixty-six term hours and who have been in residence for three years may, provided they have displayed unusual ability in their work, by special action of the Faculty, be recommended for a degree.

Admission to the Bar

The statutes of the State provide that any resident graduate of the Law department of the University of Wisconsin shall be admitted to the bar of any court upon the production of his diploma, and may be admitted to tthe 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 members of the graduating class, on motion of a member of the Faculty, to be admitted to the Supreme Court of the State, and to the district and circuit courts of the United States, immediately upon graduation. This entitles them to admission to the bar of any court of record in Wisconsin and all federal courts.

COURSES OF INSTRUCTION

The courses in instruction are arranged to present, as far as ossible, the fundamental topics of the law during the first year, and the specialized subjects during the second and third years.

FIRST YEAR

COMMON LAW PLEADING. (1) Selected cases and Williston's edition of *Stephen on Pleading. One hour a week; first semester.* (Omitted in 1907-08.) Professor COOK.

History and development of common law actions; theory of common law pleading, and its essential principles with special reference to modern code procedure.

COMMON LAW PLEADING. (2). *Two hours a week; second semester.* (Ames' *Cases on Common Law Pleading* (first edition).) Professor COOK.

This course will deal with demurrers, general and special, pleas in discharge and excuse, by way of traverse, general issue, specific and special traverses, replication *de injuria*, duplicity, departure, new assignment. Relationship between common law pleading and pleading under modern codes.

Contracts. Keener's *Cases on Contracts. Three hours a week; both semesters.* Professor RICHARDS.

The design of this course is to develop the general principles of the law of contract as preliminary to the study of specialized forms of legal obligations that have their foundation in contract and which are treated in separate courses. The course is divided into two parts, (a) and (b), which are continuous, and should preferably be taken in the order given. (a), given the the first semester, deals with the principles of mutual assent, consideration, the rights and liabilities of third persons. (b), given the second semester, deals with the performance, discharge, and rescission of contracts.

Criminal Law and Procedure. Chaplin's *Cases. Three hours a week; first semester.* Professor SMITH.

This course deals especially with the common law of crimes, and procedure with reference thereto, though with constant reference to statutory modification thereof.

History of Law and Procedure Cases and assigned readings. *Two hours a week; first semester.* (Omitted in 1906-07.) Professor COOK.

This course deals with the history and development of English and American legal institutions, including the courts, the proceedings in actions at common law and in equity, and the modes of trial. The relationship between substantive and remedial law will be discussed as well as the relationship between ancient and modern remedial law.

Personal Property. Grays's *Cases. One hour a week; first semester.* Assistant Professor HORACK.

The distinction between real and personal property is indicated. The nature and acquisition of rights in personal property is considered, with particular reference to the topics of original acquisition, accession, confusion, also the transfer of rights in personal property by gifts, possession, judicial process, bailment, pledge, and finding.

Persons. Selected Cases. *One hour a week; both semesters.* Professor JONES.

This course presents the rights and liabilities of persons laboring under legal disabilities due to peculiar conditions, and embraces the special topics: husband and wife, parent and child, guardian and ward, master and servant, infancy, and insanity.

Property I. Tiedeman *on Real Property. One hour a week, both semesters.* Professor OLIN.

The course in real property extends throughout two years. During the first semester this course deals with the nature of real property, tenure and seisin, the ownership of land, including the extent or duration of estates, equitable ownership, and future estates.

During the second semester the subject of future estates is completed, followed by concurrent ownership, estates and interests arising from marriage, rights of enjoyment incident to ownership.

Torts. *Cases on Torts.* Ames, Vol. I; Smith, Vol. II. *Two hours a week; both semesters.* Professor GILMORE.

This course is divided into two parts, (a) and (b), given during the first and second semesters respectively. The course is continuous, and should be taken in the order indicated. The first part of the course deals with the subject of rights and duties in general, with a particular study of the right of personal security, personal liberty, and of property and the invasions of these rights; also with the doctrine of legal cause, the nature of negligent conduct, and the extent of liability therefor.

The second part of the course deals with the particular wrongs of conversion, defamation, malicious prosecution, etc.

SECOND YEAR.

Administrative Law. I. Goodnow's *Cases on Administrative Law. Two hours a week; first semester.* Professor COOK.

This course deals with the law of officers including the formation and termination of the official relation; the rights, duties and liabilities of officers, and the remedies of individuals in the case of wrongful acts on the part of the administrative officials.

Administrative Law II. Smith's *Cases on Municipal Corporations. Two hours a week; second semester.* Professor COOK.

This course deals with the law of public corporations, including municipal and quasi-minicipal corporations.

Administrative Law III. Selected Cases. *Two hours a week; first semester.* (Omitted in 1906-07 and given in alternate years with Administrative Law I.) Professor COOK.

This course covers the law of extraordinary legal remedies: mandamus, quo warranto, prohibition, certiorari, habeas corpus. The subject will be treated specially from the point of view of the use of these writs in controlling administrative officials.

Agency. Wambaugh's *Cases on Agency. Two hours a week; first semester.* Professor GILMORE.

The nature of the relation of principal and agent, master and servant, the agent's power to subject his principal to liability in tort and contract, the agent's responsibility to third persons, parties to writings, undisclosed principal, the mutual rights and duties of principal and agent, delegation by agent, ratification, termination of the relation.

Bankruptcy. Williston's *Cases on Bankruptcy. Two hours a week; second semester.* (Omitted in 1907-08). Professor COOK.

This course deals with bankruptcy and insolvency laws, including a special study of fraudulent conveyances.

Code Pleading I. Wisconsin Statutes and Decisions. *Two hours a week; second semester.* Professor BASHFORD.

The course in code pleading is designed to cover the whole field of pleading under the codes, both in law and equity. The student will be required to draw the papers necessary in the course of framing an issue for trial. The work of the class room is supplemented by the practice court throughout the year.

Commercial Paper. Huffcut's *Cases on Negotiable Instruments. Two hours a week; second semester.* Professor SMITH.

This course covers the general principles governing bills of exchange, promissory notes, etc., and the negotiable instrument law, so far as it modifies or illustrates them.

Corporations. Smith's *Cases on Corporations. Two hours a week; both semesters.* Professor RICHARDS.

This course deals with the general nature of corporations, including the methods of creation, rights and liabilities of stockholders, express and implied powers, duties and powers of directors, rights of creditors, liability of corporation for *ultra vires* acts, foreign corporations, legislative control, etc.

Damages. Beale's *Cases on Damages. Two hours a week; second semester.* (Omitted in 1907-08.) Professor RICHARDS.

This course deals with the respective functions of the court and jury in awarding damages, the theory of relief, the rules applied by the courts in regard to compensatory and punitive damages, direct, and consequential damages, avoidable consequences, mitigation, and a study of special groups of cases in contact and tort where circumstances make the general rules inapplicable.

Equity I. Keener's *Cases in Equity, Vol. I. Three hours a week; first semester.* Professor SMITH.

The entire course in equity jurisdiction occupies three hours a week for three semesters.

In the first semester will be taught the nature and general outlines and limitations of the jurisdiction, as based upon inadequacy of legal remedy, with something of its history and development, and its application to torts (waste, trespass, nuisance, etc.).

Equity II. Keener's *Cases on Equity, Vol. II. Three hours a week; second semester.* Professor SMITH.

This course is a continuation of Equity I, and deals with the specific enforcement of contracts.

Equity Pleading. Fletcher's *Equity Pleading and Practice. Two hours a week; first semester.* Professor BASHFORD.

The object of this course is to impart a thorough knowledge of equity pleading and practice as pursued in the federal courts and as applied in the state courts, especially with reference to the influence of equity procedure in framing and interpreting code pleading and practice in Wisconsin and other states.

Evidence I. Jones on *Evidence*, and selected cases. *One hour a week; both semesters.* Professor JONES.

The courses in evidence are continuous and extend through the second and third years. During the second year the following subjects are considered: The nature of evidence; presumption; judicial notice; relevancy; burden of proof; best evidence; admissions; hearsay and opinion evidence.

Insurance. Wambaugh's *Cases on Insurance. Two hours a week; first semester.* Assistant Professor HORACK.

This course deals with the general principles underlying Insurance contracts of all kinds, special attention being given to fire and life insurance. Insurable interest; concealment, representations, and warranties; causes of invalidity; peril insured against. Consideration in detail of the provisions of the Wisconsin Standard Fire Insurance Policy.

Property II. Tiedeman on *Real Property*, and selected cases. *One hour; both semesters.* Professor OLIN.

The course continues the subject as concluded in the first year, by which it must be preceded, and includes, during the first semester, a consideration of the rights to dispose of land not based on ownership, of powers, convenants running with the lands, restrictions, rents, public rights in lands, voluntary transfers *inter vivos*. During the second semester the course covers the transfer of right in land by will, dedication, adverse possession, prescription, accretion, estoppel, escheat, and forfeiture, restrictions on the freedom of transfer; liens, including mortgages.

Public Service Companies. McClain's *Cases on Carriers* and selected cases. *Three hours a week; second semester.* Professor GILMORE.

This course covers work usually included under the subject of Carriers. It deals with the nature of public calling, its obligations and rights, rights and duties of common carriers, telephone and telegraph companies, light and water companies, inns and warehouses.

Sales. Williston's *Cases on Sales. Three hours a week; first semester.* Assistant Professor HORACK.

Contracts resulting in the transfer of title to personal property. Subject matter of sale; sale of specified goods; sale of goods not specified; conditional sales; transfer of title through bills of lading; C. O. D. sales; effect of fraud; liens and their enforcement; stoppage in transitu; warranties, and remedies for breach of warranty; statute of frauds.

Trusts. Ames' *Cases on Trusts.* 2nd edition. *Three hours a week; first semester.* Professor COOK.

This course includes a consideration of the essential nature and incidents of the trust relationship, the methods of creating trusts, classification of trusts, and the rights and obligations of the trustee and beneficiary with reference to each other and to third persons.

THIRD YEAR

Admiralty. Ames' *Cases on Admiralty. Two hours a week; first semester.* (Omitted in 1906-07.) Assistant Professor HORACK.

This course deals with the origin, nature and scope of admiralty jurisdiction, rights and liabilities of owners of vessels, maritime liens, general average, salvage, maritime torts.

Comparative Constitutional and Administrative Law, I. Selected cases and assigned readings. *Two hours a week; first semester.* (Omitted in 1907-08). Professor COOK.

This course is a comparative study of the public law of the United States, England, France, Germany, Switzerland, Canada, and Australia.

Comparative Constitutional and Administrative Law, II. Selected readings and assigned cases. *Two hours a week; second semester.* (Omitted in 1907-08). Professor COOK.

This course is a continuation of Comparative Constitutional and Administrative Law I, given during the first semester.

Equity III. Keener's *Cases on Equity, Vol. III. Three hours a week; first semester.* Professor SMITH.

This course covers the jurisdiction of Equity over the reformation and rescission of instruments, and the various forms of relief against fraud, accident and mistake.

Code Procedure, I. Wisconsin Statutes and Decisions. *Two hours a week; first semester.* Professor BASHFORD.

This course includes a study of the rights created wholly or in

part by the statutes of the state and the remedies provided for their enforcement. The instruction of the class room is supplemented by the preparation of pleadings and papers, and the preparation and trial of cases in the practice court.

Code Procedure, II. Wisconsin Statutes and Decisions. *Two hours a week; second semester.* Professor BASHFORD.

This course is intended to cover the whole field of procedure under the code both in law and equity. The instruction of the class room is supplemented by practice work in the preparation of pleadings and papers in an action and in proceedings for the enforcement of provisional and final remedies and by preparation and trial of the cases in the practice court throughout the year.

Conflict of Laws. Selected Cases. *Two hours a week; second semester.* Assistant Professor HORACK.

Extent of the legislative and judicial power of the states, and the obligations and rights of individuals to obey or take advantage of the legislation of one or another state; the creation of legal rights and obligations, recognition, and enforcement, within one state, of rights and obligations which have been created in another state; legal process by which rights created in another state shall be enforced.

Constitutional Law. McClain's *Cases on Constitutional Law*, and selected cases. *Two hours a week; both semesters.* Professor GILMORE.

Nature of the federal constitution and its amendments, relation of the states to the federal government, the departments of government, taxation, regulation of commerce, naturalization, bankrutcy, currency, etc., the powers of the executive, the judiciary and the jurisdiction of federal courts, civil rights and their guarantees, political privileges, and protection of contracts and property.

Evidence II. Jones on *Evidence. One hour a week; both semesters.* Professor JONES.

This course is a continuation of Evidence I, by which it must be preceded. The course includes a study of parole evidence, documentary evidence, competency, and the examination of witnesses.

Mortgages. Kirchwey's *Cases on Mortgages. Two hours a week; second semester.* Professor COOK.

This course deals with legal and equitable mortgages of real and personal property.

Partnership. Burdick's *Cases on Partnership. Two hours a week; first semester.* Professor GILMORE.

The nature of a partnership; formation and dissolution; powers of partners. Rights and remedies of creditors; duties and liabilities of partners *inter se;* accounting and distribution.

Probate Law. Statutes and selected cases. *One hour a week; second semester.* Professor OLIN.

This course deals not only with the history and development of administration, and general substantive probate law, but also, and especially, with probate practice and procedure under the Wisconsin statutes. There is great similarity between the probate codes of Wisconsin, Michigan, Minnesota, Iowa, and other northwestern states. The course may be profitably taken by students intending to practice in any state having a similar code to that of Wisconsin, though intended primarily for the benefit of Wisconsin students.

Quasi-Contracts. Keener's *Cases on Quasi-Contracts. Two hours a week; first semester.* Professor SMITH.

Under the head of *quasi* or constructive contracts is embraced all that very large class of obligations, which, while not contractual in fact, are enforced as if they were so, rather than that the plaintiff should fail of any remedy. They constitute largely that great mass of obligations for the enforcement of which the action of *assumpsit* was invented. That they have been not always clearly classified or distinguished by theoretical writers upon the law, and that a more or less variable and inconsistent terminology has sometimes been applied to them, even by the courts, makes it only the more necessary for the systematic student to determine the foundation and extent of the obligation.

Suretyship. Ames' *Cases on Suretyship. Two hours a week; second semester.* Assistant Professor HORACK.

Nature of the contract of suretyship; surety's defenses against the creditor, based upon absence, extinguishment, or suspension of the liability of the principal debtor, or upon principal debtor's right of set-off or counter-claim against the creditor; surrender or loss of securities by creditor; variation of surety's risk. Surety's rights, subrogation to the rights of the creditor, indemnity, contribution, exoneration. Creditor's rights to surety's securities.

Wills. Cassoday on *Wills,* and selected cases. *One hour a week; first semester.* Professor OLIN.

This course deals with the laws of descent and distribution,

the essentials of wills and the requisites for their due execution, the probate of wills.

Wisconsin Corporations. Statutes and selected cases. *One hour a week; second semester.* (Omitted in 1906-07.) Professor RICHARDS.

This course is open to students who have had the general course in Corporations, or its equivalent. It is intended primarily for those intending to practice in Wisconsin. The organization of the various forms of corporations authorized by statute is dealt with, the peculiarities of the statutes with reference to the rights of stockholders and creditors, the rights of foreign corporations, etc.

Required and Elective Courses

Candidates for the degree are required to take all the subjects of the first year, and ten hours of work in the second year, and eleven hours in the third year. The work of the second and third years is elective. Second year students may elect not less than ten 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 ten 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 entire three years and comprise Common Law Pleading, four hours, first year; and Code Pleading and Practice, two hours a week, during the second and third years, supplemented by four hours a week in the Practice Court. The purpose of the courses is to instruct the student in the principles of pleading and practice at common law and under the Codes, by duplicating as far as possible the steps taken by an active practitioner in the preparation and trial of cases at law and in equity throughout the entire field of litigation. The student is required to prepare pleadings in

assigned cases, and as counsel in the practice court carry through the various steps in a cause from its inception to the final judgment. Instruction will also be given in the drawing of all forms of legal papers. The Practice Court will be conducted by Professor R. M. Bashford, a veteran professor in the school, and a practitioner of large experience at the bar. Unusual facilities are thus provided to prepare the student for the active practice of the profession.

Elective Studies

Students of the College of Law will be permitted to pursue studies in other departments of the University, subject to the following regulations:

Students of the first year class of the College of Law may elect studies in the College of Letters and Science and substitute them for studies in the first year of the law course, to an amount not exceeding three hours a week for the year. The studies to be elected are to be designated by the College of Law.

Students in the College of Letters and Science will be permitted to elect, as a part of their undergraduate course, such studies in the College of Law as are specified on page 98.

Resources of the College of Law

The College of Law 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.

Law Building

This building was constructed at a cost of $86,000 from brown Superior sandstone. It is amply provided with lecture and library rooms, and is equipped with the most approved systems of lighting, heating, and ventilation.

Library

The library of the College of Law contains 15,000 bound volumes, comprising the official reports of the various states and territories and of the United States; a complete set of English reports; the reporter system; the various series of selected cases, as American Decisions, American Reports, American State Re-

ports, Lawyers Reports Annotated; duplicates of the more important reports; complete sets of the leading law periodicals; a large collection of text books, statutes, digests, etc. Large additions to the library have recently been made by means of a special appropriation from the Board of Regents.

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 p. 42.

Advantage of Location

Unusual facilities for observing the practice of the various courts are offered the students of the College of Law, from the fact that the Supreme court of the state is in session during most of the academic year, and the students have opportunity to listen to arguments by some of the ablest lawyers of the country.

Two terms of the United States District and Circuit courts are held here annually, and important cases, both in law and equity, are tried, illustrating the procedure in the federal courts.

The Circuit court of Dane county holds three terms annually, giving the students opportunity to observe the details of the practice under the code system.

The Municipal court of Dane county sits daily for the trial of criminal causes.

The legislature of the state hold biennial sessions.

The University

The University of Wisconsin has a corps of instructors selected from the best scholars in their respective specialties. On obtaining the proper certificate from the dean, students of the College of Law may pursue studies for which they are prepared in other departments of the University, without extra charges, in so far as such studies do not interfere with their work in the College of Law.

Societies

The Forum and the Columbia are incorporated literary societies, composed entirely of law students. Each of them holds weekly meetings for debates and other literary exercises.

Fees and Expenses

All fees are payable in advance at the office of the Secretary of the Regents. (See Tuition and Fees, p. 82.) Admission to membership in the classes is not permitted until the fees are paid. No deductions are made for absences, nor for failure to begin at the opening of the year, nor is extension of time allowed for payment of fees Fees must in all cases be paid in advance.

Recepits 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 p. 85.)

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 shoud further inquiries as to admission, examination, etc., be necessary, they should be addressed to the Dean of the College of Law, Madison, Wis.

THE COLLEGE OF AGRICULTURE

STAFF

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
W. A. HENRY, D. Agr., D. Sc., Dean. Professor of Agriculture.

A. S. ALEXANDER, F. H. A. S., M. D. C., Professor of Veterinary Science.
S. M. BABCOCK, Ph. D., Professor of Agriculture Chemistry.
E. H. FARRINGTON, M. S., Professor of Dairy Husbandry.
E. B. HART, B. S., Professor of Agricultural Chemistry.
G. C. HUMPHREY, B. S., Professor of Animal Husbandry.
GEORGE MCKERROW, Superintendent of Farmers' Institutes.
R. A. MOORE, Professor of Agronomy.
H. L. RUSSELL, Ph. D., Professor of Bacteriology.
E. P. SANDSTEN, Ph. D., Professor of Horticulture and Economic Entomology.
A. R. WHITSON, B. S., Professor of Soils.
F. W. WOLL, Ph. D., Professor of Agricultural Chemistry.

E. G. HASTINGS, M. S., Assistant Professor of Bacteriology.
D. H. OTIS, M. S., Assistant to the Dean; Assistant Professor of Animal Nutrition.
C. W. STODDART, A. M., Assistant Professor of Soils.
H. C. TAYLOR, Ph. D., Assistant Professor of Agricultural Economics.

G. H. BENKENDORF, Instructor in Dairy Husbandry.
L. S. BERRY, Assistant in Farm Dairying.
J. G. FULLER, B. S., Instructor in Animal Husbandry.
A. C. HABERSTICH, Assistant in Dairy Machinery.
R. T. HARRIS, Assistant in Dairy Tests.
CONRAD HOFFMANN, B. S., Assistant in Agricultural Bacteriology.
E. R. JONES, B. S., Assistant in Soils and Drainage.
FRANK KLEINHEINZ, Instructor in Animal Husbandry.

LOUIS KOHEL, Assistant in Creamery.
A. G. LAABS, Assistant in Cheese Making.
GOTTLIEB MARTY, Assistant in Foreign Cheese Making.
C. J. MCCOMB, Assistant in Animal Husbandry.
A. F. MCLEOD, Ph. D., Instructor in Soils.
M. H. MEYER, Instructor in Creamery.
MATTHEW MICHELS, Assistant in Farm Dairying.
J. G. MILWARD, Assistant in Horticulture.
J. G. MOORE, M. S., Instructor in Horticulture.
J. W. MOORE, Assistant in Cheese Making.
C. A. OCOCK, B. S., Instructor in Agricultural Engineering.
G. A. OLSON, Instructor in Agricultural Chemistry.
H. SANDELL, Assistant in Soils.
CHRIST SCHENK, Assistant in Creamery.
CHRIST SCHROEDER, B. S., Assistant in Animal Husbandry.
FRANCIS SCHWINGLE, Assistant in Cheese Making.
H. L. SMITH, Assistant in Pasteurizing.
A. L. STONE, Instructor in Agronomy.
W. E. TOTTINGHAM, B. S., Instructor in Agricultural Chemistry.

IDA HERFURTH, Executive Clerk.
IVA A. WELSH, B. L., Librarian.

General Information

The College of Agriculture, while distinct from the other grand divisions of the University in its buildings, its corps of instructors and investigators, and its equipment, is nevertheless intimately interwoven with the whole institution, gaining immensely by such association and union. Agricultural students have all the advantages incident to a great university, such as instruction and counsel from the corps of professors in other colleges, the general libraries, laboratories, societies and associations, while in their specific college they find every factor available to its limit for special advancement along chosen lines.

Six buildings located at the west end of Observatory Hill are devoted to agricultural research and instruction. Agricultural Hall is a four-story structure, 200 feet in length by 64 feet in width, built of Bedford limestone and buff pressed brick, with a red Spanish tile roof. Here are located the executive offices of the College and Experiment Station, the offices of the Farmers' Insti-

tute, and the offices and laboratories of the departments of Agricultural Chemistry, Animal Husbandry and Agricultural Bacteriology, with additional rooms for departments yet to be established. In the rear of the main structure is an octagonal wing, 66 feet in diameter, two stories in height. The first story of the octagon is occupied by the agricultural library, with its large reading room. In the upper story is located an auditorium, with gallery, having a total seating capacity of 750.

Hiram Smith Hall, devoted to dairy instruction and research, is a brick and stone structure, having a frontage of 103 feet by 48 feet in depth, two and three stories in height. Here are found the offices of the department, lecture rooms, laboratories, rooms for cream separation and cheese making; also rooms for churning and butter working, pasteurization, refrigeration, etc. An addition at the rear furnishes rooms for the manufacture of foreign cheese, cheese pressing, cheese curing, etc. Both buildings are supplied with refrigeration, furnished by an ammonia plant. The Dairy Department receives 4,000,000 pounds of milk annually from more than a hundred different farms; from this are manufactured and sold in Madison, Milwaukee, Chicago, and elsewhere, pasteurized milk, pasteurized cream, print and package butter, and several varieties of cheese.

The joint Horticulture-Physics building is a three-story brick and limestone structure, with a frontage of 76 feet by 60 feet in depth. The east half of the building, devoted to horticulture, is provided in the rear with three green-houses, each 22 by 76 feet in area, back of which is a potting house and general laboratory, 22 by 66 feet, one story in height, over an ample root cellar. The grounds of the Horticultural Department embrace about twelve acres, mostly occupied by fruit trees, shrubs, and perennial plants. The seedling experimental apple and plum plantations are especially extensive.

The west half of the building is devoted to instruction and research in soils. At the rear is a green-house, 44 by 76 feet in area. The Soils Department controls twelve acres of the University farm, which area is devoted to irrigation, soil, drainage, and fertilizer experiments. An irrigation plant, consisting of engine, pump, and reservoir, supplies water for ten acres of experimental plots. Additional provisions include a reservoir, a distributing system, etc. for cranberry growing at the branch cranberry station, located at Cranmoor, Wood County.

The Agronomy Building is a three story, fire-proof, reinforced-concrete brick building with tile roof and Bedford limestone trimming. The building has a frontage of ninety-eight feet and a depth of forty-eight feet, and was erected the past year at a cost of $30,000. The first floor has storage rooms for grains, forage plants, and special machinery; also a grain curing and a shipping room. The space on the second floor will include a general office, two private offices, a grain laboratory, sample grain room, museum, and lecture room. The upper story is one large grain-judging room for the accommodation of several hundred students.

The Agricultural Engineering Building is a reinforced steel concrete structure, having a frontage of 150 feet, a depth of 50 feet, and three stories in height. The floors, posts, and foundation walls are of the most modern type of concrete construction. The exterior walls are of purple pressed brick. The interior walls are of white sandlime bricks; all partitions are constructed of hollow tile, plastered over, thus making the building practically fire-proof. It is equipped with suitable machinery and appliances for both research and instruction. Here are found the offices of the department, lecture rooms, drafting rooms, blue-print room, and laboratories, the latter being devoted to farm machinery and practical cement work.

The heating plant for the College of Agriculture, occupying the basement of a brick structure, 35 by 50 feet in area, is provided with five steam boilers aggregating 370 horse power.

About sixty rods west of the group of agricultural buildings above described are located the farm buildings proper. The principal ones of these are four large barns for the separate accommodation of horses, cattle, sheep, and swine. Between the two wings of the barn, housing the dairy cows and young stock, is a sky-lighted, steam-heated stock-judging room, 40 by 70 feet in area. A second sky-lighted, stock-judging building, one story in height, 36 by 74 feet, is provided with electric light and steam heat, and can be divided into two rooms by a folding partition.

The Agricultural College domain comprises two farms, one of which forms a part of the University Campus, and embraces about 150 acres of tillable land. Two miles distant is another farm of 220 acres. Both tracts are devoted to instruction and research, and experiments with farm crops, fertilizers, tillage, drainage, etc., are always in progress. No attempt is made to

operate a "model farm," but rather to conduct all operations in such manner as to add to the sum of human knowledge and advance the agriculture of the state.

Live Stock

The leading breeds of live stock are represented by carefully selected specimens chosen primarily for instruction, but in many cases also used in research work. These animals represent an outlay of over $20,000.

Library

The Agricultural College Library embraces over 8,060 bound volumes and many pamphlets, all distinctly agricultural in character. It is especially strong in its files of scientific agricultural journals, both American and foreign, and herd, stud, and flock books of pure-bred animals. About $1,000 is expended annually for books, periodicals, and binding. A trained librarian is in attendance to assist the student. This library, in combination with the general University library and the State Historical library, gives unusual service to the user of books.

Societies

Long Course, Short Course, and Dairy students maintain three literary societies which meet weekly. 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.

Students of the College of Agriculture, former and present, engaged in farming in Wisconsin, maintain an Experiment Association, with a paid membership of about 900, for the purpose of cooperating with the 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 plants secured through the Experiment Station and the United States Department of Agriculture, and to multiplying and disseminating the desirable varieties. By means of this organization, the members of which are scattered all over the State, the College is in close touch with the great body of Wisconsin farmers, numbering

175,000 in all. The State appropriates $1,000 annually to the work, and prints 5,000 copies each year of the annual report of the Association.

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 $75 to $90 for the term for room, board, washing, and necessary books.

Plan of Agricultural Education

The University system of agricultural education has three aims:—

First, to develop agricultural science through investigation and experiment, and to disseminate the same through bulletins and reports.

Second, to give instruction in agriculture at the University.

Third, to disseminate agricultural knowledge among the farmers of the State by means of institutes and popular publications.

Courses of Instruction

Systematic courses in agriculture have been arranged to meet the wants of students having different purposes in view.

THE GRADUATE COURSE offers 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. It will be practical for such students to participate in experiments in progress, and, after suitable experience, to conduct independent investigations. When contributions of knowledge of permanent value are made they will be published through the bulletins of the Experiment Station under the name of the contributor.

THE LONG COURSE offers scientific training in agricultural chemistry, soils, horticulture, animal husbandry, dairying, agricultural bacteriology, agronomy, and agricultural engineering. Besides the strictly professional branches, it embraces general train-

ing 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 a large liberty of selection is allowed.

THE SHORT COURSE 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.

THE DAIRY COURSE is designed for those who intend to operate creameries and cheese factories.

THE FARMERS' COURSE, covering the brief period of two weeks in winter, is designed for busy farmers, and follows only lines of intensely practical instruction.

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 Requirements for Admission. (See Index.)

ADULT SPECIAL STUDENTS IN AGRICULTURE. For terms of admission for adult special students, see Index.

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, but those who come poorly prepared cannot expect to receive the full benefits of the course.

DAIRY COURSES. The requirements for admission to the winter 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 course no previous experience is required.

FARMERS' COURSE. No examinations are required for admission to this course, but the candidate must be at least twenty-five years of age.

For fees charged in the various departments, see p. 80.

Degrees

The degree of Bachelor of Science (Agricultural Course) is conferred upon students who successfully complete the long course in agriculture. The degree of Master of Science is conferred upon agricultural graduates who complete one year of advanced study at the University and present an acceptable thesis on a topic approved by the College Faculty.

OUTLINE OF THE LONG COURSE IN AGRICULTURE

All studies in the freshman and sophomore year, except Soils 1, are given in the College of Letters and Science.

Freshman Year

FIRST SEMESTER

	Hours per Week
Chemistry 1	5
German 2S	4
Mathematics 2	3
English 1	3
Military Drill	2
Gymnastics	2

SECOND SEMESTER

Chemistry 1	5
German 2S	4
Soils 1	3
English 1	3
Military Drill	2
Gymnastics	2

Sophomore Year

FIRST SEMESTER

German 3S	2
Biology 1	5
Physics 1	5
Chemistry 10	4
Military Drill	2
Gymnastics	2

SECOND SEMESTER

German 3S	2
Biology 1	5
Physics 1	5

	Hours per Week
Botany 6 (See Index, under Botany)	5
Military Drill	2
Gymnastics	2

Junior Year

FIRST SEMESTER

Agricultural Chemistry 1 and 2	5
Soils 2	5
Bacteriology 1	5
Elective: Animal Husbandry, Dairy Husbandry, or Horticulture	3

SECOND SEMESTER

Electives

Agricultural Chemistry	5
Soils	5
Agricultural Bacteriology 16 or 17	5
Horticulture	5
Animal Husbandry	5
Dairy Husbandry	5
Agronomy	3
Farm Engineering	5
Agricultural Economics	2

From the above electives the student will choose a major, to begin with the second semester of the junior year and continue through the senior year. The work required in the major (including thesis) shall not be less than eighteen hours, the credit for thesis being four hours. The thesis must represent some phase of the student's work in his major study. The professor in whose department the major is taken will select a minor to the amount of ten hours. The student will elect not less than ten additional hours in the College of Agriculture, the minimum graduation requirements during the last three semesters being forty-five unit hours.

Senior Year

Continuation of elective course and preparation of thesis. The total requirements for graduation are 126 unit hours.

DEPARTMENTS OF INSTRUCTION

THE LONG COURSE IN AGRICULTURE

AGRICULTURAL CHEMISTRY

PROFESSORS BABCOCK, HART, WOLL, AND MR. TOTTINGHAM.

The courses in Agricultural Chemistry are open to students who have completed course 1 in general chemistry, and have had at least one semester's work in qualitative and quantitative analysis. Courses 1 to 3 are primarily for undergraduate students, while courses 14 to 19 are advanced courses adapted for graduates and for undergraduates who have completed courses 1 and 2, or their equivalents. The courses in Botany 6 and Agronomy 1, are further prerequisites to, or must be taken in conjunction with, course 17. The courses in Physiology 3, and Animal Husbandry 1 and 14, are further prerequisites to, or must be taken in conjunction with, course 18. Course 1 in dairying and course 3 given below are prerequisites to course 19.

Primarily for Undergraduates

1. Agricultural Chemistry. A general discussion of the chemistry of plants and animals and the processes involved in their growth. *First semester; Tu., Th., at* 9; required of all juniors. *Second semester; F., S., at* 11. *Two-fifths credit.* Professor HART.
2. Agricultural Analysis. A course in analytical chemistry applied to agricultural materials, including the quantitative analysis of fertilizers, feeding stuffs, fermented liquors, soil amendments, soils, insecticides, etc. *Throughout the year. First semester; required of all juniors; Tu., Th., at* 2. *Three-fifths credit.* Professor HART and Mr. TOTTINGHAM.
3. The Chemistry of the Dairy. Embraces a study of the chemistry of milk and its products, including the detection and quantitative estimation of adulterants. Lectures and laboratory practice. *Second semester; three to five-fifths credit.* Professor HART and Mr. TOTTINGHAM.

For Undergraduates and Graduates

14. Advanced Agricultural Analysis. Examination of feeds, plants, and animal products, including quantitative work on the proteids, carbohydrates, and fats, and such enzymic processes as are involved in the nutrition of plants and animals. Conferences, assigned reading, and laboratory work. *Five laboratory periods a week.* Professors BABCOCK and HART.
15. Detection of Adulteration of Concentrated Feeding Stuffs. Includes chemical and microscopical examinations. *Second semester; two laboratory periods a week.* Professor WOLL.
16. Sugar Beet Analysis. Course intended for beet chemists in sugar factories. Laboratory work. *First semester; M. W., at* 2. Professor WOLL.

Primarily for Graduates

17. Plant Nutrition. A study of the influence of various fertilizers upon the development and composition of plants, to include field and pot experiments. *The equivalent of five laboratory periods a week.* Professors BABCOCK and HART.
18. Animal Nutrition. Composition and digestibility of foods and their influence upon the growth, production of milk, etc. Conferences, assigned reading, with laboratory and barn work. *Five periods a week.* Professors HART and WOLL.
19. 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. Conferences and laboratory work. *Throughout the year; five periods a week.* Professors BABCOCK and HART.
20. Seminary 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. *Once every two weeks throughout the* year. Professors BABCOCK, HART, and WOLL.

SOILS

PROFESSOR WHITSON, ASSISTANT PROFESSOR STODDART, MR. JONES, AND DR. M'LEOD.

As prerequisites to the courses in soils, a year's work in botany, physics, and general chemistry, and one semester's work in

analytical chemistry are required. Courses 1, 2, 3, and 12 give a broad foundation for agricultural practice, so far as this relates to soil management. Courses 13, 15, and 16 are planned for those who desire to take their theses in soils, or to prepare for investigational work.

Primarily for Undergraduates

1. Drainage and Irrigation. A course in the use of the level and plane table, with special reference to drainage, irrigation, platting farms, etc. Required of all freshmen. *Second semester; three times a week.* Mr. JONES.
2. Soils. A general discussion of the origin and classification of soils, and of the influence of their physical, chemical, and biological conditions upon the growth of crops. Required of all juniors. *First semester; five times a week.* Professor WHITSON.
3. Soils. A study of soils principally in the laboratory with regard to their origin, fertility and physical properties, being a continuation of course 2 which is prerequisite. *Second semester; one lecture and four laboratory periods a week.* Assistant Professor STODDART, Mr. JONES, and Dr. MCLEOD.
12. Soil Management. An advanced study of such topics as rotation of crops, reclamation of sand and marsh lands, and the use of fertilizers. Lectures and assigned readings. *Second semester; twice a week.* Professor WHITSON.
13. Plant Nutrition. A study of the influence on the growth of agricultural plants, of the amount and form of the essential elements and of the chemical and physical condition of the medium in which grown. Laboratory work and assigned reading. *Credit and hours to be arranged upon consultation.* Professor WHITSON.

For Undergraduates and Graduates

14. Agricultural Climatology. A study of the distribution of heat, light, and precipitation, and of their effects on the staple crops. *Second semester; two lectures per week.* Professor WHITSON.
15. Soil Physics. This course is principally laboratory work on the mechanical analysis and temperature of soils, and on

the movements of the soil moisture. *First semester; five times a week.* Mr. JONES.

16. Soil Chemistry. A lecture and laboratory course on the methods of chemical analysis adapted to the study of soil fertility. Courses 2 and 3, and analytical chemistry, both qualitative and quantitative, are prerequisite. *Second semester; two lectures and three laboratory periods a week, counting as a two-fifths, three-fifths or five-fifths study.* Assistant Professor STODDART and Dr. MCLEOD.

Primarily for Graduates

17. The Origin and Classification of Soils. The processes of soil formation are studied with special reference to the factors which determine their tilth and fertility. Conferences, field, and laboratory work. *Hours and credit to be arranged.* Professor WHITSON.

ANIMAL HUSBANDRY

PROFESSORS ALEXANDER, HENRY, AND HUMPHREY, ASSISTANT PROFESSOR OTIS, MR. FULLER, MR. HUTTON, MR. KLEINHEINZ, MR. M'COMB, AND MR. SCHROEDER.

Course 1 is a prerequisite to course 15. Course 16 should be preceded by at least one semester's work in agricultural chemistry, course 1, and by courses 1 and 4. Courses 1, 4, and 4A, together with a reading knowledge of German, are a prerequisite to courses 17 and 18.

Primarily for Undergraduates

1. Breeds of Live Stock. A study of the origin and classification of the various breeds of live stock, and of their principal characteristics. Lectures with practical applications. *First semester; Tu., W., Th.* Professor HUMPHREY and Mr. FULLER.
2. Breeding and Management. The principles and methods relating to the breeding and management of live stock as set forth in standard treatises upon this subject. *Second semester; M., Tu., W., Th.* Professor HUMPHREY.
3. Veterinary Anatomy and Physiology. A lecture and textbook course upon rudimentary veterinary anatomy and physiology. *Second semester; Tu., Th.* Professor ALEXANDER.

4. Animal Nutrition. A study of the laws of animal nutrition, the composition of feeding stuffs, the standard rations for the nourishment of farm animals. Lectures and reading. *Second semester; M., Tu., W.* Assistant Professor OTIS.

4A. Nutrition Researches. A study of the feeding trials conducted at the principal research stations of Europe and America. The rational feeding, care, and management of farm animals; lectures and seminary work. *Second semester; M. W.* Assistant Professor OTIS.

5. Veterinary Physiology and Hygiene. A lecture course upon the physiology and hygiene of domestic animals. *Second semester; Tu., Th.* Professor ALEXANDER.

6. Judging Live Stock. Principles governing the selection and judging of live stock. Text-book, reference work, and practical judging. *First semester; M., Tu., W., Th.* Professor HUMPHREY and Mr. FULLER.

7. Live Stock History. A study of leading individuals and families of live stock, including records and pedigrees. Seminary work. *Second semester; M., W.* Mr. FULLER.

Primarily for Graduates

14. Breeding Problems. The principles and methods as set forth in Darwin's *Animals and Plants under Domestication*, and the standard treatises upon stock breeding. Assigned reading, pedigree work, and conferences. *Second semester; five-fifths credit.* Professor HUMPHREY.

15. Improved Live Stock. An advanced study of the development, characteristics, and usefulness of the more important breeds of live stock. Assigned literature, practical judging, and conferences. *First semester; five-fifths credit.* Professor HUMPHREY.

16. Feeding Problems. The student will assist in some regularly organized effort of the department in its nutrition studies. He will aid in the feeding operations, keeping records, making analyses of feeding stuffs used, and compiling the results of such investigation. *Daily throughout the year, as arranged.* Professor OTIS.

17. Nutrition of Farm Animals. A study of the nutrition researches of farm animals at the leading research stations of Europe and America. Seminary work. *Throughout the year; M., W., F.* Professor HENRY.

18. Researches in Nutrition. Under proper direction, qualified graduates may conduct original researches on the effect of nutriments upon the animal; e. g., growth, milk production, fecundity, development of the muscles, bones, viscera, etc. This work will be combined with animal studies of the nutrients employed and of the bodies and organs of the animals subjected to the experiment. *Daily throughout the year, as arranged.* Professor HENRY.

DAIRY HUSBANDRY

PROFESSOR FARRINGTON, MR. BENKENDORF, MR. MEYER, AND ASSISTANTS.

The courses in Dairy Husbandry 1 to 7 are open to students who have had two years' undergraduate training in the scientific departments of the University, or their equivalents. Courses 16 to 20 are intended primarily for graduate students. Course 16 is open to students who have finished courses 1 and 3. Courses 17, 18, and 20 are open to students who have taken courses 1, 2 and 5, respectively, while courses 1, 2, and 5 are prerequisites to course 20.

Primarily for Undergraduates

1. Creamery Buttermaking Cream separation, cream ripening, churning, butter working, butter printing, etc. Lectures and factory work. *Throughout the year; five two-hour periods a week.* Professor FARRINGTON and Mr. MEYER.
2. Cheesemaking. Lectures and factory work in making and curing Cheddar, Swiss, brick, Limburger, and Edam cheese. *Five two-hour periods a week.* Mr. MOORE and Mr. MARTY.
3. Dairy Machinery. Shop practice with engines, boilers, artificial refrigeration machinery, pipe fitting, etc. *Second semester.* Mr. BENKENDORF.
4. Milk Inspection. Methods of testing milk, use of lactometer, curd, and rennet tests. Lectures and laboratory practice. *Throughout the year.* Professor FARRINGTON and Mr. BENKENDORF.
5. Milk and Cream Pasteurization. *Second semester.* Professor FARRINGTON and assistants.
6. Farm and Factory Buttermaking. *Second semester; Fri. P. M. and Sat. A. M. Three-fifths credit.* Mr. BENKENDORF and Mr. MEYER.

7. Cheesemaking. *Second semester; Sat., at 8. Two-fifths credit.* Mr. MARTY.

For Undergraduates and Graduates

16. Cream Separation. An historical study of the various farm and factory methods used for separating cream. Assigned reading with illustrative laboratory practice. *Throughout the year; four periods a week.* Professor FARRINGTON.
17. Milk Inspection and Testing. Methods used at farms, factories, and city supply stations, including inspection of a large number of farm dairies. *Second semester; four or more periods a week.* Professor FARRINGTON.
18. Butter Yield and Quality. A study of the effect due to the various manipulations in the manufacturing processes. *Second semester; four periods a week.* Professor FARRINGTON.
19. Pasteurization. Its application to butter making, cheese making, and city milk supply. *Second semester; four periods a week.* Professor FARRINGTON.
20. Cheese Making and Curing. A study of the effects produced by varying the usual processes of cheese making. *Hours to be arranged.* Professor FARRINGTON.

HORTICULTURE

PROFESSOR SANDSTEN, MR. MILWARD, AND MR. MOORE.

Botany 6, department of Botany, is a prerequisite to all courses in this department and course 9 will be required of all pursuing any of the remaining courses. Course 3 is a prerequisite to course 4. Course 7 of the Soils department is a prerequisite to course 6. Courses 1 and 5 are prerequisites to course 19, with the further requirement that one year's time be given by the student taking this course. Course 5 is a prerequisite to course 20. Courses 1, 2, 3, and 5 are prerequisites to course 21.

Primarily for Undergraduates

1. Plant Propagation. An elementary course covering instruction in the various methods of propagating horticultural plants in the garden and green-house. Lectures and laboratory work. *Second semester; M., Tu.* Mr. MOORE.

2. Fruit Growing. This course, in connection with course 1, will cover the general field of fruit growing, with especial reference to conditions in the Northwest. Lectures and recitations. *Second semester; Th., F.* Mr. MOORE.
3. Vegetable Gardening. This subject will be taught to meet the growing demands for instruction in this important branch of horticulture. Lectures and laboratory work. *Second semester; at hours to be arranged.* Mr. MILWARD.
4. Growing Vegetables Under Glass. A course in growing vegetables in the greenhouse. *First semester; at hours to be arranged.* Mr. MOORE.
5. Economic Entomology. Lectures and laboratory work. *Second semester; two hours a week.* Professor SANDSTEN.
6. Landscape Gardening. Lectures, field-work, and the mapping of grounds, lawns, etc. *Second semester; two hours a week.* Professor SANDSTEN.
7. Pomology. Lectures, reading, and laboratory work in the orchards of the department. *First semester; M., Tu.* Professor SANDSTEN.
8. Floriculture. Greenhouse management and plant propagation. *Second semester; W., Th., F.* Mr. MOORE.
9. General Horticulture. An introductory course designed to briefly cover the general field of horticulture. Lecture and laboratory work. *First semester; M., W., F.* Mr. MOORE.

Primarily for Graduates

18. Plant Breeding. An experimental course based upon the research work of the department. *Two or more laboratory periods a week.* Professor SANDSTEN.
19. Plant Propagation. With special reference to nursery practice. Emphasis will be laid upon the most approved methods of propagating fruit and ornamental trees, shrubs, and flowers. Conferences, assigned reading, and laboratory work. *Five laboratory periods a week.* Mr. MOORE.
20. Economic Entomology. With special reference to insects injurious to horticultural and agricultural crops. Facilities are provided for the breeding and for the study of the life histories of insects. The methods of compounding, and the uses of insecticides will be fully considered. *Second semester; M., W.* Professor SANDSTEN.

21. Experimental Horticulture. The planning of experiments, keeping records, tabulating work, etc. *Five laboratory periods a week.* Professor SANDSTEN and Mr. MOORE.

BACTERIOLOGY

PROFESSOR RUSSELL, ASSISTANT PROFESSORS FROST AND HASTINGS; MR. HOFFMANN, AND MR. WAYSON.

It is desirable that students who wish to take course 1 (General Bacteriology) shall have had General Chemistry and Biology. Course 1 is a prerequisite for courses 16 and 17. Course 1 and courses 16 or 17 are prerequisites for thesis work in this department.

For Undergraduates

1. General Bacteriology. Lectures. A survey of the entire field of bacteriology. Given in the College of Letters and Science. Required of junior agricultural students. *First semester; M., W., F., at* 11. *Five-fifths credit.* Professor RUSSELL, Assistant Professor FROST, and Mr. WAYSON.

For Undergraduates and Graduates

16. Dairy Bacteriology. A study of bacteria in relation to dairy processes, including the production of milk, butter and cheese, also action of disease bacteria in milk. Lectures, assigned literature, and laboratory work. *Second semester; five-fifths credit.* Professor RUSSELL and Assistant Professor HASTINGS.
17. Agricultural Bacteriology. Embraces a consideration of bacteria as applied to agricultural processes, including their relation to soils, diseases of plant and animal life, and to dairying. Lectures and laboratory work. *Second semester; five-fifths credit.* Professor RUSSELL, Assistant Professor HASTINGS, and Mr. HOFFMANN.
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. Professor RUSSELL and Assistant Professors FROST and HASTINGS.

18. Bacteriology of Special Dairy Problems. Exceptional opportunities are offered for a combination of laboratory work with the practical problems relating to milk production and the manufacture of butter and cheese. Lectures and laboratory work. *First semester; five-fifths credit.* Professor RUSSELL and Assistant Professor HASTINGS.
19. Bacteriology of Animal Diseases. Lectures and laboratory work. *Second semester; three to five-fifths credit.* Professor RUSSELL and Assistant Professor HASTINGS.

AGRONOMY

PROFESSOR MOORE AND MR. STONE

As a prerequisite, the student should first complete Biology 1, and Botany 6, department of Botany. In addition to receiving theoretical instruction, students will assist, so far as practicable, in the various operations of the department, including plant-breeding, testing new varieties of farm cereals and forage plants, cultural methods, etc.

Primarily for Undergraduates

1. Cereals and Forage Plants. A systematic study of plant-breeding as now being developed in America, also a study of Indian corn and the other leading cereals grown in Wisconsin. In a minor way the seeding, cultivation, and harvesting of crops will receive attention, as will also the production of the leading forage plants, particularly alfalfa and other promising legumes. *Throughout the year; three times a week.*

Primarily for Graduates

12. 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. Lectures and laboratory work. *Three times a week throughout the year.* Professor MOORE and MR. STONE.

AGRICULTURAL ENGINEERING

MR. OCOCK

Courses 1 and 3 cover many of the general and specific problems that arise in connection with the construction of farm buildings and fences. Courses 2 and 4 give such instruction as will

enable the operator to obtain the maximum efficiency and durability with the principal farm machines. It is important that the student bring to the work a fund of actual experience. For courses 2 and 4 the student is urged to previously take shop work, courses 1 and 7 (Mechanical Engineering). In course 20, for architectural work the student must have first completed course 1; for cement work he must have completed course 3; for farm machinery he must have completed course 4.

Primarily for Undergraduates

1. Rural Architecture. The location of farm buildings with reference to the landscape effects, convenience, and sanitation; the construction of the farm house, barns, the silo, etc., heating and ventilation; platting the home grounds, paddocks, yards, and fields. *First semester; Tu., Th., 2 to 4; two-fifths credit.*
2. Power Machinery. The construction, efficiency and operation of horse-powers, windmills, gasoline and traction engines; pumps, corn shellers, feed cutters, corn huskers, grinder, etc. *First semester; M., W., F., 2 to 4; three-fifths credit.*
3. Cement Work. Concrete construction as applied to the walls, floors, and posts of stables, also to feeding floors, water tanks, manure pits, fence posts, etc. *Second semester; Tu., Th., 2 to 4; two-fifths credit.*
4. Farm Machinery. The tools and machinery of the field:—Plows, harrows, and horse-hoes; seeders, drills, corn and potato planters, transplanters; mowers, rakes, self binders, corn harvesters, potato diggers, etc. Lectures and laboratory practice, including setting up and testing machines. *Second semester; M., W., F., 2 to 4; three-fifths credit.*
7. Road Building. The construction of earth, macadam, and stone roads, practical work with the King road drag, road graders, etc. Field work in road drainage, leveling for cuts, grades, etc. *Second semester; at hours to be arranged. Two-fifths credit.*

Primarily for Graduates

20. Special Advanced Work. The student may arrange for continuation of his studies in any of the above courses during the second semester or the summer vacation. *Two-fifths or five-fifths credit.*

AGRICULTURAL ECONOMICS

ASSISTANT PROFESSOR TAYLOR.

26. The Elements of Agricultural Economics. This course treats of those economic principles which underlie the prosperity of the farmer and of all other classes in so far as they are dependent upon agriculture. The subject is divided into two parts. Part one considers the subject from the point of view of the farmer, and the discussion centers about those economic principles which underlie the carrying on of agriculture in such a manner as will enable the farmer to realize the largest net profits. In part two, the point of view is that of the nation as a whole, and it is attempted to discover those economic principles which should guide the agrarian statesman in his efforts to conserve and promote the agricultural interests of a country. *First semester; Tu., Th., at* 12. Assistant Professor TAYLOR.

27. Historical and Comparative Agriculture. This course consists of lectures and assigned readings on the agriculture of the Romans, on the development of agriculture in England and in the United States, and on the present status of agriculture in the most important countries, with an attempt to find the cause of historical changes and geographical differences. *Second semester; Tu., Th., at* 12. Assistant Professor TAYLOR.

THE SHORT COURSE IN AGRICULTURE

This course covers two terms of fourteen week each, beginning about the first of December, each year.

FIRST YEAR

Fourteen lectures in feeds and feeding. Assistant Professor OTIS.

Thirty-five lectures in the breeds of live stock with score-card practice additional in stock judging. Mr. FULLER.

Thirty-five lectures in soils. Professor WHITSON.

Thirty-five lectures, with seventy hours' laboratory practice in plant life. Professor SANDSTEN, Mr. MOORE, and Mr. MILWARD.

Twelve lectures in dairying. Professor FARRINGTON.

Seventy-two hours' practice in farm dairying and dairy laboratory. Mr. MICHELS.

A course in farm bookkeeping. Mr. STONE.

Fourteen hours of recitation and drill in parliamentary practice. Professor MOORE.

Fourteen lectures in farm crops. Professor MOORE.

Twenty lectures and recitations in elementary agricultural chemistry. Mr. TOTTINGHAM.

SECOND YEAR

Twenty lectures on feeding farm animals. Professor OTIS.

Twenty lectures on breeding and managing live stock with seventy hours' practice in stock judging. Professor HUMPHREY, Professor ALEXANDER, and Mr. FULLER.

Thirty-five hours of lectures and laboratory practice in drainage and meteorology. Professor WHISTON, Mr. JONES, and Mr. SANDELL.

Seventy hours of lectures and laboratory practice in horticulture. Professor SANDSTEN and Mr. MOORE.

Twenty-five lectures in veterinary science, with demonstrations. Professor ALEXANDER.

One hundred and twelve hours at workbench and forge. Professor KING and assistants.

Seventy hours of lectures and laboratory practice in agronomy. Professor MOORE and Mr. STONE.

Twelve lectures in agricultural economics. Professor TAYLOR.

Twenty lectures in bacteriology as applied to agricultural conditions. Professor RUSSELL.

Students completing the studies of this course in a satisfactory manner are granted short course certificates.

An illustrated circular describing the Short Course in detail will be sent on application to Professor D. H. OTIS, College of Agriculture, Madison, Wis.

THE WINTER DAIRY COURSE

The course begins about the first of November each year and lasts twelve weeks. It is open to persons who have had at least six months' experience in creamery or cheese factory work.

Instruction in this course in dairying is given as follows:—

1. Lectures and class-room work.

   Lectures on the constitution of milk, the conditions which affect creaming and churning, creamery management, and allied subjects. Professor FARRINGTON.

   Lectures on creamery and cheese factory bookkeeping, calculating patrons' dividends, and other matters relating to the business of the creamery and cheese factory. Mr. BENKENDORF.

   Lectures on practical cheese making. Mr. J. W. MOORE.

   Lectures with demonstrations on the influence of bacteria in the dairy. Assistant Professor HASTINGS.

   Lectures and demonstrations on the care and management of the boiler and engine. Assistant Professor THORKELSON.

   Lectures on the feeding and management of dairy stock. Assistant Professor OTIS.

   Lectures on breeding and selection of dairy stock. Professor HUMPHREY.

   Exercises in parliamentary practice. Professor MOORE.

2. Milk Testing. This embraces instruction in the laboratory in estimating the fat and other constituents in milk, butter, and cheese by methods adapted to the factory and factory operators. *Eighteen hours a week.* Professor FARRINGTON and assistants.

3. Butter Making. Butter making is carried on daily on the creamery plan. The student learns to operate the modern forms of power centrifugal separators and pasteurizing machines. They attend to the ripening of the cream, churning, and packing butter, carrying on all the operations as they would be conducted in a creamery. *Twenty-four hours a week.* Professor FARRINGTON and assistants.

4. Cheese Making. In this course daily instruction is given in the manufacture of Cheddar cheese, the operations being carried on as in the regular factory, the students being required to take careful notes and make reports upon the process. Special instruction is also given in the making of

Swiss, brick, and Limburger cheese. *Twenty-four hours a week.* Mr. MOORE and Mr. MARTY.

5. Dairy Machinery. This course provides instruction in firing and carrying for boilers, running engines, putting up shafting, cutting and fitting iron pipe, belt lacing, soldering, etc. *Twenty-four hours a week.* Professor FARRINGTON and assistants.

THE SUMMER DAIRY COURSE

In the summer course in dairying the student may enter at any time after March 1st and remain for an indefinite period. No previous preparation is required. The student will assist in all of the different operations of the University creamery, thus gaining much practical experience. Laboratory exercises and theoretical instruction will be given as required.

Examinations and Certificates

To secure a dairy certificate, a student must have spent a full term in the Dairy School and successfully passed all examinations; and further, he must have had not less than two seasons' experience in a creamery or cheese factory, one of which must follow the period spent in the Dairy School. During the second season the candidate will report the operations of his factory monthly on blanks and have his work inspected by an authorized agent of the University.

An illustrated circular giving additional information concerning the Short Winter and Summer dairy courses will be sent on application to Professor E. H. Farrington, Madison, Wis.

FARMERS' COURSE

Instruction in the farmers' course includes daily lectures for two weeks by professors and instructors connected with the College of Agriculture. A part of the day is devoted to instruction in corn judging and the judging of live stock.

An illustrated circular giving details of the course will be sent on application.

THE AGRICULTURAL EXPERIMENT STATION

OFFICERS OF THE EXPERIMENT STATION

CHARLES R. VAN HISE, President of the University.
WILLIAM A. HENRY, Director.

A. S. ALEXANDER, Veterinarian, in charge of the Department of Horse Breeding.
S. M. BABCOCK, Assistant Director and Chief Chemist.
E. H. FARRINGTON, Dairy Husbandman.
E. B. HART, Chemist.
G. C. HUMPHREY, Animal Husbandman.
R. A. MOORE, Agronomist.
D. H. OTIS, Animal Nutrition.
H. L. RUSSELL, Bacteriologist.
E. P. SANDSTEN, Horticulturist.
A. R. WHITSON, Soil Physicist.
F. W. WOLL, Chemist.
G. H. BENKENDORF, Assistant in Dairy Husbandry.
E. J. DELWICHE, Supt., Northern Wisconsin Sub-Station.
J. G. FULLER, Assistant in Animal Husbandry.
ROY T. HARRIS, Assistant in Dairy Tests, Feed and Fertilizer Inspection.
E. G. HASTINGS, Assistant Bacteriologist.
IDA HERFURTH, Executive Clerk.
CONRAD HOFFMANN, Assistant in Agricultural Bacteriology.
E. R. JONES, Assistant in Soils, Drainage, and Cranberry Investigations.
FRANK KLEINHEINZ, Sheperd.
O. G. MALDE, Assistant in Cranberry Investigations.
C. J. MCCOMB, Assistant in Animal Husbandry.
A. F. MCLEOD, Assistant in Soils.
MARTIN MEYER, Assistant in Dairying.
J. G. MILWARD, Assistant in Horticulture.
J. G. MOORE, Assistant in Horticulture.
C. A. OCOCK, Assistant in Agricultural Engineering.
G. A. OLSON, Assistant in Agricultural Chemistry.
HARVEY SANDELL, Assistant in Soils.

CHRIST SCHROEDER, Assistant in Animal Husbandry.
C. W. STODDART, Assistant Soil Physicist.
A. L. STONE, Assistant in Agronomy.
W. E. TOTTINGHAM, Assistant in Agricultural Chemistry.
IVA A. WELSH, Librarian.

The purpose of the Experiment Station is the promotion of agricultural science by investigation and experimentation. In the choice of subjects it endeavors to select those which possess the greatest importance to the farmers of Wisconsin, so far as the facilities at hand permit. The endeavor at all times is to give the investigations a fundamental character in order that the results may be real contributions to agricultural science. The station is also a means of disseminating general and miscellaneous information on agricultural topics, and its staff cheerfully devotes the necessary time to private and public correspondence and to personal interviews.

By the direction of the general government, which supplies a portion of the funds for maintaining the Station, there are issued an annual report and frequent bulletins. Twenty-three reports and 144 bulletins have been issued to date; 15,000 copies of the reports are printed annually, and the edition of the bulletins comprises from 5,000 to 25,000 copies. These bulletins and reports are free to all residents of the State upon application. The station mailing list now embraces about 18,000 names of farmers and others to whom the reports and bulletins are regularly sent.

FARMERS' INSTITUTES

INSTITUTE STAFF

GEORGE MCKERROW, Superintendent.
NELLIE E. GRIFFITHS, Clerk and Stenographer.

INSTITUTE CONDUCTORS*

Corps No. 1—W. C. BRADLEY, Hudson.
Corps No. 2—L. E. SCOTT, Neenah.
Corps No. 3—F. H. SCRIBNER, Rosendale.

*Appointed each year.

REGULAR ASSISTANTS*

GEORGE C. HILL, Rosendale. DAVID IMRIE, Roberts.
L. P. MARTINY, North Freedom.

OTHER ASSISTANTS*

C. P. GOODRICH, Fort Atkinson. C. E. MATTESON, Pewaukee.
THOMAS CONVEY, Ridgeway. R. E. ROBERTS, Corliss.
A. A. ARNOLD, Galesville. JOHN L. HERBST, Sparta.
MISS EMMA CONLEY, Wausau.

The third division of work of the College of Agriculture is the instruction of farmers who are unable to come to the University for study. This is made possible through generous legislative provisions, by which a carefully supervised system of farmers' institutes is maintained. The institutes are in immediate charge of a superintendent, who elaborates and controls the organization and maintenance of the institutes. He is aided by special conductors who assist in perfecting details and carrying the whole into effect. Members of the agricultural faculty render as much assistance as is consistent with their other duties. Experts in different departments are engaged to present special important themes. Lecturers are often brought from other states to treat on specific topics in which they are recognized authorities. Local talent is used to some extent and not the least of the educational benefits is the developing of latent ability in writing, speaking, and experimenting which has followed as a natural result from the interest awakened by this important stimulus.

During the institute season of 1906-07 one three-day, and sixty two-day institutes will be held at as many places in the state. A cooking school will be held in connection with the closing institute.

How to Secure an Institute

Institutes are placed for the most part in localities which show the greatest interest in this movement. Applications for institutes will be received by the superintendent and presented to the agricultural committee not later than Oct. 30. The committee goes over the list and carefully considers the needs and interests of each locality, and places the institutes where, in its judgment, they will prove the most helpful. In the past there have been

*Appointed each year.

more applications for institutes than it was possible to supply. Applications should be received before Oct. 15 each year.

The Farmers' Institute Bulletin

To disseminate still more widely the best matter presented and discussed at the institutes, and to give much material permanency for its own sake and for its historical value, a bulletin giving a stenographic report of the closing institute of each year is issued. Bulletin No. 20 contains a stenographic report of the closing institute held at Plymouth, in March, 1906. Sixty thousand copies of this bulletin have been issued. Eight thousand cloth bound copies will be placed in the school district libraries of the state; 35,000 will be given to the farmers in attendance at the institutes, and the remainder distributed through cheese factories, creameries, etc. Copies will be sent to all applicants living within the state, upon receipt of 10 cents to pay postage and mailing, if paper covers are desired, and 25 cents for cloth-bound covers. To those outside of Wisconsin, 25 cents for paper-covered and 40 cents for cloth-bound copies will be charged, to cover mailing and cost of publication.

THE SCHOOL OF MUSIC

STAFF OF INSTRUCTION

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
F. A. PARKER, Director. Professor of Music.

ELIZABETH KEELEY ANDERSON, Harp.
F. BACH, Mandolin and Guitar.
ADA BIRD, Piano.
MRS. MARTHA E. BRAND, Guitar and Banjo.
E. A. BREDIN, Voice, Organ, and Theory.
WINIFRED CARD CURTIS, Piano.
ADELAIDE FORESMAN, Voice.
MARY MAUD FOWLER, Piano.
CHARLES NITSCHKE, Violin and other Orchestral Instruments.
H. E. OWEN, Public School Music.
LYLA ALBINA RANSOM, Sight-Singing.
ALICE REGAN, Piano.
INGA SANDBERG, Piano.
GENEVIEVE CHURCH SMITH, Voice.
BESSIE BRAND, Secretary.

General Announcement

It is the purpose of the School of Music to furnish superior facilities for the study of music in any or all of its departments, theoretical, or practical. Instruction is offered in piano, organ, harp, singing, orchestral instruments, mandolin, guitar, and banjo, and in musical theory, choral practice, harmony, counterpoint, composition, and methods in public school music. In the study of piano or singing (voice culture) instruction is given by means of private or individual lessons, or should a sufficient number of students desire it, classes limited to three will be organized. In the study of other instruments, private lessons only are employed. In the theoretical studies students are recommended to join the University classes, but private lessons may be arranged for if preferred.

To meet the convenience of students residing either permanently or temporarily in distant parts of the city, an office and studios are provided in the Kroncke building, in addition to those in Assembly Hall at the University. Applications for lessons may be made at either place, the lessons being given where it is found to best suit the convenience of instructor and student.

The lessons vary in length and number a week, for the purpose of adequately meeting the wants of all classes of students, from those who take a large amount of work in other departments of the University to those who devote themselves especially to the study of music with little or no collateral work. In like manner the fees for special instruction vary according to the length and frequency of lessons. A schedule of fees may be found under Tuition (see Index).

It should be observed that special instruction in vocal or instrumental music of any kind may be taken by students not otherwise connected with the University, and that such students are not required to pay the incidental fee.

The general classes in harmony, counterpoint, history of music, musical composition, general methods in public school music, conducting, and principles of music education may be taken as electives by students of the College of Letters and Science, who will receive credit for them, as for other studies, freshmen excepted. These classes are likewise open to students of the other colleges and schools of the University without extra fees.

Students of the School of Music not otherwise connected with the University, may be admitted to these classes on the payment of the usual incidental fee charged to students of the College of Letters and Science ($10 per semester). The tuition fee required for students in the University who are not residents of the state is not required in the School of Music.

A statement of courses and classes follows. For a statement of credits, see Index under Music.

COURSES OF THE SCHOOL

There are two general courses in the School of Music, viz.: (1) The collegiate course, and (2) the academic course.

I. The Collegiate Course

In this course the requirements for admission are the same as for the general courses in the Course of Letters and Science, or

for adult special students, together with such proficiency in some department of music, as is stated in connection with the outlined courses of study. A graduate's diploma will be granted on the completion of this course. Four years of study are required, including the courses in musical theory, harmony (one year), and history of music, or their equivalents.

II. The Academic Course

This course is open to persons not members of the University, and also to University students who do not desire to enter the collegiate course pursuant to graduation. Students of this course may, however, be admitted to the musical classes of the University on the payment of the usual incidental fees charged to students of the College of Letters and Science ($10 a semester), but will not be considered candidates for graduation or for a diploma. If, however, at any time such students should be transferred to the collegiate course, they will, on satisfying other conditions, receive credit for studies previously taken. A certificate of excellence will be granted to worthy students of this course on examination, after not less than three years of study.

THE COURSES OF STUDY

I. COLLEGIATE COURSE

PIANO

The courses in Piano and Singing have been re-arranged to cover a period of four years instead of three. This, however, does not apply to students who entered before September, 1904. Such students may refer to the University catalogue for 1903-04.

Applicants for admission will be expected to play music of the grade of Mozart's *Sonata in D major No.* 3, Peters Edition; Loeschorn, *Op.* 52 *and Op.* 66; Bach, *Little Preludes.*

FIRST YEAR

Heller, *Op.* 46 *and* 45; Czerny, *Studies in Velocity;* Jensen, *Op.* 32; Bach, *Inventions and English Suites.*

SECOND YEAR

Bach, *Well-Tempered Clavichord;* Kullak, *Octave School,* Books I and II; Cramer, *Studies;* Czerny, *Fingerfertigkeit;* Marmontel, *Mecanisme.*

THIRD YEAR

Tausig, *Studies;* Kullak, *Book III; Gradus ad Parnassum*, 1st half; Czerny, *Toccato;* Chopin, *Preludes.*

FOURTH YEAR

Moscheles, *Op.* 70; *Gradus ad Parnassum*, 2nd half; Chopin, *Etudes.*

It is not supposed that a rigid course can be given which will meet the requirements of individual students, but the foregoing outline represents, in a general way, the character of each year's work. Etudes especially are named, because they indicate grade and character of requirements more clearly than can be done otherwise. On the other hand, these studies are supplemented by ample selections form classic and modern authors for use in the parlor or concert room.

Upon graduation students will be expected to play acceptably from memory selections of the grade of *Chromatic Fantasie and Fugue* by Bach, *Sonata, Op.* 90, by Beethoven, *Concerto in G minor* (one movement) by Mendelssohn, *La Fileuse* by Raff, and *Second Rhapsody* by Liszt.

ORGAN

No previous knowledge of organ playing is required. The student must be well grounded in piano playing, be possessed of a correct technique, and be able to read plain four-part music.

The course of study is continuous, beginning with Stainer's *Organ School* or Whiting's *First Six Months on the Organ*, and following with the larger works of Rink and Best, supplemented by special studies by Thayer, Buck, Ritter, Schneider, Volckmar, and others. Selections from Bach's organ works, Mendelssohn's Sonatas and the compositions of modern composers are used.

Careful training is given in playing church music and volun taries, the use of stops, and the mechanism of the instrument.

VOICE

The student must be able to read plain music and must have had an amount of training equal to the first half of Concone's *Fifty Lessons*, and comprising the usual technical study for the same period.

First Year: Tone placing, breathing, and phrasing; ballad singing and the sostenuto style; technical and other studies of

the grade of Bonaldi's *Six Vocalises*, Sieber's *Vocalises;* Marchesi's *Exercises, Op.* 21, Book 1.

Second Year: Concone's *Fifteen Vocalises;* Schubert's *Manual of Vocal Technique;* Marchesi's *Vocalises, Op.* 21, Book II; German and French songs, and easy oratorio and operatic arias, and recitatives.

Third Year: Schubert's *Special Studies;* Bordogni's *Bravura Studies*, and operatic and oratorio selections.

Fourth Year: Studies in bravura by Lamperti and Bordogni. Cadenzas and larger forms of execution.

On graduation the student will be expected to sing acceptably selections (according to voice and school) from such songs and arias as: "He Was Despised," "Angels Ever Bright and Fair," "I Know That My Redeemer Liveth," and "Thou Shalt Break Them," by Handel; "With Verdure Clad," Rolling in Foaming Billows," and "In Native Worth," by Haydn; "If With All Your Hearts," "It is Enough," and "O Rest in the Lord," by Mendelssohn; "Infelice," by Verdi; "Roberto, tu che Adoro," by Meyerbeer; "Una Voce," and "Pro Peccatis," by Rossini.

VIOLIN

First Year: Hermann, *Scale Studies.* Kayser, *Violin Instructor, I and II.* Herbert Ries, *Violin School, Part I.* Easy melodious solos.

Second Year: Kayser, *Violin Instructor, III.* Kayser, *Etudes, Op.* 29. Schubert, *Violin School, IV.* Herbert Ries, *Violin School, Part III.* Solos by *Viotti, Rode,* and *De Beriot.*

Third Year: Schradieck, *Violin Technic.* De Beriot, *School Part II. Etudes* by Dont, Kreutzer, and Schubert.

Solos by De Beriot, Leonard, Vieuxtemps, and Wieniawski.

THEORETICAL STUDIES

MUSICAL THEORY AND CHORAL PRACTICE

A one year course, twice a week, in the general theory of music, including notation, scale construction, intervals, distinctions of rhythm, etc., combined with a practical study of sight reading and choral singing.

This course is especially recommended to all students, whether of instrumental or vocal music, as furnishing a substantial foun-

dation for all other work; it will also be found useful for those who contemplate teaching in public, or similar schools.

HARMONY AND COUNTERPOINT*

The student must be able to read and play simple four-part music.

First year: Review of scales, and intervals, triads, seventh chords, augmented sixth chords, modulation, synopsis of suspension and appoggiatura.

Second year: Detailed treatment of modulation, suspension, appoggiatura, etc. Harmonizing melodies. Simple strict counterpoint.

Third year: Double counterpoint, canon and fugue.

HISTORY OF MUSIC

A course of lectures twice a week, extending through the year. In the last semester the lectures give a general survey of music before the Christian era, and down to the eighteenth century.

The second semester is devoted to the eighteenth and nineteenth centuries.

MUSICAL COMPOSITION

A year course, twice a week. One year of harmony is required as preparation.

PUBLIC SCHOOL MUSIC

General Course for Grade and High School Teachers

This course is designed for teachers who will 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. Students electing this course should take at least one semester's work 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 $10.

*The courses in counterpoint, etc., and in musical composition are inserted here under their proper headings, because they are frequently taken as electives, but they represent graduate work for the students of the School of Music.

Course for Supervisors

This course is designed for those who wish to fit themselves for the special work of the supervisor of music in public schools. It includes the following subjects:

Rote songs and their application to school work. Elements of music as presented in the grades, and the best methods of teaching shown. Study of the child voice. Sight-singing and ear-training. Practice in teaching. Elementary harmony and musical form as presented in the high school. The problems of the supervisor and how to meet them. Study and interpretation of songs. Art of conducting. Practice in conducting.

The class meets three times a week throughout the year, although a student who has had a sufficient previous training can complete the course in one semester. Certificates are granted to those who complete the course satisfactorily. This course involves a special fee. See Index for Tuition, under Music.

II. ACADEMIC COURSE

There are no requirements for entrance. Students are received and graded according to ability and amount of previous study. This course in all departments leads up to and overlaps the collegiate course. Students after reaching the proper stage of preparation may be transferred to the collegiate course, or may remain in the academic course, the work of the last three years being identical in both courses. But no certificate of excellence will be issued to any student who is not thoroughly fitted to enter the third year of the collegiate course.

GUITAR, BANJO, AND MANDOLIN

In response to the demand growing out of the popularity of these attractive instruments, the School of Music provides ample and excellent opportunities for their study. Special attention is given to expression, technique, and proper fingering. In general, correct methods leading to the highest efficiency are employed.

Text-books for Guitar: Carcassi, Sor, Ferranti, Holland, and Langley.

Text-books for Banjo: Dobson, Stewart, Henning, and others.

Text-books for Mandolin: School of Wessenberg, and Progressive Studies by Guiseppi, Branzoli, supplemented by solo selections.

ORCHESTRA

The University orchestra is composed of about fifty 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-fifth for each of the two following semesters.

BAND

A military band has been organized, open to all students. Two rehearsals are held each week. Freshmen and sophomores belonging to the band receive credit for military drill.

CHORAL UNION

The Choral Union is an organization of students of the University and citizens of Madison for the purpose of studying the oratorios and larger choral work of ancient and modern authors, interspersed with lighter part-songs and glees, and of adequately presenting the same in public performances. Very successful perpormances of Handel's *Messiah* and *Judas Maccabaeus*, Haydn's *Creation*, and Mendelssohn's *Elijah* and *St. Paul* have been given, and other works of similar magnitude will follow.

Applicants for membership are expected to be able to read plain music at sight. The rehearsals are held weekly from October until May. The annual membership fee is one dollar.

RECITALS AND CONCERTS

Student recitals, free to all students, and open to all others by invitation, are held at intervals during the collegiate year. Recitals and concerts by eminent artists are given from time to time at a low price to students of the School of Music.

TUITION

The school year is divided into two semesters of eighteen weeks each, but the tuition for musical instruction may be paid by the half-semester.

Half-Semester of Nine Weeks

Two Lessons a Week

PIANO

	½-hour lessons	¾-hour lessons	Hour lessons
Miss Bird	$18.00	$25.00	$30.00
Miss Regan	18.00	25.00	30.00
Mrs. Sandberg	16.00	22.00	27.00
Mrs. Curtis	13.50	20.00	25.00
Miss Fowler	12.00	16.00	20.00

VOICE

Miss Foresman	$18.00	$25.00	
Miss Smith, or Mr. Bredin	16.00	22.00	

SIGHT-SINGING

Miss Ransom	$12.00	$16.00	$20.00

ORGAN

Mr. Bredin	$13.50	$22.00	$27.00

VIOLIN, GUITAR, BANJO, HARP

Mr. Nitschke, Mrs. Brand, Mrs. Anderson	$ 9.00	$13.50	$18.00

MANDOLIN

Mr. Bach	$ 6.00	$ 9.00	$12.00

One Lesson a Week

PIANO

Miss Bird	$10.00	$13.50	$17.00
Miss Regan	10.00	13.50	17.00
Mrs. Sandberg	9.00	12.00	15.00
Mrs. Curtis	7.50	11.00	13.50
Miss Fowler	7.00	10.00	12.00

VOICE

Miss Foresman	$10.00	$13.50	
Mr. Bredin, or Miss Smith	9.00	12.00	

SIGHT-SINGING

Miss Ransom	$ 7.00	$10.00	$12.00

ORGAN

	½-hour lessons	¾-hour lessons	Hour lessons
Mr. Bredin	$ 7.50	$11.00	$13.50

VIOLIN, GUITAR, BANJO, HARP

Mr. Nitschke, Mrs. Brand, Mrs. Anderson	$ 4.50	$ 6.75	$ 9.00

MANDOLIN

Mrs. Bach	$ 3.60	$ 5.40	$ 6.75

Diploma Fee, $5.00.

PUBLIC SCHOOL MUSIC

Course for supervisors of public school music, per semester, $20.00
Private lessons in public school music, each, $ 2.00
Public school certificate, $ 1.00

Theoretical studies may be taken in the University classes, and those who are not otherwise connected with the University are expected to pay the incidental fee of the College of Letters and Science which is $10.00 a semester. The fee, however, is not required of those taking only individual lessons in singing, or on some instrument.

Students are not received for less than half a semester except by permission of the Director of the School of Music. Students are expected to pay the tuition fees by the half semester or semester in advance.

No student is entitled to lessons until tuition has been paid.

No deduction can be made for absence from lessons, except for long continued illness, in which case the School of Music will share the loss equally with the student.

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 pianos in Music Hall may be used for practice for a limited number of hours daily by students of the School of Music on payment of a fee of from four dollars to ten dollars per semester. Pianos may be rented from dealers at from three to six dollars a month.

The office of the Director in Assembly Hall at the University will be open for several days before the opening of each semester for the reception of pupils and assignment of lessons. After the opening of the University the Director may be found daily at Assembly Hall, from 10 to 11, or at the office in the Kroncke building from 9 to 10.

For further information, address

F. A. PARKER, Director, 14 W. Gilman St., or
MISS BESSIE BRAND, Secretary School of Music,
Madison, Wis.

THE WASHBURN OBSERVATORY

STAFF

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
GEORGE C. COMSTOCK, Ph. B., LL. B., Director. Professor of Astronomy.
ALBERT S. FLINT, M. A., Astronomer.

S. R. HATCH, Student Assistant.
W. L. SCHWALBE, Student Assistant.
ANDREW THOMA, Student Assistant.
WINIFRED HATCH, Clerk.

The Washburn Observatory was established in the year 1878 through the munificience of the late Gov. C. 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 of 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 eye-pieces. A meridan circle, by A. Repsold & Sons, of Hamburg, with collimators, transit micrometer, and the usual accessories of such an instrument. The objective of the instru-

ment 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, all excellent time-pieces, and a chronograph, by Fauth & Co., of Washington.

In the Student's 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 subsidary 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 eleven 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

STAFF

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
HENRY E. LEGLER, Secretary of the University Extension Division. Secretary of the Wisconsin Free Library Commission.
W. H. LIGHTY, Ph. B., Director of Correspondence Study.
FRANK A. HUTCHINS, Field Organizer.
JULIA A. FLISCH, Assistant and Librarian.

T. S. ADAMS, Ph. D., Assistant Professor of Political Economy.
E. D. ANGELL, Assistant Professor of Physical Training.
ARTHUR BEATTY, Ph. D., Instructor in English.
W. G. BLEYER, Ph. D., Assistant Professor in English.
ELIOT BOARDMAN, A. B., Assistant in French.
STORM BULL, M. E., Professor of Steam Engineering.
C. F. BURGESS, E. E., Professor of Applied Electrochemistry.
D. E. BURCHELL, A. M., Professor of Business Administration.
W. B. CAIRNS, Ph. D., Assistant Professor of American Literature.
VICTOR COFFIN, Ph. D., Assistant Professor of European History.
J. L. CONGER, A. M., Assistant in American History.
G. W. COREY, B. S., E. M., Assistant in Mineralogy.
W. F. DEARBORN, Ph. D., Instructor in Education.
R. H. DENNISTON, Ph. D., Instructor in Botany.
T. H. DICKINSON, A. M., Instructor in English.
J. F. DILWORTH, A. B., Instructor in History.
H. W. DOUGHTY, Ph. D., Instructor in Chemistry.
E. P. R. DUVAL, A. B., Instructor in Mathematics.
E. C. ELLIOTT, Ph. D., Associate Professor of Education.
J. C. ELSOM, M. D., Professor of Physical Training and Director of the Gymnasium.
R. T. ELY, Ph. D., LL. D., Professor of Political Economy.
N. M. FENNEMAN, Ph. D., Professor of Geology.
C. R. FISH, Ph. D., Assistant Professor of American History.
J. C. FREEMAN, LL. D., Professor of English Literature.
W. D. FROST, Ph. D., Assistant Professor of Bacteriology.

S. W. GILMAN, LL. B., Instructor in Business Administration.
E. A. GILMORE, A. B., LL. B., Professor of Law.
S. H. GOODNIGHT, Ph. D., Instructor in German.
N. C. GRIMES, A. B., Instructor in Mathematics.
E. M. GRIFFITH, Lecturer of Forestry. Secretary of the State Forestry Commission.
R. H. HESS, M. S., Assistant in Political Economy.
J. F. HAUSMANN, Ph. D., Instructor in German.
A. R. HOHLFELD, Ph. D., Professor of German.
H. C. HORACK, Ph. B., LL. B., Assistant Professor of Law.
W. O. HOTCHKISS, B. S., Instructor in Geology.
CAROLINE HUNT, A. B., Professor of Home Economics.
ELLEN A. HUNTINGTON, A. B., Instructor in Home Economics.
D. C. JACKSON, C. E., Professor of Electrical Engineering.
H. H. JACOBS, M. A., Warden, University Settlement, Milwaukee.
JOSEPH JASTROW, Ph. D., Professor of Psychology.
LOUIS KAHLENBERG, Ph. D., Professor of Physical Chemistry.
L. M. LARSON, Ph. D., Instructor in History.
H. E. LEGLER, Secretary of the Wisconsin Free Library Commission.
C. K. LEITH, Ph. D., Professor of Geology.
VICTOR LENHER, Ph. D., Associate Professor of Chemistry.
M. O. LORENZ, Ph. D., Instructor in Political Economy.
R. L. LYMAN, A. B., Assistant Professor of Rhetoric and Oratory.
CHARLES MCCARTHY, Ph. D., Lecturer on Political Science.
L. G. MCCONACHIE, Ph. D., Instructor in Political Science.
J. G. D. MACK, M. E., Professor of Machine Design.
LAWRENCE MARTIN, A. M., Assistant in Geology.
A. S. MAYHEW, Assistant Professor of Physical Training.
E. W. OLIVE, Ph. D., Lecturer in Botany.
J. E. OLSON, B. L., Professor of Scandanavian Languages and Literature.
M. V. O'SHEA, B. L., Professor of the Science and Art of Education.
M. C. OTTO, A. B., Scholar in Philosophy.
W. D. PENCE, C. E., Professor of Railway Engineering.
J. D. PHILLIPS, B. S., Professor of Drawing.
A. M. PITMAN, Ph. D., Instructor in Latin.
CARL PRAY, B. A., Professor of History, State Normal School, Milwaukee.
EDUARD PROKOSCH, Ph. D., Instructor in German.
J. F. A. PYRE, Ph. D., Assistant Professor of English Literature.

P. S. Reinsch, Ph. D., Professor of Political Science.

H. S. Richards, LL. D., Dean of College of Law. Professor of Law.

A. W. Richter, M. E., Professor of Experimental Engineering.

E. A. Ross, Ph. D., Professor of Sociology.

H. L. Russell, Ph. D., Professor of Bacteriology.

W. A. Scott, Ph. D., Director of the Course in Commerce. Professor of Political Economy.

E. P. Sandsten, Ph. D., Professor of Horticulture.

F. C. Sharp, Ph. D., Professor of Philosophy.

Grant Showerman, Ph. D., Assistant Professor of Latin.

C. F. Smith, Ph. D., Professor of Greek and Classical Philology.

E. R. Smith, A. B., Instructor in Mathematics.

H. L. Smith, A. B., LL. B., Professor of Law.

Graham Taylor, Director, Chicago Institute of Social Science.

H. C. Taylor, Ph. D., Assistant Professor of Political Economy.

H. J. Thorkelson, M. E., Assistant Professor of Steam Engineering.

R. G. Twaites, LL. D., Secretary of the Wisconsin Historical Society.

F. J. Turner, Ph. D., Professor of American History.

F. E. Turneaure, C. E., Dr. Eng., Dean of the College of Engineering. Professor of Engineering.

George Wagner, M. A., Instructor in Zoology.

H. C. Wolff, M. S., Instructor in Mathematics.

E. C. Wooley, Ph. D., Instructor in English.

Note.—In addtiion to the regular members of the University Extension staff, other members of the University faculty are willing to lend their services to the work that the University is carrying on throughout the State. As, however, University duties will not admit of their accepting all invitations, it will be necessary for the Secretary to consult with them in each case. Correspondence will be gladly received by the Secretary regarding lectures to be given by these members of the Faculty, as well as by those on the University Extension staff.

It is the aim of the University to lend its aid to all educational activities of any kind which are being carried on in the State. It regards the fulfillment of this aim as one of its greatest obligations towards the people of the commonwealth, and one in the pursuit of which it has always been active. Through its system of high school inspection, and its intimate relation with the colleges and Normal schools, and with the teachers' conventions, it has helped to systematize the educational work of the State, and raise it to a higher level of efficiency.

Most of this work, however, has been carried on among those who have the education of others in charge. There is another great class to which the University wishes to extend its stimulus and guidance; namely, those persons who are carrying on their own education. They have been aided in their efforts, to some extent, by short courses of lectures and demonstrations, given in their local centers as well as at the University. In fact, along certain lines, this Extension work of the University has won for it a national reputation. This is true particularly of the work of the Farmers' Institutes, which have been conducted throughout the State many years by the College of Agriculture. Recently this Extension work abroad has been supplemented by Extension work at home, by the establishment of a Farmers' Course in Agriculture, which is in session at the University each year during the first two weeks of February. The programmes of the Farmers' Course as well as those of the Farmers' Institute are of an extremely practical character, and this work has bestowed upon the State benefits which, on its agricultural side, are incalculable.

In connection with the Farmers' Course in Agriculture, another branch of University extension at home, called the Housekeepers' Conference, is carried on at the University under the auspices of the department of Home Economics. This work is likewise of a practical character, consisting of talks and demonstrations on the preparation of food, sanitation, the judging of textiles for household use, etc.

The Extension work along other lines of educational activity has not as yet been so well systematized, but even here much has been done. During the last college year over forty members of the faculty, exclusive of the Agriculture faculty, lectured in eighty-three localities, giving a total of over two hundred lectures.

The University, however, is not satisfied with this limited success, and aims, by systematizing the educational work among adults through its University Extension office, to widen its sphere of influence. It realizes the importance of such work for the future well-being of our country, and for the maintenance of our democratic institutions, and desires to stimulate it in every possible way. The nature of the assistance which it can offer will vary, of course, with the nature of the demand. It will be its aim through the University Extension office to meet each demand in the way best fitted to obtain the desired results.

The University Extension Division is fortunate in having in

its work the coöperation of the Wisconsin Free Library Commission, the secretary of which is also secretary of the Extension Division as well as a member of its staff of lecturers. This Commission is in intimate contact with the smaller communities of the State, which it serves in many ways, especially by loaning collections of books and periodicals to such as have no adequate library facilities of their own.

Lecture Courses

A list of lecture courses offered by the University Extension Division is given below, together with a statement of the expenses involved. These courses consist, usually, of six lectures, given by the same lecturer, though arrangements can be made for fewer or even for single lectures. It is also possible to arrange for courses of six lectures, each given by a different lecturer, and treating of different subjects. Specimen courses of this kind are given in the University Extension announcement, which will be sent upon application to the Secretary.

Where such 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.

Women's Clubs

In addition to providing lecturers, the University Extension will aid the Women's Clubs of Wisconsin as much as possible in planning their work for the year, or for several years in advance. It will be glad to supply topics for study, as well as outlines of these topics, suggesting the best way of taking them up, and likewise suggesting the best books and periodicals bearing upon them. In many cases small collections of these books and periodicals can be borrowed for a considerable period by applying to the Wisconsin Free Library Commission.

Study Clubs

The University Extension Division 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 University Extension Division will be of further assistance either through the 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. In the first case, the class will be in charge of a member of the Extension staff, who will meet with it weekly or bi-weekly for a lecture or demonstration, the work to extend over a period of six or twelve weeks. In the second case, the class will be in charge of a competent University graduate residing in the local center, who has submitted a satisfactory outline of the proposed work to the Secretary of University Extension. In the third case, the local instructor will meet with the class once or twice a week, and these meetings will be supplemented by a weekly or bi-weekly meeting with a member of the Extension staff, for a lecture or demonstration.

Clubs can be formed to pursue the study of almost any subject, and to meet the demands of almost any group or organization of persons. For example, classes for grammar school and high school teachers, to take up some branch of their class work; classes for mechanics, to take up mechanical drawing, steam, structural, or railway engineering, etc; classes for business men, accountants, and bookkeepers, bank clerks, etc., to take up the study of business administration, purchasing, advertising, credit business, transportation, public finance, etc.; classes for members of labor organizations, to study some specific problem connected with their trade or industry, or some problem of general interest, as factory legislation, economic history and theory, etc.

The work of these clubs can be supplemented by work at the Summer School of the College of Letters and Science, or the Summer School for Artisans, conducted by the College of Engineering. These sessions begin immediately after the close of the university year and continue for six weeks.

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.

Debating Societies

The University Extension Division, in coöperation with the Legislative Reference Department of the Free Library Commis-

sion and the Department of Rhetoric and Oratory, will supply debating societies in any part of the State with subjects for discussion and references upon them. As far as possible, these will be supplemented by the loan of material for the study of such topics. In any event, where a society, six o'clock club, advancement association, or any body of citizens is engaged in serious study or investigation, or where county, village, or town boards are making investigations of public moment, arrangements can be made with the University Extension Division for coöperation or for lectures.

An Extension Bulletin is issued giving many valuable suggestions to debating clubs and bibliographies for the study of a large number of subjects of public interest most frequently discussed. Members of the Extension staff will give direct help in organizing societies or reorganizing old ones, and will, when possible, visit such societies.

Whenever public interest has been aroused on some subject of vital interest, arrangements may be made for one or more lectures by members of the Extension staff.

Teachers' Conventions and Institutes

The University Extension Division will provide speakers for these meetings as far as the regular work of the University will allow.

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 with the speaker desired, through the Secretary of the University Extension Division.

Expenses

The attention of persons interested in University Extension is called to two acts passed by recent legislatures. In 1901 an act was passed empowering public school boards to provide free lectures to be maintained at public expense, and to give the use of the school buildings for that purpose. Another act, passed in 1905, empowers trustees of public libraries to give the use of the auditorium in their buildings for public lectures, etc.

Local Expenses.—These include hall rent, printing, advertising, etc., and the lantern and operator, where the lecture is illustrated.

UNIVERSITY CHARGES:—(1) Lecturer's Fee. The fee for a course, given by one lecturer, is $15 per lecture: e. g., for a course of three lectures, $45; for one of six lectures, $90. Most of the courses include six lectures. The fee for a single lecture is $20.

(2) The lecturer's traveling expenses and hotel bills, including sleeping car and meals when necessary. Where a lecturer delivers two or more lectures, in neighboring centeres, these charges are divided among them.

EXPENSES OF STUDY CLUBS.—Where classes are conducted by a local instructor, with or without the coöperation of a member of the Extension staff, the fees for instruction must be determined by arrangement with him. The Secretary of the University Extension Division will be glad to help make satisfactory arrangements. Charges for class talks and demonstration by members of the Extension staff are the same as for the public lectures.

SYLLABUS.—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.

The Secretary will be glad to furnish more detailed information regarding any branch of this work, and invites correspondence. Bulletins will be issued from time to time, stating in greater detail the work of the Extension office. These will be sent on application. Address all communications to Henry E. Legler, the Secretary of the University Extension Division, Madison, Wis.

LECTURE COURSES

Philosophy

Professor JOSEPH JASTROW. Illustrations of Psychological Principles; The Subconscious.

Professor F. C. SHARP. Problems of Moral Progress; Psychology.

Education

Professor M. V. O'SHEA. Applications of Psychology to Education and Life; Modern Education; Contemporary Educational Ideals.

Associate Professor EDWARD C. ELLIOTT. The Evolution of the American School Building; Politics and American Education; Industry and American Education.

History

Assistant Professor VICTOR COFFIN. The Transition from the Old Regime to the Nineteenth Century; The Political Development of the Chief European States in the Nineteenth Century.

Secretary Henry E. Legler. The Evolution of the Book and the Growth of Democracy (Illustrated); Phases of Wisconsin History (Illustrated); Wisconsin's Part in Seven Wars; Don Quixote, Robinson Crusoe, and some other (Illustrated).

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 Lewis and Clark Expedition; 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).

Professor CARL E. PRAY. American Political and Constitutional History since 1816; English Political and Constitutional History, 1600-1900.

Dr. L. P. Kellogg. Great Britan and Her Possessions.

Economics

Associate Professor T. S. ADAMS. Labor Problems; Problems in Taxation.

Sociology

Professor E. A. ROSS. Race and Society; The Psychic Life of Society; The Mind of the Mob; The Near Future of American Society; Modern Sin and the Grading of Sinners; Pessimism and the Way Out; Education and Society; Tunis, the Western Outpost of the Orient (Illustrated).

Rev. H. H. JACOBS. Concrete Problems in Sociology.

Professor GRAHAM TAYLOR. Human Partnerships; The Ethics of Industry; Studies in Social Biography; Social Tendencies of Modern Industrialism; Philanthropic and Social Service.

Political Science

Professor P. S. REINSCH. Political Japan; The Opening of China; Russion Imperial Politics; British India; Asiatic Unity; The United States as an Oriental Power.

Assistant Professor S. E. SPARLING. Municipal Government; Our National Capital (Illustrated); Madison Park and Pleasure Drives.

Dr. CHAS. MCCARTHY. Defects in Representative Government.

Travel, Life, and Literature

Professor C. F. SMITH. Greek Life; Mycenean Civilization; Homeric Life; Private Life of the Greeks. (All illustrated.)

Assistant Professor GRANT SHOWERMAN. Greek Architecture; Greek Sculpture; Historic sites in Greece; Life of the Ancient Greeks; Historic Sites in Italy; Ancient Rome and its Remains; The Life of the Ancient Romans; Masterpieces of Classical Literature; Modern Italy and its Life. (All illustrated.)

Professor J. C. ELSOM. Among the Rockies; Highways and Byways of the South. (Both illustrated.)

Assistant Professor E. D. ANGELL. Oberammergau and its Passion Play. (Illustrated.)

Scandinavian History and Literature

Professor JULIUS E. OLSON. Early Scandinavian History and Literature; Modern Norwegian Authors.

German Life and Literature

Professor A. R. HOHLFELD. Goethe: The Man and the Poet; The German Drama of the Nineteenth Century; Glimpses of Modern Germany.

Mr. SCOTT HOLLAND GOODNIGHT. Bismarck: His Life and Work; Berlin and Vicinity; The Rhine Region. (All illustrated.)

English Life and Literature

Professor J. C. FREEMAN. English Life and Literature: Shakespeare; The great Epics of the World; American Life and Letters; Who Wrote Shakespeare? Shakespeare, the Gentleman; English Sonnets and Sonnetteers; Modern Education, Does it Pay? Beyond Sea; The Netherlands and the Rhine; A Summer in Great Britian; Italian Days; Wonderland; Uncle Sam Abroad, or our Consular Service; Our Diplomatic Service.

Assistant Professor J. F. A. PYRE. American Writers and American Culture; Typical English Poems; Art and Life; Hamlet; Robin Hood; Wordsworth, Byron (Illustrated); Browning; Kipling; Lowell.

Assistant Professor WILLARD G. BLEYER. The Life History of Words; Talk on Writing English.

Assistant Professor ROLLO LU VERNE LYMAN. The Art of Public Address; Oratory in American History; Rudyard Kipling, with readings.

Dr. T. H. DICKINSON. Present Day Tendencies in the Drama; English Drama in the Nineteenth Century.

The Physical Sciences

Professor LOUIS KAHLENBERG. Chemistry.

Professor EDWARD KREMERS. Pharmaceutical Chemistry.

Professor H. L. RUSSELL. Microbes and Their Work; Man and Microbes; Milk Supplies and Public Health; Prevention and Treatment of Consumption; Water supplies and Disease; Insects and Disease. (All illustrated.)

Assistant Professor W. D. FROST. Communicable Diseases: Their Cause and Prevention.

Mr. GEORGE WAGNER. Zoology (Illustrated).

Home Economics

Professor CAROLINE L. HUNT. The Extension of Private Housekeeping.

Miss ELLEN A. HUNTINGTON. Food; Modern Kitchen Equipment.

Business Administration

Professor D. E. BURCHELL. Organization and Systems; Business Problems; Advertising. (All illustrated.)

Engineering

Professor STORM BULL. Steam Engines, Steam Turbines; Gas Engines. (All illustrated.) Superheated Steam.

Assistant Professor H. J. THORKELSON. Boilers; Compressed Air Machinery. (Illustrated.)

Professor C. F. BURGESS. Sir William Siemans; The Manufacture and Distribution of Gas; Electric Furnaces. (All illustrated.)

Professor J. D. PHILLIPS. The Relation of Manual Training to the Curriculum. (Illustrated.)

Lives of Famous Engineers.—Thomas Telford, by Dean F. E. TURNEAURE; George Stephenson, by Assistant Professor H. J. B. THORKELSON; John Ericsson, by Professor J. G. D. MACK; George H. Corliss, by Professor A. W. RICHTER, Joseph Henry, ————————; Sir William Siemens, by Professor C. F. BURGESS.

Agriculture

Professor EMIL P. SANDSTEN. How to Plant and Care for Shade Trees. The Fruit and Vegetable Garden. (Illustrated.)

Physical Training

Professor J. C. ELSOM. Physical Training. The German System of Gymnastics.

Professor E. D. ANGELL. The Educational Value of Play; The History and Development of Physical Training; The Significance of the Playground; Play in the Schoolroom. (All illustrated.)

Assistant Professor ABBY SHAW MAYHEW. Physical Training.

Forestry

State Forester E. M. GRIFFITH. Practical Forestry in Wisconsin (Illustrated).

CORRESPONDENCE-STUDY DEPARTMENT

PURPOSE

The constant aim of the Regents has been to make the University the center of every movement that 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.

The University is reaching out a helping hand to every citizen. It plans to add to the resources of life, of education, and of industry—to give practical assistance to the farmer and mechanic, to the professional man and the business man, to the employer and the employee, to teacher and to student, to housekeeper and to home maker.

The possibility of teaching by correspondence has already 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 work,

teaching is personal and individual. Every student prepares and recites the whole lesson, comes into contact with the teacher as an individual, not as a member of a large class. Correspondence work employs the spare time of the student, gives him an interest besides his daily work. It can be done at home, and thereby gives the home a new influence and charm. Correspondence work, moreover, throws a man upon his own resources and makes him self-reliant and self-determining.

There is scarcely a man or woman to whom the benefits of correspondence work may not apply, but it is especially helpful,

(1) To those who are compelled to labor for daily subsistence, yet wish to advance themselves in their own lines of work.
(2) To the man who is too old to go to school, who yet finds a need for more knowledge in his own profession.
(3) To the student who is preparing for college or university.
(4) To the teacher who finds new demands made upon her by the changing requirements of education.
(5) To the young man or woman who wishes to prepare for a business career.
(6) To the isolated man who desires some interest outside himself.
(7) To housekeepers and homemakers who seek practical adjustment to the changing conditions of our times.
(8) To practical men in business and the professions, to those in public service—in fact to all who are eager for knowledge, who are reaching out for mental stimulus, and who desire to keep abreast of the times, the work of the Correspondence Department must appeal.

To meet these needs the University has organized this new department. It is ready to answer the demands of the people if they will but make them known.

PLAN

The work of the Correspondence Department as at present organized, plans to give one or more courses in the following lines:

Agriculture.
Business and Industry.
Engineering,
Electrical, Mechanical, Steam, Stationary, Civil, and Sanitary.

Mechanical Drawing.
Highway Construction.
The Languages,
French, Spanish, German, Greek, Latin.
History,
Ancient, Medieval, and Modern.
Home Economics.
Political Economy.
Political Science.
Sociology.
Philosophy.
Education.
Mathematics.
English and Literature.
Physical Science,
Bacteriology, Botany, Geology, Chemistry, etc.
Law.
Pharmacy.

These courses are prepared by the members of the University Faculty, and each course represents a definite amount of work corresponding to an equivalence of work done in residence at the University. The unit course will be divided, where practical, into forty weekly lessons. Such a course represents an equal amount of work to that done in residence at the University in a full five recitation hour study a 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 Department wishes to make its work thorough and permanent, and the various courses have been arranged to work in harmony with the short courses and the Summer Session.

METHOD

I. Procedure

The method of work is as follows: The student who wishes to undertake correspondence study, should first select such course or courses as he may wish, 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. 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. Each lesson will be returned to the student with such corrections, explanations, and suggestions as may be needed. List 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.

Examinations are optional with the student, but are required where credits are wanted. These examinations must be taken at the University or under conditions approved by the University.

II. 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. All that is needed is a good elementary education and a willingness and persistency for study.

(3) 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 will endeavor 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 interest of the student, it reserves to itself the right to reject or to advise change or discontinuance.

(4) Correspondence students will be expected to complete a unit course within twelve months from date of registration.

(5) During an Instructor's vacation, a substitute will be provided to carry on such course or courses, if possible.

(6) No fee is refunded because of a student's inability to enter upon or pursue a course for which he has once registered.

EXPENSES

(1) The price of a full unit course of forty lessons is twenty dollars ($20.00), payable in advance. This fee covers the entire expense of instruction, and postage *one way*. Where a course is

less than a unit, it is offered as a convenient fraction (1-2, 1-4, 1-5, etc.) and the price charged or credit given is a corresponding factor of the unit, unless otherwise stated.

(2) All necessary text-books, drawing outfits, etc., are extra. These may be ordered through the department at a minimum cost to the student.

(3) A course may be paid for in monthly payments of ten dollars when a student finds it necessary. In this plan the general rule of payment in advance applies.

(4) When the student registers simultaneously for more than one unit course, the fees shall be two courses for thirty-five dollars ($35.00); three courses for fifty dollars ($50.00).

(5) Money should be sent to University Extension Division, University of Wisconsin, Madison, Wis., by postal or express order, or by Milwaukee or Chicago draft, made payable to University of Wisconsin.

UNIVERSITY CREDIT

(1) Persons who are twenty-one or more years of age, or 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. The maximum credit granted for work done by correspondence study, however, may not exceed one-half the unit hours required for graduation.

(2) 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.

(3) Work taken for credit may not be done by any student while in attendance at any institution of learning.

(4) In special cases credit may be allowed for correspondence-study courses of preparatory grade to satisfy partial entrance requirements to the University.

(5) 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, provided 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.

(6) 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.

(7) 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 offered. Courses which are satisfactorily completed have, therefore, a definite value, and all students who sucessfully complete such courses will be awarded certificates of the grade in which they are taken.

LECTURE STUDY CLASSES

Regulations

(1) In the case of any Wisconsin Normal School authorized by the Normal School authorities to enter into relations with the Extension work of the University, the President of such school may nominate to the President of the University members of his faculty for lecture-study and correspondence-study courses, who are, in his judgment, especially qualified to conduct such classes.

(2) The President of the University, following the regular practice of consulting with the departments concerned, may recommend such instructors for appointment on the Extension faculty of the University by the regents of the University of Wisconsin.

(3) As in the case of other work in the University, the departments concerned shall approve the plan of courses, and shall report to the President of the University upon the library and laboratory facilities for such work. They shall also have the right to visit the classes and pass upon the examination papers for the course.

(4) The instructor of such classes shall file with the University Extension Division before teaching such class, a complete detailed syllabus of such course or courses; a detailed description of the work; a complete description of facilities for such courses, such as access to reference books, laboratories, etc. He shall also file with the University Extension Division a complete list of his

pupils, the amount of fees he receives, and the records of each pupil. He shall also file the corrected examination papers with the Extension Division, and such other records as may from time to time be required by that Division.

(5) All such students shall be regularly enrolled in the Extension Division in the manner prescribed by that Division.

(6) The fees charged shall be regulated by the University Extension Division which shall receive its usual share of such receipts.

(7) These rules for credits and for the arrangement with the Normal Schools are made for the year ending July 1, 1907. Nothing in these rules shall be interpreted to bind the University to similar regulations for another year.

Credits

Credit for work done in lecture-study classes shall be estimated on the same basis as for regular University work. For illustration, a class meeting one hour per week through one academic year would be entitled to two-fifths credit for one semester

The University Registrar shall not apply toward graduation from the University, credits received by correspondence and lecture study courses until after the student shall have satisfactorily completed one year in residence.

The maximum credit obtainable by work in absentia under the various systems of University Extension shall not exceed one-half the unit hours required for graduation.

CORRESPONDENCE-STUDY COURSES

Philosophy

MR. OTTO

Course 1. Ethics.

Education

PROFESSOR O'SHEA, ASSOCIATE PROFESSOR ELLIOTT, AND DR. DEARBORN

Course 1. Principles of Teaching.
Course 2. The Development of Childhood and Youth.
Course 3. Educational Psychology.
Course 6. History of Education.
Course 7. Epochs in American Educational History.
Course 8. Administration and Supervision of Education.

History

PROFESSOR TURNER, ASSISTANT PROFESSOR FISH; DR. LARSON, MR. DILWORTH, AND MR. CONGER

Course 2. American History 1760-1830.
Course 3. American History 1830-1876.
Course 6. English History.
Course 12. Medieval History.
Course 20. Ancient History.

Political Economy

PROFESSORS ELY, SCOTT, ROSS, ASSISTANT PROFESSOR TAYLOR, AND DR. LORENZ

Course 1. Elements of Political Economy.
Course 2. The Labor Movement and Socialism.
Course 3. Transportation.
Course 6. Agricultural Economics.
Course 7. Commercial Geography.
Course 10. Elements of Money and Banking.
Course 11. Practical Banking.
Course 15. Social Psychology.
Course 16. General Sociology.
Course 17. Practical Sociology.

Business Administration

PROFESSOR BURCHELL AND MR. GILMAN

Course 1. Business Forms, Credit Instruments, and Funding Operations.
Course 2. Business Correspondence.
Course 3. Business Organization.
Course 4. Bookkeeping.
Course 5. Commercial Accounting.
Course 6. Cost of Production and Factory Accounting.
Course 7. Financial Accounting.
Course 8. Office Appliances and Systems.
Course 9. Advertising.
Course 10. Salesmanship.
Course 11. Markets and Buying.
Course 12. Credits and Collections.
Course 13. Financial Institutions.
Course 14. Practical Problems in Business Administration.

Political Science

DR. M'CONACHIE

Course 1. Elementary Political Science.
- (a) Government, national, state, and municipal; special attention to the judiciary.
- (b) Government, national, state, and municipal; special attention to the executive.

Course 2. The Law and Politics of the Press.
- (a) The Law of the Press.
- (b) The Politics of the Press.

Course 3. Legislatures and Political Parties.
- (a) Organization and Procedure of American Legislative bodies.
- (b) Political Parties and Campaigns.

Course 4. American Diplomacy and World Politics.
- (a) The History and Principles of American Diplomacy with the present organization and activities of the Department of State.
- (b) Important living questions in International Politics.

Course 5. Constitutional and International Law.
- (a) Constitutional Law; History, Interpretation, Comparison.
- (b) The Law of Nations; History, Progress, Present aspects.

Greek

PROFESSOR SMITH AND DR. PITMAN

Course 1. Elementary Greek—(summer session).
Course 2. Zenaphon's Anabasis.
Course 3. Homer's Iliad I-III or Odyssey VI-VIII.
Course 4. New Testament Greek.

Latin

DR. PITMAN

Course 1. Elementary Latin.
Course 2. Caesar.
Course 3. Cicero.
Course 4. Vergil: Aeneid.
Course 5. Elementary Prose Composition.

Course 6. Advanced Prose Composition.
Course 8. Roman Literature.
Advanced Reading Courses in Authors commonly read in colleges.

French

MR. BOARDMAN

Course 1. Beginners' French.
Course 2. Elementary French.
Course 3. Intermediate French.
Course 4. Technical French.
Course 10. French Novel, 19th Century.

Spanish

MR. BOARDMAN

Course 1. Beginners' Spanish.

German

DR. PROKOSCH AND DR. HAUSSMANN

Course 1. Elementary German, Part A.
Course 2. Elementary German, Part B.
Course 3. Intermediate German, Part A.
Course 4. Intermediate German, Part B.
Course 6. Scientific German.
Course 7. Commercial German.
Course 8. Critical German Prose.
Course 9. Grammar Review.
Course 12. German Composition.
Course 20. Teachers' Course.
Course 25. Modern German Dramatists.
Course 26. Modern German Novelists.
Course 22. Schiller.
Course 21. Goethe.
Course 29. Goethe's Faust.
Course 30. History of German Literature.
Course 31. History of the German Language.

English

ASSISTANT PROFESSORS CAIRNS, BLEYER, LYMAN, DR. BEATTY, DR. DICKINSON, AND DR. WOOLLEY

Course 1. Elements of English Grammar.
Course 2. English Composition.
Course 3. The Teaching of English.
Course 4. Business English.
Course 6. English Composition.
Course 7. Intermediate English Composition.
Course 8. Advanced English Composition.
Course 10. The Composition of Public Address.
Course 11. Anglo Saxon and Middle English.
Course 17. Shakespeare.
Course 18. Browning.
Course 19. Tennyson.
Course 31. The new English poets.
Course 32. Hawthorne and Poe.
Course 51. History of English Literature.
Course 52. History of American Literature.

Mathematics

MR. WOLFF, MR. GRIMES, MR. SMITH, AND MR. DUVAL

Course 1. Elementary Algebra, Part A.
Course 2. Elementary Algebra, Part B.
Course 3. Plane Geometry.
Course 4. Solid Geometry.
Course 5. Plane Trigonometry.
Course 6. University Algebra.
Course 7. Analytic Geometry.
Course 8. Differential Calculus.
Course 9. Integral Calculus.
Course 201. Applied Mathematics. (For Artisans.)

Chemistry

ASSOCIATE PROFESSOR LENHER AND DR. DOUGHTY

Course 1. Elementary Chemistry.

Geology and Mineralogy

PROFESSORS LEITH AND FENNEMAN, MR. HOTCHKISS, MR. COREY, AND MR. MARTIN

Course 1. Mineralogy.
Course 2. Economic Geology.
Course 3. Physical Geography.

Botany

DR. DENNISTON AND DR. OLIVE

Course 1. Morphology and Classification of Flowering Plants.
Course 2. General Morphology of Algae.
Course 3. General Morphology of Fungi.
Course 4. General Morphology of the Mosses and Ferns.
Course 5. Fungous Diseases of Trees.
Course 6. Plant Histology.
Course 7. Elementary Plant Physiology.

Bacteriology and Hygiene

ASSISTANT PROFESSOR FROST

Course 1. General Principles of Elementary Bacteriology.
Course 2. Communicable Diseases.
Course 3. Household or Industrial Bacteriology.
Course 4. Public Health Problems.
Course 6. General Bacteriology.

Home Economics

MISS HUNT AND MISS HUNTINGTON

Course 1. Selection and Preparation of Foods.
Course 2. House Sanitation.
Course 3. House Decoration.

Highway Construction

MR. HOTCHKISS

Course 1. Highway Construction.

Mechanical Drawing

PROFESSOR PHILLIPS

Course 1. Elements of Mechanical Drawing.
Course 2. Advanced Mechanical Drawing.
Course 3. Descriptive Geometry.
Course 4. Lettering.

Mechanical Engineering

PROFESSORS BULL, MACK, MAURER, PENCE, PHILLIPS, RICHTER, ASSISTANT PROFESSOR THORKELSON, MR. KEOWN, AND MR. GRIMES

Group 1. Machine Design Group.
Group 2. Stationary Engineering Group.
Group 3. Locomotive Engineering Group; and other groups.

Course 201. Practical Mathematics for Artisans.
Course 205. Mechanical Drawing.
Course 206. Elements of Mechanics.
Course 207. Strength of Materials.
Course 208. Mechanism.
Course 209. Machine Elements.
Course 210. Advanced Design.
Course 215. Theory of Heat.
Course 216. Boilers.
Course 217. Steam Engines.
Course 218. Valve Gears.
Course 219. Gas Engines and Gas producers.
Course 220. Test Methods.
Course 221. Fuels and lubricants.
Course 222. Refrigeration.
Course 223. Heating and Ventilating.
Course 224. Power Plant Economics.
Course 225. Compressed air.
Course 226. Locomotive Maintenance.
Course 227. Air Brakes.
Course 228. Economics of Train Operation.
Course 229. Electric Machinery.
Course 230. Engine Running.

Commercial Law

PROFESSORS RICHARDS, SMITH, AND GILMORE, AND ASSISTANT PROFESSOR HORACK

Course 1. Contracts.
Course 2. Agency.
Course 3. Sales.
Course 4. Commercial Paper.
Course 5. Personal Property.
Course 6. Insurance.
Course 7. Partnership.
Course 8. Private Corporations.

PHYSICAL TRAINING

PROFSSORS ELSOM, HUTCHINS; ASSISTANT PROFESSORS ANGELL, MAYHEW; AND MR. TEN EYCK.

The department of Physical Training has jurisdiction over all gymnastic and athletic activities. It is the aim of the department to give the students such exercises, games, and sports as will best create and maintain a vigorous physical health. It endeavors to reach a large number of students, especially the weak and undeveloped, and to give to all exercise that will be not only beneficial but interesting. Physical training is required of all freshman and sophomore students on two days of each week, from November to May.

The Gymnasium is one of the largest and best equipped in the country. Its size is 200 feet in length by 100 feet in width. On the ground floor are to be found the necessary offices, the locker rooms, the bath rooms, swimming pool, and gun room. On the second floor, besides the necessary offices and store rooms, there is an unobstructed hall 165 by 98 feet, used for the purposes of gymnastic exercise and military drill. The gymnasium equipment includes the usual apparatus and developing machines, which are supplied in sufficient quantity to meet the requirements of large classes. The third floor contains six large hand-ball courts, two running tracks, eight hydraulic rowing-machines, and two rifle-ranges.

A large athletic field is provided for the use of students, and all intercollegiate and other games and meets are held here. The field is equipped with two large grand-stands, a running track, and other necessary features.

COURSES IN PHYSICAL TRAINING FOR MEN

First Year. First Semester

A. Physical Examinations. Required each semester of all freshmen. The examination includes about fifty measurements of the body, various strength tests, the examination of heart and lungs and other vital organs, tests for vision and hearing, and special tests for curvature of spine, and other physical inequalities. Corrective exercise is prescribed and advice is given concerning special needs of the individual student. One examination is required. Examinations by appointment. Dr. ELSOM.

First Year. Second Semester

1. Gymnastics. Cross-country running; calisthenic drills, setting up exercises, etc.; indoor games. *Two periods a week; one-fifth credit.* Dr. ELSOM.
2. Gymnastics. Continuation of course 1. Lectures on the physiology of exercise, personal hygiene, health culture, etc. These lectures take the place of the regular gymnasium classes on the days when the lectures are given. Dr. ELSOM.

Second Year. First Semester

3. Gymnastics. Cross-country running; gymnasium drill; elementary work on gymnastic apparatus, horses, parallel bars, vaulting, horizontal bars, bucks, mats, ladders, rings, etc. Gymnastic games. *Two periods a week; one-fifth credit.* Mr. ANGELL.

Second Year. Second Semester

4. Gymnastics. Continuation of work of first semester. *Two periods a week; one-fifth credit.* Mr. ANGELL.
5. Gymnastics. Special classes. As a substiute for the required course in gymnastics (courses 1, 2, 3, and 4), credit in the following special classes is given to men physically able to take the work.

5a. Advanced Apparatus Work, to which candidates for the gymnastic team are admitted. Mr. ANGELL.

5b. Class in Track and Field Athletics. The work consists of starts, short dashes, high and broad jumping, pole-vaulting, shot-putting, and long distance running. Dr. HUTCHINS.

5c. Cross-Country Running. Members of the Cross-Country Club working regularly until Thanksgiving are credited in Physical Training. Dr. HUTCHINS.

5d. Swimming. The class meets twice a week and is open to all men who are unable to swim. The various strokes will be taught, also diving, under-water swimming, and life-saving methods. Compulsory for sophomores. Mr. TEN EYCK.

5e. Boxing. All the principal blows will be taught, as well as counters, guards, and parries. Mr. ANGELL.

5f. Fencing. A class for beginners, who will be taught the position of en guard, and all principal attacks and parries. Mr. ANGELL.

5g. Baseball and Football. Recreative sport as a relaxation from study offers no better channels for general development than baseball in the spring and football in the fall months. Great care is exercised in excluding from the more vigorous sports those incapable of deriving physical benefit therefrom. Dr. HUTCHINS.

5h. Rowing. Instruction is given on the rowing machines during the winter months, and in watermanship in the fall and spring in the barges and shells on Lake Mendota. Rowing is notable for the development of the powers of endurance. The University now owns ten shells, accommodating seventy men on the water at one time. Mr. TEN EYCK.

5i. Teachers' Class. To this class wil be admitted those who desire to teach physical training. The methods and principles of gymnastics will be given, and the gymnastic system will be illustrated. Instruction in both light and heavy gymnastics will be included in the course. Dr. ELSOM and Mr. ANGELL.

PHYSICAL TRAINING FOR WOMEN

Chadbourne Hall contains a well equipped gymnasium for the use of the young women attending the University. The room is two stories high, has a floor space of 71 by 40 feet, and is provided with twenty-seven dressing rooms and 128 lockers. The dressing rooms connect with shower baths, supplied with hot and cold water, furnishing bathing facilities for those who take gymnastics.

The work is required of all freshmen and sophomores. The freshmen are required to meet in the gymnasium on the first Thursday of the college year at 4 o'clock. Sophomores will meet on the same day at 5 o'clock.

The main objects of the training for women are the acquiring and maintaining of good health and the producing of a good physical foundation for mental activity. Other results are poise, control, grace, and development.

Each student will undergo a careful physical examination on entering the department, in order that the physical condition may be known, and suitable exercise prescribed for individual cases. A second examination is given during the second semester, in order that the improvements and benefits of the course of exercise may be shown.

The apparatus is complete and varied, consisting of chest

weights, dumb-bells, wands, bar-bells, etc., besides a complete outfit of Swedish apparatus and other forms of appliance for development and physical improvement. Music is used in class-drills.

The gymnasium suit requires four yards of double-width (54 in.) dark blue serge, and consists of a loose shirtwaist and bloomers. The waist has a sailor collar trimmed with narrow white braid. The Butterick pattern may be used. The suit can be obtained here for $5.00.

An outing skirt at least six inches from the ground is also required for out-door sports.

Out-door sports are required work in the fall and spring, and are under the direction of a competent instructor. They are placed upon the same basis as class-work, and an equal credit is given for such training.

The Women's Athletic Association is maintained to further all out-door sports: tennis, field hockey, basketball, cross-country walking, bowling, etc.

Course in Teachers' Gymnastics

A normal class in theory of physical training and in practice of teaching gymnastics meets once a week during the year. The credit given is one-fifth a semester. *Throughout the year; Tu., at* 3.

MILITARY SCIENCE AND TACTICS

CAPTAIN CHARLES A. CURTIS, U. S. A., COMMANDANT.

This department of the University is maintained in accordance with state and federal laws. By the regulations of the University, all able-bodied male students of the freshman and sophomore classes are required to take military drill.

The work of the department embraces a course in drill regulations, a course of lectures on military subjects, and practical instruction in the school of the soldier, company, and battalion, target practice, artillery drill, and signal drill. All commissioned officers, the sergeant-majors, quartermaster-sergeants, and first sergeants are required to take this course. The credit for drill regulations and the lecture course is that of a two-fifths study.

Freshmen who, prior to entering the University, have received the equivalent of one year's instruction in the University battalion, may, at the discretion of the Commandant, be required to drill one year only, *provided*, that they furnish certificates from the principals of military schools they have attended, or the commanding officers of military companies in which they have served for a year or more, setting forth in detail the military duty performed; and that they take the full course in drill regulations, maintaining a good class standing; except that the Commandant may exercise the further discretion of deferring the required drill of all cadets for such military schools or members of companies to the second or sophomore year. Freshmen or sophomores who have served in the army or navy of the United States may receive full credit for drill at the University without further military instruction.

No student is entitled to excuse from drill on the ground of employment unless such employment is necessary for his support. It is not the intention of the University to force students to drill when such action would practically compel the student to leave the University. On the other hand, students cannot be permitted to engage in other occupations which are not necessary for their support and be excused from drill on the ground that such employ-

ment occupies the drill hour. In such a case drill should be regarded the same as any other study.

Drills will begin at the opening of the first semester and be held at least twice a week throughout the year.

Students of the freshman or sophomore classes, who enter, as candidates, the crews and athletic teams recognized by the Athletic Council, may be excused from drill by the Commandant when regularly elected to membership in such organizations.

When a member of a crew or an athletic team shall be discharged from such crew or team he will report to the Commandant for drill at the next drill succeeding his discharge.

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.

Students excused from drill will be required to take, before graduation, an additional one-fifth study in the academic course for each semester in which they were excused from drill.

The uniform of the regiment is similar to the fatigue or undress uniform of the United States army, and can be obtained in Madison at a cost of $9.50 to $15.00.

Organization

The organization is that of a regiment of infantry, consisting of two battalions of three or more companies each, a platoon of artillery, a brass band, a trumpet corps, and signal and target detachments. These organizations will be supplied with a full quota of officers. Students will enter the infantry regiment and afterward be specially assigned to the other organizations at the discretion of the Commandant.

The University fees of cadets appointed to all grades above that of lieutenant wil be remitted. The same fees and an additional prize of fifty dollars will be paid the cadet colonel, lieutenant colonel, and adjutant. These officers will act as assistant instructors in Military Science and Tactics.

Upon graduation specially qualified students receive from the Governor of Wisconsin commissions of brevet second lieutenants in the State National Guard, subject to assignment to duty for five years after graduation.

ROSTER OF UNIVERSITY CORPS OF CADETS FOR 1906-07

Commandant

Captain Charles A. Curtis, U. S. Army, Colonel Wisconsin National Guard.

Surgeon

Lieutenant-Colonel James C. Elsom.

Cadet Officers

REGIMENTAL, FIELD, AND STAFF

Colonel Walter S. Underwood.
Lieutenant-Colonel Albert A. Johnson.
Major Howard C. Hopson, Adjutant.
Captain Thomas J. Hefty, Quartermaster.
Captain Edgar E. Robinson, Regimental Adjutant.
Second Lieutenant Arthur B. Eldridge, Inspector.
Second Lieutenant William R. Curkeet, Asst. Inspector.
Sergeant-Major Ernest C. Griswold.
Sergeant Earl L. Foiles, Chief Trumpeter.

FIRST BATTALION

Major Charles R. Clark.
Second Lieutenant Frederico F. Cardinas, Adjutant.
First Lieutenant Howard L. Beye, Quartermaster.
Sergeant-Major Stanley M. Boyd.
Quartermaster-Sergeant Harry S. Newcomer.

SECOND BATTALION

Major Robert F. Egelhoff.
First Lieutenant Edgar B. Colladay.
First Lieutenant Louis W. Wille, Quartermaster.
Sergeant-Major George W. Heise.
Quartermaster-Sergeant Archibald W. Nance.

COMPANY OFFICERS

Company A	*Company B*
Captain Charles A. Mercein.	Captain Miles W. Berkett.
1st Lieut. Ren C. Saxton.	1st Lieut. Jose Gomez.
2nd Lieut. Alfred C. Schmidt.	2nd Lieut. Sidney W. Fernald.
1st Sergt. Ely C. Wright.	1st Sergt. Kenneth F. Burgess.

Company C

Captain Gustave G. Blatz.
1st Lieut. Donald R. Mihills.
2nd Lieut. Philip L. Hudson.
1st Sergt. Walter L. Hamilton.

Company D

Captain Adolph Heinz.
1st Lieut. Michael H. Flynn.
2nd Lieut. Ross Sutherland.
1st Sergt. Grover H. Rapps.

Company E

Captain Frank M. Kennedy.
1st Lieut. Lester B. Orr.
2nd Lieut. Alonzo B. Ordway.
1st Sergt. B. J. Bocklemann.

Company F

Captain Philip F. Schwenker,
1st Lieut. George J. Kruell.
2nd Lieut. Vincente Fragante.
1st Sergt. Marceliano Hidalgo.

TARGET DETACHMENT

Captain John W. Cunningham.
1st Lieut. Arthur L. Luedke.
2nd Lieut. Pomeroy C. Merrill.
1st Sergt. William B. Kolb.

BAND

Captain Herman E. Owen, Leader.
1st Lieut. Carl J. Snyder.
1st Sergt. Charles A. Mann.

HOSPITAL CORPS

Lieutenant-Colonel James C. Elsom, Surgeon.
First Sergeant Farwell Gascoigne.

THE SUMMER SESSION

OFFICERS OF INSTRUCTION

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
GEORGE C. SELLERY, Ph. D., Director of the Summer Session. Assistant Professor of European History.

T. S. ADAMS, Ph. D., Associate Professor of Political Economy.
C. R. BARDEEN, A. B., M. D., Professor of Anatomy.
J. L. BARTLETT, B. S., Observer, U. S. Weather Bureau.
D. E. BURCHELL, A. M., Professor of Business Administration.
W. B. CAIRNS, Ph. D., Assistant Professor of American Literature.
A. L. P. DENNIS, Ph. D., Professor of European History.
L. W. DOWLING, Ph. D., Assistant Professor of Mathematics.
W. H. DUDLEY, A. B., Assistant Librarian.
J. C. ELSOM, M. D., Professor of Physical Training.
R. T. ELY, Ph. D., LL. D., Professor of Political Economy.
M. B. EVANS, Ph. D., Assistant Professor of German.
N. M. FENNEMAN, Ph. D., Professor of Geology.
C. R. FISH, Ph. D., Assistant Professor of American History.
J. C. FREEMAN, LL. D., Professor of English Literature.
W. F. GIESE, A. M., Associate Professor of Romance Languages.
F. P. GRAVES, Ph. D., LL. D., Professor of the History and Principles of Education, University of Missouri.
R. A. HARPER, Ph. D., Professor of Botany.
M. E. HAZELTINE, B. S., Preceptor, Wisconsin Library School.
W. A. HENRY, D. Agr., D. Sc., Professor of Agriculture, Dean of the College of Agriculture.
A. R. HOHLFELD, Ph. D., Professor of German.
S. J. HOLMES, Ph. D., Assistant Professor of Zoology.
F. G. HUBBARD, Ph. D., Professor of the English Language.
E. J. LAKE, B. S., Assistant Professor of Art and Design, University of Illinois.
VICTOR LENHER, Ph. D., Associate Professor of Chemistry.
ISIDOR LOEB, LL. B., Ph. D., Professor of Political Science and Public Law, University of Missouri.

R. L. LYMAN, A. B., Assistant Professor of Rhetoric and Oratory.
R. E. LYONS, Ph. D., Professor of Chemistry, Indiana University.
MAX MASON, Ph. D., Assistant Professor of Mathematics, Yale University.
C. E. MENDENHALL, Ph. D., Professor of Physics.
W. S. MILLER, M. D., Associate Professor of Anatomy.
M. V. O'SHEA, B. L., Professor of the Science and Art of Education.
J. D. PHILLIPS, B. S., Professor of Drawing.
E. A. ROSS, Ph. D., Professor of Sociology.
F. C. SHARP, Ph. D., Professor of Philosophy.
E. B. SKINNER, Ph. D., Assistant Professor of Mathematics.
M. S. SLAUGHTER, Ph. D., Professor of Latin.
C. F. SMITH, Ph. D., Professor of Greek and Classical Philology.
H. A. SMITH, M. A., Professor of Romance Languages.
W. M. SMITH, A. B., Librarian.
B. W. SNOW, Ph. D., Professor of Physics.
L. L. SUMMERS, Director of Manual Training, Oshkosh Normal School.
A. H. TAYLOR, B. S., Assistant Professor of Physics.
F. J. TURNER, Ph. D., Professor of American History.
E. B. VAN VLECK, Ph. D., Professor of Mathematics.
E. K. J. H. VOSS, Ph. D., Professor of German Philology.

Instructors and Assistants

KATHERINE ALLEN, Ph. D., Instructor in Latin.
R. H. DENNISTON, Ph. D., Instructor in Botany.
T. H. DICKINSON, Ph. D., Instructor in English.
J. E. ELLIOTT, Instructor, Wisconsin Library School.
E. A. HUNTINGTON, A. B., Instructor in Home Economics.
W. F. KOELKER, Ph. D., Instructor in Organic Chemistry.
G. T. KLINE, Technician and Artist in Anatomy.
L. F. MILLER, M. A., Instructor in Physics.
E. W. OLIVE, Ph. D., Instructor in Botany.
H. E. OWEN, Instructor in Public School Music.
D. L. PATTERSON, B. S., Instructor in European History.
EDUARD PROKOSCH, Ph. D., Instructor in German.
C. M. PURIN, Assistant in German and Russian.
C. A. RANKIN, Assistant in Public Speaking.
L. A. RANSOM, Assistant in Public School Music.

F. W. Roe, M. A., Instructor in English.
H. P. Sawyer, B. L., Instructor, Wisconsin Library School.
M. A. Schaffner, Ph. D., Assistant in Political Science.
C. A. Tibbals, Jr., A. M., Instructor in Chemistry and Assaying.
Edmund Wild, M. A., Assistant in German.

Other Officers

W. D. Hiestand, Registrar of the University.
L. J. Pickarts, Bursar of the Regents.

PURPOSE OF THE SESSION

The ninth Summer Session of the University of Wisconsin will be held in the six weeks beginning Monday, June 24, and ending Saturday, August 3, 1907. This additional term provides graduate, advanced and elementary instruction in many departments, of the same grade and largely of the same content as that given during the university year proper. The Session is planned to satisfy the needs of:

(a) Graduate students; (b) School superintendents, principals, and teachers; (c) Regular and prospective students of the University who hope to obtain the bachelor's degree in less than four years, or to remedy deficiencies in preparation or credits; (d) Special students or persons from non-academic vocations who desire to participate for a season in the advantages of university work.

Terms of Admission

The requirements for graduates and undergraduates who desire University credit are the same for the Summer Session as for the other sessions of the University. (See p. 65.)

All persons, however, who desire to share in its advantages may be enrolled in the Summer Session without passing any entrance examination. They are freely admitted to all courses as auditors, and are permitted to elect work in the elementary courses, and in the more advanced 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 $15. Those who attend merely as visitors pay the same fee as other students.

The laboratory fees are proportionate with those charged in the long session of the University. The laboratory deposit for a course in chemistry is $10, and in home economics $5, with refunds calculated upon the amount of breakage and the material used. In botany and zoology a fee of $1.25, and in physics a fee of $2, is charged for every thirty hours of working time spent in the laboratory. The fee for the course in vertebrate anatomy is $2.50, and for the course in human dissection, $10.

Registration must precede entrance upon any part of the work of the Session. Registration takes place Saturday, June 22, and Monday, June 24, at the office of the Registrar, 10 University Hall. Students may, however, enter subsequently; and competent ones who so desire will be given every reasonable opportunity to secure the full credit for the work of the Session.

DEPARTMENTS OF STUDY

Education

PROFESSOR O'SHEA AND PROFESSOR GRAVES, OF THE UNIVERSITY OF MISSOURI

1. Principles of Education. *M., Tu., W., Th., F., at* 11. *Two hours credit.* Professor O'SHEA.
2. Mental Development. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Professor O'SHEA.
3. History of Education. *M., Tu., W., Th., F., at* 8. *Two hours credit.* Professor GRAVES.
4. School Supervision. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Professor GRAVES.

Philosophy

PROFESSOR SHARP

1. Elementary Psychology. *M., Tu., W., Th., F., at* 9. *Two hours credit.*
2. Advanced Psychology. *M., Tu., W., Th., F., at* 8. *Two hours credit.*
3. Seminary. Relations of mind and body. *M.,* 4 *to* 6.

History

PROFESSORS TURNER, DENNIS, ASSISTANT PROFESSORS FISH, SELLERY, AND MR. PATTERSON.

1. Greek History. *M., Tu., W., Th., F., at* 12. *Two hours credit.* Mr. PATTERSON.
2. Medieval History, 1085 to 1500. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Assistant Professor SELLERY.
3. Modern European History, 1500 to 1715. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Mr. PATTERSON.
4. History of the United States, 1830-1906. *M., Tu., W., Th., F., at* 11. *Two hours credit.* Assistant Professor FISH.
5. Renaissance in Italy. *M., W., F., at* 11. *One hour credit.* Assistant Professor SELLERY.
6. England in the Eighteenth Century. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Professor DENNIS.
7. Civil War and Reconstruction. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Assistant Professor FISH.
8. History of the West, 1840 to the present. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Professor TURNER.
9. Introductory Seminary in European History. *Tu., Th.,* 11 *to* 12:30. *One hour credit.* Assistant Professor SELLERY.
10. Seminary in Modern English History. *Tu., Th.,* 11 *to* 12:30. *One hour credit.* Professor DENNIS.
11. Seminary in American History. *M., W., F., at* 8. *One or two hours credit.* Professor TURNER.
12. Methods of History Teaching, with especial reference to the work of secondary schools. *Tu., Th., at* 9. Professor TURNER and Assistant Professor FISH.
13. Historical Conference. *F., at* 12.

Political Economy

PROFESSORS ELY, BURCHELL, ROSS, AND ASSOCIATE PROFESSOR ADAMS.

1. Elements of Economics. *M., Tu., W., Th., F., at* 11. *Two hours credit.* Associate Professor ADAMS.
2. Labor Problems. *M., Tu., W., Th., F., at* 12. *Two hours credit.* Associate Professor ADAMS.
3. Modern Statistical Methods. *Tu., Th., at* 10; *and two hours in laboratory. One hour credit.* Associate Professor ADAMS.
4. Industrial Evolution and its Problems. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Professor ELY.

5. Socialism. *M., W., F., at* 10. *One hour credit.* Professor ELY.
6. Social Psychology. *M., Tu., W., Th., F., at* 8. *Two hours credit.* Professor ROSS.
7. General Sociology. *M., Tu., W., Th., F., at* 11. *Two hours credit.* Professor ROSS.
8. Sociological Conference. *W., at* 12. Professor ROSS.
9. Business Organization and Management. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Professor BURCHELL.
10. Laboratory Work in Organizing and Accounting.
    (a) Cost Accounting. *Ten hours a week. Two hours credit.* Professor BURCHELL.
    (b) Commercial Accounting. *Ten hours a week.* Professor BURCHELL.
    (c) Office Practice. *Ten hours a week.* Professor BURCHELL.

Political Science

PROFESSOR LOEB OF THE UNIVERSITY OF MISSOURI, AND DR. SCHAFFNER.

1. American Government. *M., Tu., W., Th., F., at* 8. *Two hours credit.* Professor LOEB.
2. American Constitutional Law. *M., W., F., at* 9. *One hour credit.* Professor LOEB.
3. Practical Legislative Methods. *Lectures, M., W., F., at* 9. *Two hours credit.* Dr. SCHAFFNER.

Greek

PROFESSOR CHARLES FORSTER SMITH

1. Elementary Greek. *M., Tu., W., Th., F., at* 8. *Two hours credit.*
2. Homer's Odyssey, VI-VIII. *M., W., F., at* 9. *One hour credit.*
3. Greek Literature (in English translations) and Greek Life. *Tu., Th., at* 9, *W., at* 5. *One hour credit.*

Latin

PROFESSOR SLAUGHTER, DR. ALLEN, AND MR. ————.

1. Teachers' Course. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Professor SLAUGHTER.
2. Elementary Latin. *M., Tu., W., Th., F.,* 10 *to* 12. Mr. ————.
3. Tacitus: *Germania* and *Agricola. M., Tu., W., Th., F., at* 8. *Two hours credit.* Dr. ALLEN.

4. Ovid. Selections from the *Metamorphoses*, *Fasti*, and *Heroides*. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Dr. ALLEN.
5. Latin Literature. *M., W., F., at* 11. *One hour credit.* Dr. ALLEN.
6. Life and Works of Vergil. *M., W., F., at* 11. *One hour credit.* Professor SLAUGHTER.
7. Seminary. *Tu., Th.,* 11 *to* 12:30. *One hour credit.* Professor SLAUGHTER.

Russian

MR. PURIN

1. Elementary Russian. *Ten hours a week. Exact time of meeting to be fixed by the class. Four hours credit.*

Romance Languages

PROFESSOR HUGH ALLISON SMITH AND ASSOCIATE PROFESSOR GIESE.

1. Beginners' French. *M., Tu., W., Th., F.,* 8 *to* 10. *Four hours credit.* Professor SMITH.
2. Elementary French. *M., W., F., at* 8 *and M., Tu., W., Th., F., at* 9. *Three or four hours credit, according to the amount of work done.* Associate Professor GIESE.
3. Modern Fiction and Drama. *M., Tu., W., Th., F., at* 10. *Two or three hours credit.* Associate Professor GIESE.
4. The Classical Drama. *Three hours a week. One or two hours credit.* Associate Professor GIESE.
5. Old French. *Five hours a week. Two hours credit.* Professor SMITH.
6. Research Work. Professor SMITH and Associate Professor GIESE.

German

PROFESSORS HOHLFELD, VOSS, ASSISTANT PROFESSOR EVANS, DR. PROKOSCH, MR. PURIN, AND MR. WILD.

1. Beginners' German. *M., Tu., W., Th., F.,* 8 *to* 10. *Four hours credit.* Mr. PURIN.
2. Elementary German. *M., Tu., W., Th., F.,* 10 *to* 12. *Four hours credit.* Mr. WILD.
3 Conversation. *M., Tu., W., Th., F., at* 9. *One hour credit.* Dr. PROKOSCH.

4. Composition and Grammar Review. *M., Tu., W., Th., F., at* 11. *Two hours credit.* Professor Voss.
5. Schiller's Wilhelm Tell. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Assistant Professor Evans.
6. Scientific Reading. *M., W., F., at* 9. *One hour credit.* Mr. Wild.
7. Critical German Prose. *M., W., F., at* 11. *One hour credit.* Mr. Purin.
8. Advanced Practice in Writing and Speaking German. *M., W., F., at* 11. *One hour credit.* Dr. Prokosch.
9. Teachers' Course. *M., W., F., at* 9. *One hour credit.* Assistant Professor Evans.
10. Introduction to the Historical Study of German. *M., W., F., at* 10. *One hour credit.* Dr. Prokosch.
11. Lyrics and Ballads. *M., Tu., W., Th., F., at* 8. *Two hours credit.* Professor Hohlfeld.
12. Elements of Phonetics. *M., W., F., at* 12. *One hour credit.* Dr. Prokosch.
13. The Classical German Drama. *M., W., F., at* 9. *One hour credit.* Professor Hohlfeld.
14. Studies in the Language and Literature of the Sixteenth Century. *M., W., F., at* 10. *One hour credit.* Professor Voss.
15. Medieval German Drama. *M., Tu., W., Th., at* 8. *One or two hours credit, according to the amount of reading.* Assistant Professor Evans.
16. Seminary in German Philology. *Tu., Th.,* 9:30 *to* 11. *One or two hours credit.* Professor Voss.
17. Seminary in German Literature. *Tu., Th.,* 11 *to* 12:30. *One or two hours credit.* Professor Hohlfeld.
18. Research.

English

PROFESSORS FREEMAN, HUBBARD, ASSISTANT PROFESSOR CAIRNS, DR. DICKINSON, AND MR. ROE.

1. Preparatory English. *M., Tu., W., Th., F.,* 8 *to* 10. Mr. Roe.
2. Study of English Prose Style. Freshman English. *M., Tu., W., Th., F.,* 8 *to* 10. *Three hours credit.* Dr. Dickinson.
3. Modern English Grammar. *M., Tu., W., Th., F., at* 8. *Two hours credit.* Professor Hubbard.

4. General Survey of English Literature. *M., Tu., W., Th., F.,* 10 *to* 12. *Three hours credit.* Assistant Professor CAIRNS.
5. Chaucer. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Professor HUBBARD.
6. Shakespeare. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Professor FREEMAN.
7. The English Novel in the Victorian Age. *M., W., F., at* 11. *One hour credit.* Dr. DICKINSON.
8. The Prose of Hawthorne and Poe. *Tu., Th., at* 12, *with a third hour to be fixed. One hour credit.* Assistant Professor CAIRNS. *N*
9. Browning. *M., Tu., W., Th., F., at* 11. *Two hours credit.* Professor FREEMAN.

Public Speaking

ASSISTANT PROFESSOR LYMAN AND MISS RANKIN

1. The Composition of Public Addresses. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Assistant Professor LYMAN and Miss RANKIN.
2. Practical Public Speaking. *M., W., F., at* 8. *One hour credit.* Assistant Professor LYMAN.
3. Elocution and Interpretative Reading. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Assistant Professor LYMAN and Miss RANKIN.
4. Elocution and Interpretative Reading. *M., W., F., at* 11. *One hour credit.* Assistant Professor LYMAN and Miss RANKIN.

Mathematics

PROFESSOR VAN VLECK, ASSISTANT PROFESSORS SKINNER, DOWLING, AND MASON OF YALE UNIVERSITY.

1. Algebra. *M., Tu., W., Th., F., at* 10. *Two hours credit (to students not using the course for admission).* Assistant Professor SKINNER.
2. Solid Geometry. *M., Tu., Th., F., at* 12. Professor VAN VLECK.
3. Plane Trigonometry and Logarithms. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Assistant Professor DOWLING.
4. Analytic Geometry. *M., Tu., W., Th., F., at* 10. *Two hours credit.* Assistant Professor MASON.

5. Calculus. *M., Tu., W., Th., F., at* 12. *Two hours credit.* Assistant Professor DOWLING.
6. General Survey of the Progress of Geometry. *M., Tu., W., Th., F., at* 9. *Two hours credit.* Professor VAN VLECK.
7. Number Concept and Geometrical Construction. *M., W., F., at* 12. *One hour credit.* Assistant Professor MASON.
8. Application of Calculus in Mechanics. *Tu., Th., at* 12, *and a third hour to be arranged. One hour credit.* Assistant Professor MASON.
9. An Introduction to Higher Plane Curves. *M., W., F., at* 10. *One hour credit.* Assistant Professor DOWLING.
10. The Theory of Point Sets. *M., Tu., W., Th., F., at* 11. *Two hours credit.* Professor VAN VLECK.

Chemistry

PROFESSOR LYONS OF INDIANA UNIVERSITY, ASSOCIATE PROFESSOR LENHER, DR. KOELKER, AND MR. TIBBALS

1. General Chemistry. Lectures, *M., Tu., W., Th., F., at* 11. *Laboratory work two hours per day. Three hours credit.* Professor LYONS and Dr. KOELKER.
2. Qualitative Analysis. Lectures, *M., W., F., at* 8. *Two or more hours credit, according to the amount of work done.* Associate Professor LENHER and Mr. TIBBALS.
3. Quantitative Analysis. Lectures, *Tu., Th., at* 8. *Two or more hours credit.* Associate Professor LENHER and Mr. TIBBALS.
4. Inorganic Preparations. *Ten hours or more per week, with credit according to the amount of work done.* Associate Professor LENHER.
5. Research in Inorganic Chemistry. *Credit according to the amount of work done.* Associate Professor LENHER.
6. Organic Chemistry. Lectures, *M., Tu., W., Th., F., at* 9. *Three or more hours credit.* Dr. KOELKER.
7. Advanced Organic Chemistry. Lectures, *W., F., at* 8. *Two or more hours credit.* Professor LYONS.
8. Proteids. *Six or more hours per week, with credit according to the amount of work done.* Dr. KOELKER.

Physics

PROFESSORS SNOW, MENDENHALL, ASSISTANT PROFESSOR TAYLOR, AND MR. MILLER

1. General Lectures. *M., Tu., W., Th., F., at* 12. *Two hours credit.* Assistant Professor TAYLOR.
2. General Laboratory Practice. *Ten hours per week. One hour credit for each thirty hours of work performed.* Assistant Professor TAYLOR and Mr. MILLER.
3. Theoretical Physics. Heat and Light. *M., Tu., W., Th., F., at* 8. *Two hours credit.* Professor MENDENHALL.
4. Advanced Laboratory Practice. Heat and Light. *Ten or more hours per week. One hour credit for each thirty hours of work.* Professor MENDENHALL.
5. Radiation and High Temperature Measurements. *One hour credit for each thirty hours of work.* Professor MENDENHALL.
6. Graduate Research. Professor SNOW, Professor MENDENHALL, and Assistant Professor TAYLOR.
7. Lectures for High School Teachers. *M., Tu., W., Th., F., at* 5. Professor SNOW.
8. Laboratory Practice for High School Teachers. *Ten hours a week.* Mr. MILLER.

Geology

PROFESSOR FENNEMAN

1. Physical Geography. *M., Tu., W., Th., F., at* 11. *Two hours credit.*
2. Physiography of the United States. *M., W., F., at* 9. *One hour credit.*
3. Field study. *One hour credit.*

Meteorology

MR. BARTLETT OF THE U. S. WEATHER BUREAU

1. Elementary Meteorology. Lectures, *Tu., Th., at* 3. *Laboratory two hours or more per week. One hour credit.*

Zoology

ASSISTANT PROFESSOR HOLMES

1. Invertebrate Zoology. *Nine hours of laboratory work. Lectures, M., F., at* 8. *Three hours credit.*

2. Experimental Zoology. *M., W., F., at* 4. *One hour credit.*
3. Systematic Zoology. *Hours to be arranged. One or two hours credit.*

Botany

PROFESSOR HARPER, DR. DENNISTON, AND DR. OLIVE

1. General Botany. *M., W., F., at* 9. *Three hours credit.* Professor HARPER and Dr. DENNISTON.
2. Algae. *W., Th., F.,* 2 *to* 4. May be taken in connection with Course 3, the two together giving three hours credit. Professor HARPER and Dr. OLIVE.
3. Fungi. *M., Tu., W.,* 2 *to* 4. Professor HARPER and Dr. OLIVE.
4. Mosses and Ferns. *M., W., F.,* 9 *to* 11. Professor HARPER and Dr. DENNISTON.
5. Morphology and Classification of Seed Plants. *M., W., F.,* 2 *to* 4. May be taken in connection with either Course 4 or 9, any two giving three hours credit. Dr. OLIVE.
6. Botanical Methods. Hours on consultation. *One hour credit.* Professor HARPER.
7. Native Trees and Shrubs. *Tu., Th.,* 4 *to* 6. *One hour credit.* Dr. DENNISTON.
8. Special Physiology of the Flowering Plants. *Hours on consultation.* Professor HARPER and Dr. OLIVE.
9. Vegetable Histology. Lectures and laboratory work, *M., W., F.,* 11 *to* 1. May be taken in connection with either Course 4 or 5, any two giving three hours credit. Dr. DENNISTON.
10. Research. Professor HARPER.

Anatomy

PROFESSOR BARDEEN, ASSOCIATE PROFESSOR MILLER, AND MR. KLINE

1. Physiological Anatomy. Lectures, *M., Tu., W., Th., at* 9. *Three hours credit.* Professor BARDEEN.
2. Mammalian Anatomy. *M., Tu., W., Th., F.,* 2 *to* 4. *Three hours credit.* Associate Professor MILLER.
3. Histology and Organology. *M., Tu., W., Th., F.,* 9 *to* 12. Four hours credit. Associate Professor MILLER.
4. Human Anatomy. *M., Tu., W., Th., F.,* 9 *to* 5. Professor BARDEEN.
5. Modern Laboratory Methods and Research. *Hours to be arranged by consultation.* Professor BARDEEN and Associate Profesosr MILLER.

6. Anatomical Illustration. *Hours to be arranged by consultation.* Mr. KLINE.
7. Artistic Anatomy.

Agriculture

PROFESSOR HENRY, DEAN OF THE COLLEGE OF AGRICULTURE

1. The Elements of Agriculture. Lectures, *M., W., F., at* 8. Demonstrations at hours to suit the convenience of the class. *Two hours credit.*

Home Economics

MISS HUNTINGTON.

1. Survey of Home Economics. *M., W., F., at* 8.
2. Food Materials. *Tu., W., Th.,* 9 *to* 11.

Library Training

MISS HAZELTINE, MISS ELLIOTT, AND MRS. SAWYER

1. Library Practice. *M., Tu., W., Th., F., at* 10.

Public School Music

MR. OWEN AND MISS RANSOM.

1. Public School Music, Elementary. *M., Tu., W., Th., F., at* 3. *Two hours credit.* Mr. OWEN and Miss RANSOM.
2. Public School Music, Advanced. *M., Tu., W., Th., F., at* 12. *Two hours credit.* Mr. OWEN.
3. Choral Music. *Tu., Th., at* 7. Mr. OWEN and Miss RANSOM.
4. Conference. *W., at* 11. Mr. OWEN and Miss RANSOM.
5. Orchestra. *Hour of rehearsals to be announced.* Mr. OWEN.

Art and Design

ASSISTANT PROFESSOR LAKE OF THE UNIVERSITY OF ILLINOIS

1. Art Work for Elementary and High Schools. *M., Tu., W., Th., F.,* 4 *to* 6.
2. Free-hand Drawing. *M., Tu., W., Th., F.,* 2 *to* 4.

Manual Training

PROFESSORS PHILLIPS, SUMMERS, AND ASSISTANT PROFESSOR LAKE

1. Manual Training for Elementary Schools. *M., Tu., W., Th., F., at* 4. Professor SUMMERS.

2. Manual Training for High Schools. *M., Tu., W., Th., F., 2 to 4.* Professor PHILLIPS.
3. Manual Training Conference. *Hours to be arranged.* Professor PHILLIPS, Professor SUMMERS, and Assistant Professor LAKE.

PHYSICAL TRAINING

PROFESSOR ELSOM, MISS ————, AND ASSISTANTS

The university gymnasium is open to all students of the Summer Session without additional fee, except a charge of fifty cents for a locker.

Men

1. Light Gymnastics. *M., W., F., at 4, with a fourth hour to be fixed.* Professor ELSOM.
2. Heavy Gymnastics. *Tu., Th., at 4.* Professor ELSOM.
3. Swimming. *Daily classes.* Professor ELSOM and assistants.
4. Normal Course. *Tu., Th., S., at 5.* Professor ELSOM.

Women

5. Normal Course. *M., W., F., at 11 or 3. One hour credit.* Miss ————.
6. General Course in Gymnastics. *Four days a week at 12 or 4. One hour credit.* Miss ————.
7. Aesthetic Gymnastics and Fancy Club Swinging. *One hour credit.* Miss ————.
8. Swimming. *M., W., F., at 5; Tu., Th., S., at 11.* Professor ELSOM.

SUMMER SCHOOL FOR ARTISANS AND APPRENTICES

This school of shop work and laboratory practice has been established for the benefit of machinists, carpenters, or sheet-metal workers; stationary, marine, or locomotive engineers; shop foremen and superintendents; superintendents of waterworks, electric light plants, power stations, factories, large office and store buildings in cities, and for young men who wish to qualify themselves for such positions. The session is six weeks in length, being coincident with the Summer Session of the College of Letters and Science. The tuition fee is $15, to which are added small laboratory and shop fees.

THE GRADUATE SCHOOL

FACULTY

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
JOHN B. PARKINSON, A. M., Vice President. Professor of Constitutional and International Law.
GEORGE C. COMSTOCK, Ph. B., LL. B., Director of the Graduate School. Professor of Astronomy.

T. S. ADAMS, Ph. D., Associate Professor of Political Economy.
A. S. ALEXANDER, F. H. A. S., M. D. C., Professor of Veterinary Science.
C. E. ALLEN, Ph. D., Assistnt Professor of Botany.
S. M. BABCOCK, Ph. D., LL. D., Professor of Agricultural Chemistry.
C. R. BARDEEN, A. B., M. D., Professor of Anatomy.
M. C. BEEBE, B. S., Associate Professor of Electrical Engineering.
E. A. BIRGE, Ph. D., Sc. D., LL. D., Dean of the College of Letters and Science. Professor of Zoology.
ELIOT BLACKWELDER, A. B., Assistant Professor of Geology.
W. G. BLEYER, Ph. D., Assistant Professor of English.
B. H. BODE, Ph. D., Assistant Professor of Philosophy.
H. C. BRADLEY, Ph. D., Assistant Professor of Physiological Chemistry.
STORM BULL, M. E., Professor of Steam Engineering.
D. E. BURCHELL, A. M., Professor of Business Administration.
C. F. BURGESS, E. E., Professor of Applied Electrochemistry.
C. H. BURNSIDE, M. A., M. S., Assistant Professor of Mechanics.
W. B. CAIRNS, Ph. D., Assistant Profesor of American Literature.
VICTOR COFFIN, Ph. D., Assistant Professor of European History.
J. R. COMMONS, A. M., Professor of Political Economy.
W. W. DANIELLS, M. S., Sc. D., Professor of Chemistry.
A. L. P. DENNIS, Ph. D., Professor of European History.
R. E. N. DODGE, A. M., Assistant Professor of English.
L. W. DOWLING, Ph. D., Assistant Professor of Mathematics.

E. C. Elliott, Ph. D., Associate Professor of Education.
R. T. Ely, Ph. D., LL. D., Professor of Political Economy.
Joseph Erlanger, B. S., M. D., Professor of Physiology.
M. B. Evans, Ph. D., Assistant Professor of German.
E. H. Farrington, M. S., Professor of Dairy Husbandry.
N. M. Fenneman, Ph. D., Professor of Geology.
Richard Fischer, Ph. C., Ph. D., Assistant Professor of the Theory and Practice of Pharmacy.
C. R. Fish, Ph. D., Assistant Professor of American History.
G. C. Fiske, Ph. D., Assistant Professor of Latin.
J. C. Freeman, LL. D., Professor of English Literature.
W. D. Frost, Ph. D., Assistant Professor of Bacteriology.
Lucy M. Gay, B. L., Assistant Professor of Romance Languages.
W. F. Giese, A. M., Associate Professor of Romance Languages.
R. A. Harper, Ph. D., Professor of Botany.
E. B. Hart, B. S., Professor of Agricultural Chemistry.
E. G. Hastings, M. S., Assistant Professor of Agricultural Bacteriology.
W. A. Henry, D. Agr., Sc. D., Dean of the College of Agriculture and Director of the Agricultural Experiment Station. Professor of Agriculture.
A. R. Hohlfeld, Ph. D., Professor of German.
S. J. Holmes, Ph. D., Assistant Professor of Zoology.
F. G. Hubbard, Ph. D., Professor of the English Language.
G. C. Humphrey, B. S., Professor of Animal Husbandry.
Joseph Jastrow, Ph. D., Profesor of Psychology.
Louis Kahlenberg, Ph. D., Professor of Physical Chemistry.
Alexander Kerr, A. M., Professor of the Greek Language and Literature.
Edward Kremers, Ph. G., Ph. D., Director of the Course in Pharmacy. Professor of Pharmaceutical Chemistry.
A. G. Laird, Ph. D., Assistant Professor of Greek and Comparative Philology.
H. B. Lathrop, A. B., Associate Professor of English Literature.
C. K. Leith, Ph. D., Professor of Geology.
Victor Lenher, Ph. D., Associate Professor of Chemistry.
R. L. Lyman, A. B., Assistant Professor of Rhetoric and Oratory.
W. S. Marshall, Ph. D., Associate Professor of Entomology and Zoology.
E. R. Maurer, B. C. E., Professor of Mechanics.
Charles McCarthy, Ph. D., Lecturer in Political Science.

E. B. McGILVARY, Ph. D., Professor of Philosophy.
D. W. MEAD, C. E., Professor of Hydraulic and Sanitary Engineering.
C. E. MENDENHALL, Ph. D., Professor of Physics.
B. H. MEYER, Ph. D., Professor of Political Economy.
W. S. MILLER, M. D., Associate Professor of Anatomy.
H. F. MOORE, M. M. E., Assistant Professor of Mechanics.
R. A. MOORE, Professor of Agronomy.
D. C. MUNRO, A. M., Professor of European History.
J. E. OLSON, B. L., Professor of Scandinavian Languages and Literature.
M. V. O'SHEA, B. L., Professor of the Science and Art of Education.
D. H. OTIS, M. S., Assistant Professor of Animal Nutrition.
E. T. OWEN, Ph. D., Professor of French and Linguistics.
W. D. PENCE, C. E., Professor of Railway Engineering.
J. F. A. PYRE, Ph. D., Assistant Professor of English Literature.
P. S. REINSCH, Ph. D., Professor of Political Science.
A. W. RICHTER, M. M. E., Professor of Experimental Engineering.
E. C. L. C. ROEDDER, Ph. D., Assistant Professor of German Philology.
E. A. ROSS, Ph. D., Professor of Sociology.
H. L. RUSSELL, Ph. D., Professor of Bacteriology.
E. P. SANDSTEN, Ph. D., Professor of Horticulture.
W. A. SCOTT, Ph. D., Professor of Political Economy.
G. C. SELLERY, Ph. D., Assistant Professor of European History.
F. C. SHARP, Ph. D., Professor of Philosophy.
GRANT SHOWERMAN, Ph. D., Assistant Professor of Latin.
J. W. SHUSTER, B. S., Assistant Professor of Electrical Engineering.
E. B. SKINNER, Ph. D., Assistant Professor of Mathematics.
M. S. SLAUGHTER, Ph. D., Professor of Latin.
C. S. SLICHTER, M. S., Professor of Applied Mathematics.
C. F. SMITH, Ph. D., Professor of Greek and Classical Philology.
H. A. SMITH, M. A., Professor of Romance Languages.
L. S. SMITH, C. E., Associate Professor of Topographic and Geodetic Engineering.
W. M. SMITH, A. B., Librarian.
B. W. SNOW, Ph. D., Professor of Physics.
S. E. SPARLING, Ph. D., Assistant Professor of Political Science.
SUSAN A. STERLING, M. L., Assistant Professor of German.
C. W. STODDART, A. M., Assistant Professor of Soils.

A. H. Taylor, B. S., Assistant Professor of Physics.
H. C. Taylor, Ph. D., Assistant Professor of Political Economy.
H. J. B. Thorkelson, M. E., Assistant Professor of Steam Engineering.
F. E. Turneaure, C. E., Dr. Eng., Dean and Professor of Engineering.
F. J. Turner, Ph. D., Professor of American History.
E. B. Van Vleck, Ph. D., Professor of Mathematics.
E. K. J. H. Voss, Ph. D., Professor of German Philology.
A. R. Whitson, B. S., Professor of Soils.
W. H. Williams, A. B., Professor of Hebrew and Hellenistic Greek.
F. W. Woll, Ph. D., Professor of Agricultural Chemistry.

Instructors and Assistants

B. M. Allen, Ph. D., Instructor in Anatomy.
Katherine Allen, Ph. D., Instructor in Latin.
Arthur Beatty, Ph. D., Instructor in English.
A. B. Clawson, B. A., Assistant in Zoology.
E. A. Cook, B. L., Instructor in English.
C. D. Cool, A. M., Instructor in Romance Languages.
D. A. Crawford, B. A., Assistant in Anatomy.
W. F. Dearborn, Ph. D., Instructor in Education.
R. H. Denniston, Ph. D., Instructor in Botany.
S. H. Goodnight, Ph. D., Instructor in German.
J. F. Haussmann, Ph. D., Instructor in German.
W. O. Hotchkiss, B. S., Instructor in Mineralogy and Petrology.
L. R. Ingersoll, Ph. D., Instructor in Physics.
E. R. Jones, B. S. A., Instructor in Soils and Drainage.
F. T. Kelly, Ph. D., Instructor in Hebrew and Hellenistic Greek.
J. L. Kind, Ph. D., Instructor in German.
W. F. Koelker, Ph. D., Instructor in Organic Chemistry.
F. M. McCullough, C. E., Instructor in Mechanics.
J. G. Moore, M. S., Instructor in Horticulture.
E. W. Olive, Ph. D., Instructor in Botany.
J. B. Overton, Ph. D., Instructor in Botany.
L. J. Paetow, Ph. D., Instructor in History.
D. L. Patterson, B. S., Instructor in History.
U. B. Phillips, Ph. D., Instructor in American History.
Eduard Prokosch, Ph. D., Instructor in German.
L. P. Shanks, A. M., Instructor in Romance Languages.

F. L. Shinn, Ph. D., Instructor in Physical Chemistry.
E. M. Terry, A. M., Instructor in Physics.
C. T. Vorhies, B. S., Assistant in Zoology.
George Wagner, M. A., Instructor in Zoology.
J. W. Watson, B. S., Instructor in Electrical Engineering.
O. P. Watts, Ph. D., Instructor in Applied Electrochemistry.
M. O. Withey, C. E., Instructor in Mechanics.

THE ADMINISTRATIVE COMMITTEE

Charles R. Van Hise, Ph. D., LL. D., President of the University.
George C. Comstock, Ph. B., LL. B., Chairman and Director of the Graduate School. Director of Washburn Observatory and Professor of Astronomy.
Stephen M. Babcock, Ph. D., LL. D., Professor of Agricultural Chemistry.
Charles R. Bardeen, A. B., M. D., Professor of Anatomy.
Edward A. Birge, Ph. D., Sc. D., LL. D., Dean of the College of Letters and Science. Professor of Zoology.
Charles F. Burgess, E. E., Secretary. Professor of Applied Electrochemistry.
Richard T. Ely, Ph. D., LL. D., Professor of Political Economy.
Alexander R. Hohlfeld, Ph. D., Professor of German.
Louis Kahlenberg, Ph. D., Professor of Physical Chemistry.
Paul S. Reinsch, Ph. D., Professor of Political Science.
Harry S. Richards, LL. D., Dean of the College of Law. Professor of Law.
Edward A. Ross, Ph. D., Professor of Sociology.
Moses S. Slaughter, Ph. D., Professor of Latin.
Charles S. Slichter, M. S., Professor of Applied Mathematics.
Frederick E. Turneaure, C. E., Dr. Eng., Dean of the College of Engineering. Professor of Engineering.
Frederick J. Turner, Ph. D., Professor of American History.

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, as is the case elsewhere, 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. 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 co-operation than is implied in their relations to the University as a whole. The development of this work, however, led to its organization, in 1895, as a Department of Graduate Study, and in 1904 it was advanced to the status of a Graduate School, the administration of which was entrusted to a committee of the University Faculty called the Administrative Committee of the Graduate School. The chairman of this committee was in 1906 made Director of the Graduate School. He is charged with general supervision of all graduate students, and is the medium of communication between such students and the University administration. The faculty of the Graduate School includes all heads of University departments in which graduate work is offered, and all members of the instructional staff of the University in charge of graduate courses.

AIMS AND METHODS

The Graduate School aims to serve the needs of young men and women of college training who desire a larger and more thorough acquaintance with the scholarship and research of the world than can be obtained in the current undergraduate courses. It seeks to awaken in the minds of capable men and women an appreciation of high scholarship, research, and the advancement of learning, to the end that they may effectively aid, not only in the promulgation of academic instruction, but also in extending the boundaries of knowledge. Although the work of the Graduate School is in large part planned with reference to the needs of those who desire to fit themselves for the higher positions in the work of education, and who as preparation for this work seek to specialize along definite lines, the oportunities 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 each department. Lectures, laboratories, and the seminary method are largely employed, and especial 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 especially meritorious work of this kind, and doctor's theses of more than common merit are occasionally thus published. For information on the publications of the University, see the Appendix to this catalogue.

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 English Club,
The Philosophical Club,
The German Journal Club,
The Chemical Club,
The Biological Club,
The Mathematical Club,
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 eighteen University fellowships of $400 each, of which two are especially devoted to Political Economy, two to History, and one each to Latin, Greek, German, Political Science, and Sociology. It is stipulated that the holder of the fellowship last named shall do work at the University Settlement in Milwaukee.

The following are the regulations respecting these fellowships:

1. Any fellowship to which the present regulations apply may be held by any graduate of a college of recognized standing or by anyone whose education is equivalent to that represented by a college degree. Those about to take such a degree are eligible as candidates, the regulations applying to the time of entrance upon the duties of the fellowship. Men and women are equally eligible.

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 President before April 1st of the collegiate year preceding that during which the fellowship is held. See the following note.

3. All fellowships will be filled each year. Fellows may be reelected for one additional year only.

4. Application must be accompanied by evidence of scholarship, ability and general worthiness; such as theses (whether prepared for this or other purposes), published writings, testimonials from instructors, outline of educational course pursued, special distinctions gained, and the like. Applications for reappointment should contain a full account of the work of the preceding year. Applications, to receive attention, must contain a definite statement of the special studies which the applicant intends to pursue.

5. The fellowships will be assigned to the several departments according to the studies which the fellows intend to pursue.

6. Each fellow shall pursue his studies under the direction of the professor or professors in charge of his special studies. Assignment of University services to the fellows shall be made by the President in consultation with the head of the department to which the fellow has been assigned, and the work assigned may be equivalent to one hour of teaching daily, or the supervision of laboratory work for two hours daily.

7. At a meeting of the Faculty in the month of April, which meeting shall be duly announced as the meeting for the election of fellows, the President shall call upon the several heads of the departments in which applications have been received, to make a statement of the merits of the candidates in their departments. After all such statements have been made, the members of the Faculty will cast their ballots for as many candidates as there are fellows to be elected, and those receiving the highest number of votes (provided that each receive a majority of the votes cast) shall be recommended to the Regents for appointment to fellowships.

Note.—In 1908 and thereafter application for fellowships must be made prior to March 1st; they will be acted upon prior to April 1st.

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. They are restricted, however, to persons who have already held academic honors, such as fellowships. No compensation is attached to these positions except the remission of University fees, and no teaching service is required; but to be eligible to an honorary fellowship one must be a graduate of at least one year's standing.

The Mary M. Adams Graduate Fellowship in English

By will the late Charles Kendall Adams, formerly President of the University, 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 English Language and Literature, of the approximate value of $400, became available in the academic year 1906-07.

Graduate Scholarships

The Regents of the University maintain fourteen graduate scholarships of the value of $225 each. Two of these are designated for Economics and Political Science, one for European history, one for American history, and two 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 University, of Ripon College, of Milwaukee Downer College, and of Beloit College to nominate anually 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 have been established the following scholarships, whose annual values fluctuate slightly from year to year, but which are approximately as stated below:—

The Henry Gund Graduate Scholarship in the Department of German, of the annual value of $250.

The F. W. Allis Graduate Scholarship in Germanic Philology, of the annual value of $200.

The Henrik Wergeland Graduate Scholarship of the annual value of $200. Open only to graduate students of Norwegian ancestry.

The Scholarship for Japanese students, amounting to $50 annually for four years.

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 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. 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 157, 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 beginnning of each semester. (For a statement of fees to be paid in the Graduate School see page 80.)

ASSIGNMENT OF STUDIES

The election card should be presented first to the instructor under whom the student's principal work is to be done, who will advise with regard both to the courses of major study and to the subordinate studies that may be combined advantageously with the major. The studies thus determined will be entered upon the election card, which must be signed by the instructor in charge of the major and endorsed with the approval of each other instructor with whom work is to be taken. The completed card should be submitted in person to the Director of the Graduate School within ten days 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.

Graduate students are invited to confer freely with the Director of the Graduate School in all matters concerning their relations to the University.

CANDIDACY FOR DEGREES

Candidates for all higher degrees are required to present to the Director of the Graduate School application for admission to candidacy for the proposed degree. Such application should be made at least seven months prior to the date at which the examinations for the degree are to be taken, and may be made, with advantage to the student, at an earlier date.

SECOND DEGREES

Upon the conditions stated below the degree of *Master of Arts* will be conferred upon Bachelors of Arts of the University of Wisconsin, and upon graduates of this and other institutions to similar rank who have pursued courses of study equivalent to those now leading to the degree of B. A. in the University of Wisconsin.

Upon similar conditions the degrees *Master of Science* and *Master of Philosophy* will be conferred upon graduates of the University of Wisconsin who have taken the corresponding baccalaureate degrees.

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 set forth below 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, one of which must have been in a position of responsibility, and who present satisfactory theses.

The following regulations for the attainment of second degrees apply to all candidates in residence:—

1. During the period of at least one academic year the candidate must pursue in residence at the University an approved course of study, consisting of a major subject chosen from among the graduate courses offered by the University, and a minor sub-

ject which may be either graduate or undergraduate work. Approximately twice as much time should be given to the major subject as to the minor.

2. Ordinarily the required major and minor courses must severally be taken within a single department of the University, but in special cases the Administrative Committee will authorize a major or minor to be constructed from closely related work in different departments.

3. Candidates for the master's degree who are graduates of the University of Wisconsin may be permitted, by vote of the Administrative Committee, to do one-half of this work *in absentia*.

4. On or before June 1 of the year in which the degree is to be conferred the candidate must file with the Director of the Graduate School a thesis approved by the instructor under whom his major subject has been taken. After the thesis has been submitted, 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.

5. Upon recommendation of the instructor having charge of the candidate's major subject of study, the Administrative Committee may excuse from the preparation of a master's thesis any graduate of the University whose bachelor's thesis gives sufficient evidence of ability to conduct investigation such as is expected of candidates for the master's degree. Candidates desiring to avail themselves of this privilege must continue their graduate studies in the department in which their undergraduate major lay, and must make application for excuse from the master's thesis not later than November 1 of the academic year in which the degree is sought.

6. Graduate students whose training has not been equivalent to that represented by the baccalaureate degrees of the University of Wisconsin, will be required to devote to their candidacy for the master's degree a longer period than the minimum of one year above described. Such students may be required by the Committee to pursue in addition to the required major and minor subjects, studies assigned with view to remedying deficiencies in their preliminary training.

7. 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 Administrative Committee.

Students in Law

Graduates of approved institutions who pursue the course in law at the University, and who, by reason of their superior training, are able to take additional studies advantageously, may receive a second degree at graduation from the College of Law, on condition of having satisfactorily pursued studies in the Graduate School equivalent to five hours a week during two years and on complying with the other required conditions.

CANDIDACY FOR THE MASTER'S DEGREE, PARTLY IN ABSENTIA

By consent of the departments concerned any persons otherwise eligible to candidacy for a second degree who has done satisfactory graduate work during one summer session of the University may be admitted to candidacy for the master's degree upon the following terms:—

During a period of two consecutive years while not residence at the University the candidate must pursue a major study, and during two summer sessions, in addition to the one above named, must pursue at the University work in continuation of, or collateral to, this major; e. g., laboratory or seminary work in the department in which the major is taken.

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. Continuous supervision by the University can not, in general, be given to work done *in absentia*, and its amount and character must be shown by examination at the University.

THE DOCTOR'S DEGREE

The degree of *Doctor of Philosophy* will be conferred upon successful candidates after not less than three years of graduate study, of which either the first two years or the last year must be spent at this University; but it is not conferred solely as the

result of faithful study extending over any prescribed period. Special attainments are required in the case of candidates for this degree, particularly the power of independent investigation, shown by the production of a thesis embodying original research or creative scholarship, presented with a fair degree of literary skill.

The attention of graduate students is called to the following regulations respecting candidacy for the doctor's degree.

1. Candidates for this degree are required to select as a principal line of study some definite department of knowledge, with whose entire extent they must become familiar, in general terms, and with some part of which (the one in which the thesis falls), they must acquire a detailed acquaintance. The group of studies thus contemplated 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. This group of studies 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. 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 Administrative Committee certificates from the departments of French and German of the University of Wisconsin, showing that he possesses a sufficient reading knowledge of these languages to use them for purposes of research in his major study.

3. On or before the same date, November 1, the candidate must file with the Director of the Graduate School his formal application to be admitted to candidacy for the doctor's degree. This application must set forth, subject to future verbal amendment, the title of the proposed thesis, and the approval of this title by the instructor in charge of the major. A blank for this purpose will be furnished by the University.

4. Each candidate for the doctor's degree must sustain an oral examination upon his thesis and upon the general work cov-

ered 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 must be submitted to the Director of the Graduate School three weeks before the final oral examination is held. In exceptional cases, by consent of the Administrative 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 persons, and will designate a time and place for the examination

7. The successful candidate is required to put his thesis into print and to deposit *one hundred copies* of the same in the University Library. If the thesis is printed in a journal, or as a bulletin, reprints will be accepted for the library, but these must be provided with a special cover and title page in proper thesis form. The diploma may be conferred before the thesis is printed, provided a written or typewritten copy bearing the approval of the Administrative 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.

FEES AND EXPENSES

Graduate students, including those working *in absentia*, pay the same fees as undergraduates in the College of Letters and Ssience. See Index, under Fees and Expenses.

COURSES FOR GRADUATES

In all of the 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

offered in the College of Letters and Science, the College of Engineering, and the College of Agriculture.

GRADUATE CIRCULAR

The special announcement of the Graduate School for 1907-08, giving detailed information concerning the school, may be obtained upon application to the Registrar of the University.

DEGREES

CONFERRED ON COMMENCEMENT DAY, 1906

COLLEGE OF LETTERS AND SCIENCE

Bachelor of Arts

Bessie Eliza Adams.
Josephine Holcomb Allen.
Ada Dell Ames.
*Oren Joseph Anderson.
Walter Myron Atwood.
Alexius Henry Baas.
*John Sydney Baker.
Joseph Henry Baker.
Céline Agnes Ballu.
Charles Pease Barker.
Godfrey Waldo Barney.
Edward Morley Barrows.
Max Albert Becher.
Jettie Emerle Berg.
Matthew Garland Berge.
Anna Grant Birge.
Charles Clyde Bishop.
Cora Ethel Bissell.
George Washington Blanchard.
Peter Francis Brey.
Louis William Bridgman.
*Milton Francis Bruce.
Jesse Platt Brush.
Marguerite Eleanor Burnham.
Robert Campbell.
Lulu Edith Cass.
Ellen Jessie Corse.
Merrill Henry Crissey.
Isabel Margaret Cunningham.
Harry Julius Dahl.
Bertha Eleanor Davis.
Corrie Belle Dawkins.
John Byron De Lacy.
Darwin Delap.
Elise Forsythe Dexter.
Arthur Dietz.
Walter Louis William Distelhorst
*Minnie Lee Dodd.
Charles Wilson Dodge.
Mary Louise Dodge.
Margaret Elizabeth Dousman.
Minnie Theresa Draves.
Richard Cone Dudgeon.
Stanley Gray Dunwiddie.
May Louise Durst.
Matilda Dyrud.
Edna Eimer.
Alice Esther Evans.
Karl Everett.
Martha Marion Fay.
Polly Fenton.
Edward John Fessler.
Edward Garfield Festerling.
Eunice Estella Fisher.
Sigrid Fjoslien.
Blanche Fridd.
Jane Fries.
*Scott Winters Fries.

*Degree conferred since Commencement, 1906.

*Mildred Gapen.
Katherine Ethel George.
Edna Marion Gilbert.
Emma Louise Glenz.
Ethel Isabelle Godwin.
Mabel Jean Gordon.
Goldie Kate Grant.
Edgar Albert Hall.
George Francis Hannan.
Elizabeth Katherine Harvey.
Clarence Scott Hean.
Fred Heinemann.
Lucretia Mae Herrick.
Ralph Dorn Hetzel.
Therese Frances Hickisch.
Frederick Lionel Holmes.
Ella Gertrude Holthoff.
Grace Adams Houghton.
Martin Matthew Hueffner.
Berenice Drew Hunter.
Gertrude Hazel Hunter.
Annabel MacGregor Hutton.
Edna Jannet Ingalls.
Louise Marie Jahns.
Edith Johnson.
Francis Ellis Johnson.
Ida Petrine Johnson.
Jessie Vera Johnson.
Marjorie Daw Johnson.
Hally Delilia Mary Jolivette.
Victor Hugo Kadish.
Max John Kelling.
Erma Louise Ketchpaw.
Maude Luella Ketchpaw.
Euretta Mary Kimball.
Clarence Baker King.
Arthur Charles Kissling.
Philip Arnold Knowlton.
Edna May Koch.
Paul Henry Frank Kremer.
Adalia Laurentine Kroehnke.
Charles Byron Kuhlman.
Irma Lizette Kussel.
Florence Helen Lackner.
Grace Deborah Latta.
Laura Lou Lawson.
Madge Winifred Loranger.
Ruth Erema Lyons.
William J. McGillivray.
Sara Roxie McKay.
Frederick William MacKenzie.
Maud Ethel Jane MacMillan.
Henry Christoph Martens.
Ora Lotta Mason.
James Orley Meadows.
Adelaide Miller.
Robert Edgar Miltenberger.
Katherine Salome Minch.
John Jeremiah Morgan.
Nona Troy Morse.
Don Ensminger Mowry.
Marion Gray Mulick.
Barbara Merrielle Munson.
Ross Byron Newman.
Laura Marie Olsen.
*Esse Irene Osgood.
Edwin Ott.
Maxwell Charles Otto.
Anna Louisa Patterson.
Walter Lafayette Patterson.
George Williams Peckham, Jr.
*Archie Lee Persons.
Bessie Pettigrew.
*Helen Meroe Pierce.
De Witt Clinton Poole, Jr.
Herman Monroe Potter.
Katharine Rebecca Pray.
Agnes Ravn.
George Rankin Ray.
Alice Jane Reid.

*Degree conferred since Commencement, 1906.

Clara Alida Richards.
Clarence Lemuel Richardson.
Florence Georgiana Rietow.
Guy Franklin Risley.
Agnes Ida Roberts.
*Eck Crippen Roberts.
Bertha Harriett Rogers.
Newton William Rosenheimer.
Helen Alice Rosenstengel.
Magdalene Rostad.
Allen Mead Ruggles.
*Alma Matilda Runge
Anne Ruste.
Marion Eva Ryan.
Norman Walker Sanborn.
Mary Alice Sands.
Albert John Schoephoester.
Arno Robert Schorer.
Jennie Thayer Schrage.
Peter Henry Schram.
Fern Scott.
Herbert Lyle Seamans.
Henry Herman Paul Severin.
Walter I. Sleep.
Anna Du Pre Smith.
Osmore Ray Smith.
Margaret Southwick.
Walter Edmund Sprecher.
Meta Eleanor Starke.
Edward Steidtmann.
Meda B. Stevens.
Anna Louise Stone.
Erna Dorothea Strassburger.
Perry Curtis Stroud.
*Jeannette Lucile St. Sure.
Kathryn Lucile Sullivan.
Ella Sutherland.
Mary Waddington Swenson.
Lily Ross Taylor.
Mary Ella Thomas.
Claire Cordelia Thursby.
Fredrik Turville Thwaites.
Marie Edith Tirrill.
Julia Florence Tormey.
Helen Turvill.
Albert Theodore Twesme.
Marion Van Velzer.
Alma Vater.
William Thomas Walsh.
Maude Evangeline Watrous.
Rhoda Mabel White.
Helen Goldsmith Whitney.
Harold Arthur Whittaker.
Rowena Maud Whittier.
John Whyte.
*Raymond Samuel Wile.
Ada Dorothy Wilke.
Gertrude Stickney Young.

COURSE IN COMMERCE

Louis Martin Anderson.
Marshall Arnold.
William Richard Barrett.
John Baptist Bommersheim, Jr.
Ralph Waldo Collie.
Thomas Conway.
Frank Gilbert Emerson.
William Ray Gilfillan.
Joseph Dennis Hayes.
Marcus Franklin Hoefs.
*Hiram Cole Houghton.
Frederick William Hueffner.
Zebulon Bradley Kinsey.
*Arthur Odin Kuehmsted.
William Van Vechten Lehmann.
Albert Louis Lindemann.

*Degree conferred since Commencement, 1906.

Charles Edward Nelson.
*James Henry O'Melia.
Nels John Peterson.
Edwin Hiram Sackett.
Thomas Richard Slagsvol.
Arthur Strong.

Bachelor of Letters

†Henry Freeman Mason.

Bachelor of Philosophy

Emil Gottfried Arzberger.
John Earl Baker.
Florence Irene Bemis.
Thomas Lyman Bewick.
Benjamin Williams Bridgman.
Minnie Juliet Coggeshall.
Adrian H. Cole.
Henry A. Davee.
*John Joseph Enright.
Bernhard John Gallagher.
Joseph Paul Goebel.
John Bernhard Hagberg.
Cora Moore Halsey.
Frederic Rutherford Hamilton.
§Maude Hayes.
Lenora Louise Henderson.
Daniel Benjamin Howell.
George James Jones.
Rudolph Andrew Karges.
*Bertha Lerom.
*Hattie Lucene Lerom.
Edwin Garfield Luening.
Henry Alberto Melcher.
Jessie Victorine Seaver.
Carle Oscar Skinrood.
Leonard Augustus Stroebel.
Margaret Sutherland.
Agnes Young Tucker.
Laura Ellen Verran.
Nicholas Bacon Wagner.
*Richard Zeidler.
Albert Jerome Zoerb.

Bachelor of Science, Pharmacy Course

Fred August Schmidt.

Graduate in Pharmacy

Henry Clay Armstrong.
Henry Davis.
William Aloysius Garvey.
Walter Fred Goetz.
Paul Graw.
George Harcout Ramsey.
Earl Dewitt Richmond.
Walter Henry Rimsnider.
Hermione Smith.
Lewis Ulve.

COLLEGE OF ENGINEERING

Bachelor of Science

GENERAL ENGINEERING COURSE

James Irving Bush.
William Malcolm Conway.
Ralph Emerson Davis.
Guy Lewis Dunlap.

*Degree conferred since Commencement, 1906.
†Degree conferred as of the class of 1881.
§Degree conferred as of the class of 1905.

*Harold Sands Falk.
John Henry Gormley.
Julian George Hart.
Jesse Ernest Jacobson.
Frank Albert Kennedy.
Fred Viall Larkin.
Warren Judson Mead.
Wilfred Cedric Parker.
Loomis James Shadbolt.
William Hooper Smith.

CIVIL ENGINEERING COURSE

Maynard Edward Allen.
William Ensign Bates.
John William Buchanan.
Carl J. Calvin.
Le Roy Francis Harza.
Elmer Thomas Howson.
Henry James Hunt.
Frederick May Johnson.
Francis Wolcott Lawrence.
Albert Leo Brecht Moser.
William Charles Frederick Rath
John Winfield Reid.
Adolph Hjalmar Rossing.
Walter Hobart Sacket.
Harry Stock.
Jent George Thorne.
Anthony Matthew Trester.
Wendell Alexander Van Hook.
William Henry Wetzler.
Edward Charles Wild.
Allen Edgar Wright.
Frederick Carl Youngblutt.

MECHANICAL ENGINEERING COURSE

Rudolph Biersach.
Samuel Eltinge Elmore.
Oscar Arthur Eskuche.
Dean Edward Foster.
Alfred Ulysses Hoefer.
Guy Maxwell Johnson.
Edgar Kearney.
Allen Taylor Kirk.
Carl Vernon La Dow.
Thomas Harris Manchester.
Robert Albert Manegold.
Benjamin Killey Read.
Russell Rosier Ripley.
Lawrence Bernard Robertson.
Webber Sands Russell.
Henry Michael Saubert.
Edmund Louis C. Wachtman.

ELECTRICAL ENGINEERING COURSE

Amos Parker Balsom.
Wilson Arthur Bertke.
John Ward Bradshaw.
Vernon Clyde Byers.
Orpheus Blaine Cade.
Paul Edward Davidson.
Alan Edgar Delgado.
Altamount Delgado.
Matthias Louis Derge.
Charles Loren Eustis.
Heinrich Feige.
Frank Eugene Fisher.
William Henry Flagg.
Raymond James Hardacker.
Harry Leopold Heller.
Robert Townsend Herdegen.

*Degree conferred since Commencement, 1906.

John Bernhard Hoelz.
George John Jenista.
Dudley Hyde Keyes.
Jesse Benjamin Kommers.
Edgar Allen Loew.
Frederick Robert Marks.
Lloyd Baxter McCoy.
Ernest Baldwin Miller.
Edgar James Noe.
Frank Ingram Parker.
Bertine Hila Peck.
Ira Lambert Reynolds.
Frederick Henry Rickeman.
Frank Burdette Rosier.
Lloyd Lyman Smith.
Alfred Julius Sorem.
Edward Nathan Strait.
Walter Otis Sustins.
*Stephen Terhorst.
Charles Clark Thwing.
Arthur Edward Van Hagan.
Arthur J. Walsh.
Wyman Edgar Warren.
Roy Alvah Wheeler.

APPLIED ELECTROCHEMISTRY COURSE

Beverly Burdette Burling.
Arden Richard Johnson.
Otto Louis Kowalke.

COLLEGE OF AGRICULTURE

Bachelor of Science

Thaddeus Hayward Brindley.
William Peter Carroll.
John Archibald Davis.
Edmond Joseph Delwiche.
Conrad Hoffman.
Christian Percival Norgord.
Josiah Allen Ringland.
Christ Schroeder.
Robert Kirk Thompson.
Carl Edward Thorkelson.
Edwin Trowbridge.

COLLEGE OF LAW

Bachelor of Laws

Albert Anderson.
Andrew Stevenson Bogue.
Charles Edward Briere.
William Albert Cowell.
Louis Patrick Donovan.
Victor Rockwell Griggs.
Raymond Jeremiah Haggerty.
Adelbert James Hedding.
Charles Henry Hemingway.
Knute Hill.
Albert John Hoffman.
John Edward Howley.
Vincent Henry Huck.
Gad Jones.
Thomas Harvey Jones.
William Thomas Kelsey.
Mark Anthony Kline.
Charles Henry Lange.
Frank Ainslie Larish.
Arnold Lau.
David Sidney Law.
Lawrence Wencel Ledvina.

*Degree conferred since Commencement, 1906.

Arne Christopher Lerum.
Morris West Locke.
Leo de Ruche Ludlow.
Stephen John McMahon.
Arthur Burdell Melzner.
Robert Parcells Minton.
Frank Clinton Morgan.
Leon Theron Mullen.
Archy Nathan Page.
Howell Albro-Gardiner Parks.
Clifford Ellsworth Randall.
Benjamin William Reynolds.
William Thomas Rhodes.
Herbert Segnitz.
Glenn Rust Snider.
Henry Walter Stark.
Raymond Ambrose Sullivan.
*Lucius Ambrose Tarrell.
Charles Arthur Taylor.
William Emil Wagener.
John Gustav Wollaeger.
Voyta Wrabetz.
Herbert Louis Zeidler.

SCHOOL OF MUSIC

Graduate in Music

Clara Emily Susanna Ballard.
Mary Williamette Bird.
Elizabeth Buehler.
Famee Rebecca Elmer.
Edna Lora Graves.
Hannah Lien.
Josephine Katharine Klusmann.
Otilda Helen Sanders.

HIGHER DEGREES

Master of Arts

*John Edwin Brindley, B. L. (University of Wisconsin), in Political Economy and History.

(Thesis requirement satisfied by baccalaureate thesis of 1905.)

*Gustav O. Brohough, B. L., LL. B. (University of Minnesota), in Political Economy and History.

THESIS: Sioux and Chippewa half-breed scrip and its application to the Minnesota pine lands.

Lawrence Wylie Burdick, A. B. (University of Missouri), in Greek and Latin.

(Thesis requirement satisfied by baccalaureate thesis of 1904.)

Alexander Edmond Cance, B. A. (Macalester), in Education and Political Economy.

THESIS: The legal status of religion in the public schools.

Clarence Edwin Carter, A. B. (University of Illinois), in American History and European History.

THESIS: The struggle in congress over abolition petitions.

*Degree conferred since Commencement, 1906.

Elva Cooper, A. B. (University of Wisconsin), in Mathematics and English.

(Thesis requirement satisfied by baccalaureate thesis of 1904.)

Ira Brown Cross, A. B. (University of Wisconsin), in Political Economy and Political Science.

(Thesis requirement satisfied by baccalaureate thesis of 1905.)

Amelia Clewley Ford, A. B. (Radcliff College), in American History and Political Science.

THESIS: Some political aspects of the press between 1816 and 1830.

Netta Wilhelmine Haffner, B. S. (University of Michigan), in German and French.

THESIS: Otto Ludwigs kritische Stellung zum realistischen Drama.

Christiaan Bernhardus Hardenberg, A. B. (University of Wisconsin), in Zoology and Entomology.

(Thesis requirement satisfied by baccalaureate thesis of 1905.)

Anna Augusta Helmholtz, A. B. (University of Wisconsin), in English and History.

(Thesis requirement satisfied by baccalaureate thesis of 1905.)

Grover Gerhard Huebner, A. B. (University of Wisconsin) Political Economy and Political Science.

(Thesis requirement satisfied by baccalaureate thesis of 1905.)

*Karl Theodor Jacobsen, A. B. (Luther College), in Greek and Latin.

THESIS: Demosthenes the Athenian general, a character sketch.

George Irving Kemmerer, A. B. (University of Wisconsin), in Chemistry and Applied Electrochemistry.

THESIS: Electrolytic deposition of osmium.

Leo Hamilton King, M. A. (Holy Cross College), in Education and Philosophy.

THESIS: The validity of motor tests of mental efficiency.

Gottfried Lehmann, Candidat des höheren Schulamts (University of Leipzig), in German Literature and German Philology.

(Thesis requirement satisfied by corresponding work done in Leipzig University.)

Maud Elsie Miller, A. B. (University of Wisconsin), in Latin and German.

(Thesis requirement satisfied by baccalaureate thesis of 1899.)

Harry Briggs North, B. S. (University of Wisconsin), in Inorganic Chemistry and Analytical Chemistry.

THESIS: The action of sulphuryl and thionyl chlorides on selenium and selenium dioxide.

†Emil Olbrich, A. B. (University of Wisconsin), in History and Political Science.

THESIS: The development of northern sentiment on negro suffrage down to 1860.

John Daniel Purcell, A. B. (University of Wisconsin), in Physical Chemistry and Mineralogy.

THESIS: On the permeability of caoutchouc for various substances in acetone solutions.

Edwin Fredrick Rathjen, A. B. (University of Wisconsin), in Chemistry and Mineralogy.

THESIS: On the formation of tellurium oxychloride when tellurium dioxide reacts with gaseous hydrochloric acid.

Mary Christena Sands, A. B. (University of Wisconsin), in Botany and Chemistry.

THESIS: Nuclear structure and spore formation in *Microsphaera alni*.

*Jesse Dwight Suter, B. A. (University of Wisconsin), in Mathematics, Astronomy.

THESIS: On the theory of applicable surfaces.

Charles Austin Tibbals, A. B. (University of Wisconsin), in Chemistry and Electrochemistry.

THESIS: Synthetic telluride of gold.

Elias Isaac Tobenkin, A. B. (University of Wisconsin), in German Literature and German Philology.

(Thesis requirement satisfied by baccalaureate thesis of 1905.)

Willibald Weniger, A. B. (University of Wisconsin), in Physics and Chemistry.

THESIS: The infra-red absorption of the alcohols.

*Marion Ballantyne White, Ph. B. (University of Michigan), in Mathematics, Physics.

THESIS: The asymptotic lines on the anchor ring.

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*Degree conferred since Commencement, 1906.
†Died September 29, 1906.

Elmer Howard Williams, A. B. (University of Wisconsin), in Physics and Mathematics.

(Thesis requirement satisfied by baccalaureate thesis of 1905.)

Edward Wolesensky, B. S. (Doane College), in Inorganic Chemistry and Analytical Chemistry.

THESIS: The action of ammonia on selenyl chloride.

Miono Yamamoto, A. B. (Kyoto Imperial University), in Political Economy.

THESIS: Agricultural policy, as presented by a great Japanese writer.

Master of Philosophy

Charles Baldwin Gates, Ph. B. (University of Wisconsin), in Physical Chemistry and French.

THESIS: On the effects of certain inactive substances on the optical activity of pinene.

William Kittle, Ph. B. (University of Wisconsin), in History, Education and French.

(Thesis requirement satisfied by baccalaureate thesis of 1899.)

Master of Science

Walter Sheldon Brown, B. A. (Cornell University), in Horticulture and Entomology.

THESIS: The influence of winter dessication and winter flow of sap on the viability of buds of the apple.

Martin Nelson, B. S. (University of Wisconsin), in Soils.

THESIS: Acidity of soils and its influence upon farm crops.

Civil Engineer

Lewis Eugene Moore (University of Illinois).

THESIS: Some tests of wooden bridge stringers.

Edward Emmet Sands (University of Wisconsin).

THESIS: The location and construction of the south canal of the Uncompahgre Valley reclamation project.

Electrical Engineer

Edward Wray, B. S. (University of Wisconsin), in Applied Electrochemistry.

THESIS: An investigation of the various methods of railway car lighting by electricity.

Alvin Meyers, B. S. (University of Wisconsin).

THESIS: A 10,000 horse power hydroelectric installation at Olmsted, Utah, with special reference to high tension outlets.

Mechanical Engineer

Frank Benjamin Rowley, B. S. (University of Wisconsin), in Gas Engines.

THESIS: The performance and efficiency of a Wile gas producer.

Doctor of Philosophy

*William Ballantyne Anderson, M. S. (University of Wisconsin), in Physics, Mathematics, Chemistry.

THESIS: A spectroscopic study of the spark spectrum.

Irving Walter Brandel, B. S. in Pharmacy (University of Wisconsin), in Organic Chemistry, Physical Chemistry, Mathematics.

THESIS: Plant pigments.

Frank Tracy Carlton, M. A. (University of Wisconsin), in Political Economy, Political Science, Sociology.

THESIS: Economic influences upon educational progress, 1820-1850.

*Clarence Cory Crawford, M. A. (University of Kansas), in European History, American History, Political Science.

THESIS: The suspension of the habaes corpus act in England.

Thomas Herbert Dickinson, M. A. (Columbia University), in English, German, Philosophy.

THESIS: Schools, scholars, and scholarship in Elizabethan drama.

*Martin Henry Haertel, Ph. B. (University of Chicago), in German, History, English.

THESIS: German literature in American journals (1846-1880).

*Lewis Henry Haney, A. M. (Dartmouth College), in Political Economy, History.

THESIS: A congressional history of railways.

*Henry Lorenzo Janes, B. L. (University of Wisconsin), in Political Science, History, Political Economy.

THESIS: The extension of French laws to the colonies.

Max Otto Lorenz, A. B. (University of Iowa), in Political Economy, Political Science, Sociology.

THESIS: The economic theory of railroad rates.

George Benjamin Mangold, A. M. (University of Chicago), in Political Economy, History, Sociology.

THESIS: The development of the labor argument in our protective tariff controversy.

*Raymond Vincent Phelan, M. A. (Western Reserve University), in Political Economy, Political Science, History.

THESIS: The financial history of Wisconsin.

*Degree conferred since Commencement, 1906.

*Benejamin McKie Rastall, M. A. (Colorado College), in Political Economy, History.
THESIS: The labor history of the Cripple Creek district.

John Langley Sammis, M. S. (University of Illinois), in Physical Chemistry, Analytical Chemistry, Applied Electrochemistry.
THESIS: On the relation between electrolytic conductivity and chemical activity.

*Joseph Schafer, M. L. (University of Wisconsin), in American History, European History, Political Economy.
THESIS: The acquisition of Oregon by the United States.

*Frederick Lafayette Shinn, A. M. (Indiana University), in Chemistry, Organic Chemistry, Mathematics.
THESIS: On the optical rotatory power of salts in dilute solutions.

*John Weinzirl, M. S. (University of Wisconsin), in Bacteriology, Physical Chemistry, Organic Chemistry.
THESIS: The action of sunlight upon bacteria with special reference to tuberculosis.

*Royal Brunson Way, Ph. M. (University of Michigan), in American History, European History, Political Science.
THESIS: Internal improvements in the United States (1817-1829).

HONORARY DEGREE

Doctor of Laws

David J. Franklin Houston,
President of the University of Texas.

John Henry Wigmore,
Dean of the Law School of Northwestern University.

Ernest Rutherford,
Professor of Physics of McGill University.

HONORS IN SPECIAL STUDIES

Edward Morley Barrows, inAmerican History.
THESIS: The Ojibway Nation: A study in primitive environment.

Merrill Henry Crissey, in Political Economy.
THESIS: The regulation of steam carriages on common roads in England.

Ralph Emerson Davis, in Geology.
THESIS: The genetic relation of the lead and zinc ores to the oil-rock in southwestern Wisconsin.

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*Degree conferred since Commencement, 1906.

John Byron De Lacy, in English.

THESIS: Is the old French prose Tristan responsible for the deterioration of the character of Sir Gawain in Malory's Morte D'Arthur.

Conrad Hoffmann, in Agricultural Bacteriology.

THESIS: The relation of soil bacteria to nitrogenous decomposition.

Ida Petrine Johnson, in German.

THESIS: Longfellow's relation to German literature as shown in Hyperion.

Philip Arnold Knowlton, in Greek.

THESIS: The funeral oration of Pericles.

Otto Louis Kowalke, in Chemical Engineering.

THESIS: On the separation of iron from zinc in mixed sulphide ores.

Warren Judson Mead, in Geology.

THESIS: Redistribution of elements involved in the formation of sedimentary rocks.

Maxwell Charles Otto, in American History.

THESIS: The plan of union between the consociated churches of Connecticut and the Presbyterian church.

Jessie Victorine Seaver, in English.

THESIS: The relation between folk-tale and ballad.

Lily Ross Taylor, in Latin.

THESIS: A study of the adjective epithets in Vergil's Aeneid.

Fredrik Turville Thwaites, in Geology.

THESIS: Geology of the vicinity of lakes Waubesa and Kegonsa, Dane county, Wisconsin.

Helen Turvill, in American History.

THESIS: Immigration into Massachusetts, 1820-1900.

Harold Arthur Whittaker, in Bacteriology.

THESIS: The comparative study of chemical precipitation methods in recovering typhoid bacilli from water, with description of new method.

SUMMARY OF GRADUATES

		1906.
Number of first degrees granted, 1854-1906	6268	421
Present Courses:		
Courses leading to the Degree of Bachelor of Arts, including Course in Commerce, 22, 1906	592	218
Course for Normal School Graduates, 1898-1906	213	32
Civil Engineering Course, 1873-1906	264	22
Mechanical Engineering Course, 1876-1906	206	17
Electrical Engineering Course, 1892-1906	248	40
Applied Electrochemistry Course, 1903-1906	12	3
General Engineering Course, 1901-1906	34	14
Law Course, 1869-1906	1690	45
Pharmacy Course, 1884-1906	259	11
Course in Agriculture, 1878-1906	52	11
School of Music, 1898-1906	67	8
Courses discontinued:		
Ancient Classical Course, 1854-1903	470	
Modern Classical Course, 1876-1903	548	
English Course, 1887-1903	458	
Civic Historical Course, 1893-1903	383	
General Science Course, 1886-1903	722	
School of Commerce (B.L., 8; B.S., 1), 1902-1903	9	
Normal Course, 1865-1868	25	
Metallurgical Engineering Course, 1876-1896	16	
Higher Degrees on Examination, 1875-1906	465	56
Masters, 1879-1906	297	34
Engineers, 1875-1906	72	5
Doctors of Philosophy, 1892-1906	96	17

STUDENTS

GRADUATES

FELLOWS AND SCHOLARS

Ambler, Charles Henry, *St. Marys, W. Va.*
M. A., West Virginia University, Fellow in American History.

*Anders, Frank Lafayette, *Fargo, N. D.*
B. A., Ripon College, Ripon College Graduate Scholar.

Andrews, John Bertram, *South Wayne.*
M. A., Dartmouth College, Honorary Fellow in Political Economy.

Bailey, William Louis, *Gravenhurst, Ont. Can.*
M. A., Queen's University, Fellow in Philosophy.

Batcheller, Walter Benson, *Madison.*
B. S., Cornell College, Honorary Fellow in Anatomy.
M. D., Northwestern University,

Breslich, Arthur Louis, *Madison.*
Ph. D., University of Wisconsin, Honorary Fellow in Hebrew and Hellenistic Greek.

Bruns, Friedrich, *Sheffield, Ia.*
M. A., University of Wisconsin, Fellow in German.

Burdick, Lawrence Wylie, *Albion.*
M. A., University of Wisconsin, Fellow in Greek.

Cance, Alexander Edmond, *Shiocton.*
M. A., University of Wisconsin, Fellow in Political Economy.

Christman, Arthur Henry, *Madison.*
B. S., University of Wisconsin, Fellow in Botany.

Colburn, Guy Blandin, *Nashua, N. H.*
M. A., Brown University, Fellow in Latin.

Cooper, Elva, *Milwaukee.*
M. A., University of Wisconsin, Scholar in Mathematics.

Crafer, Thomas Woodside Bentley, *Brooklyn, N. Y.*
B. A., University of North Dakota.
LL. B., Boston University, Fellow in Sociology.

Duncalf, Fred, *Lancaster.*
B. A., Beloit College, Scholar in European History.

Engle, Simon Gingrich, *Monticello, Ind.*
B. A., Indiana University, Scholar in Engineering.

Filbey, Edward Joseph, *Appleton.*
B. A., University of Wisconsin, Honorary Fellow in Greek and Latin.

*Resigned February 19, 1907.

Ford, Amelia Clewley, *Searsport, Me.*
M. A., University of Wisconsin, Scholar in History.

Gries, John Matthew, *Rosewood, O.*
M. A., Miami University, Scholar in Political Economy.

Hancock, Glover Dunn, *Osceola, Mo.*
M. A., William Jewell College, Scholar in Political Economy.

Hardenberg, Christiaan Bernhardus, *Madison.*
M. A., University of Wisconsin, Fellow in Zoology.

Helmholtz, Anna Augusta, *Madison.*
M. A., University of Wisconsin, Fellow in English.

Johnson, Henry Theodore, *Louisburg, Minn.*
B. S., Highland Park College, Fellow in Mathematics.

Knowlton, Philip Arnold, *Madison.*
B. A., University of Wisconsin, Scholar in Greek.

Lapp, John Augustus, *Fillmore, N. Y.*
Ph. B., Alfred University, Scholar in Political Science.

Mann, Charles Richard, *Richland Center.*
B. A., Lawrence University, Lawrence University Graduate Scholar.

Nelson, Karl Oscar, *Lindsborg, Kan.*
B. A., Bethany College, Honorary Fellow in Political Economy.

Newport, Clara Price, *South Milwaukee.*
B. A., Swarthmore College, Henry Gund Scholar in German.

Osgood, Esse Irene, *Milwaukee.*
B. A., University of Wisconsin, Vogel Fellow in Sociology.

Otto, Maxwell Charles, *Wheeling W. Va.*
B. A., University of Wisconsin, Scholar in Philosophy.

Rosenstengel, Helen Alice, *Madison.*
B. A., University of Wisconsin, Scholar in German.

Severin, Henry Herman Paul, *Milwaukee.*
B. A., University of Wisconsin, Scholar in Zoology.

Simmons, Emma Gertrude, *Berryville, Ark.*
B. A., University of Missouri, Fellow in Romance Languages.

Smith, Lloyd Lyman, *Aberdeen, S. D.*
B. S., University of Wisconsin, Scholar in Engineering.

†Stephens, George Ware, *Mt. Pleasant, Ia.*
Ph. B., Iowa Wesleyan University, Honorary Fellow in Political Economy.

Trooien, Ole N., *Hendricks, Minn.*
M. S., South Dakota Agricultural College, Scholar in Engineering.

Volk, Fred Eugene, *Elk City, Neb.*
B. A., Ripon College, Ripon College Graduate Scholar.

†Resigned February 4, 1907.

Waldron, Clement Le Verne, *Schuyler, Neb.*
B. A., University of Nebraska, Fellow in Political Economy.
Weniger, Willibald, *Milwaukee.*
M. A., University of Wisconsin, Fellow in Physics.
Whyte, John, *Watertown.*
B. A., University of Wisconsin, F. W. Allis Scholar in German.
Wolesensky, Edward, *Crete, Neb.*
M. A., University of Wisconsin, Scholar in Inorganic Chemistry.
*Wrench, Jesse Erwin, *Afton, N. Y.*
B. A., Cornell University, Fellow in European History.

OTHER GRADUATES

Allen, Florence Eliza, *Madison.*
M. L., University of Wisconsin, Mathematics.
Allen, Ruth Florence, *Sturgeon Bay.*
B. A., University of Wisconsin, Botany.
Arzberger, Emil Godfrey, *Helenville.*
Ph. B., University of Wisconsin, Botany.
Baker, John Earl, *Eagle.*
Ph. B., University of Wisconsin, Political Science.
Baker, Joseph Henry, *Madison.*
B. A., University of Wisconsin, Physics.
Bartelt, Arthur Herman, *Ft. Atkinson.*
B. A., University of Wisconsin, History.
Bartlett,, James Lowell, *Madison.*
B. S., Boston University, Physics.
Beckenstrater, Herman, *Seymour.*
B. S. A., University of Wisconsin, Horticulture.
Bell, Willis James, *Allison, Ia.*
B. A., Iowa State Normal School, Latin.
Bewick, Thomas Lyman, *Madison.*
Ph. B., University of Wisconsin, Physics.
Bloomfield, Leonard, *Elkhart.*
B. A., Harvard University, German.
Bradley, Marie Merriman, *Portland, Ore.*
B. A., University of Oregon, History.
Brainard, Frank Kellogg, *Detroit, Mich.*
B. S., Michigan Agricultural College, Electrical Engineering.
Brandt, Joseph Granger, *Allen Grove.*
Ph. B., Lawrence University, Latin.
Breslich, Arthur Louis, *Madison.*
Ph. D., University of Wisconsin, Hebrew.
Bridgman, Benjamin Williams, *Madison.*
Ph. B., University of Wisconsin, Physics.

*Resigned November 30, 1906.

Briggs, George Wesley, *Ocheyedan, Ia.*
B. L., University of Wisconsin, Hebrew.
Burrer, Karl Ormand, *Sunbury, O.*
B. S., Denison University, Physics.
Camp, Anna Rachel, *Chicago, Ill.*
Ph. B., Western Reserve University, Agriculture.
Campbell, Robert. *Gurnee, Ill.*
B. A., University of Wisconsin, Political Economy.
Clawson, Arthur Brooks, *Madison.*
B. A., University of Michigan, Zoology.
Cline, Lewis Edgar, *Trenton, Mo.*
B. S., University of Illinois, Bacteriology.
Collins, Belle Webster, *Ripon.*
B. A., Ripon College, Latin.
Conger, John Leonard, *Silver City, Ia.*
M. A., University of Michigan, American History.
Cool, Charles Dean, *Decatur, Ill.*
M. A., Harvard University, French.
Corey, George Watson, *Toledo, O.*
E. M., Michigan College of Mines, Geology.
Coulter, John Lee, *Grand Forks, N. D.*
M. A., University of North Dakota, Political Economy.
Cousins, George Vipond, *Montreal, Can.*
B. A., McGill University, History.
Cox, Guy Henry, *Fort Dodge, Ia.*
B. S., Northwestern University, Geology.
Crawford, David Anderson, *St. Louis, Mo.*
B. A., University of Wisconsin, Embryology.
Crocker, Frank Albert, *Neillsville.*
B. A., University of Wisconsin, Political Economy.
Decker, Paul Herman, *Milwaukee.*
B. A., Wartburg College, German.
Dinsdale, Tirza Anna, *Galena, Ill.*
Ph. B., Lawrence University, Hebrew and Hellenistic Greek.
Dousman, Margaret Elizabeth, *Milwaukee.*
B. A., University of Wisconsin, History.
Ehlman, Ernest George, *Madison.*
B. S., University of Wisconsin, Physics.
Ewing, Elizabeth Learoyd, *Madison.*
B. L., Smith College, Latin.
Fancher, Edith Cora, *Chicago, Ill.*
Ph. B., Cornell University, German.
Festerling, Edwin Garfield, *Sheboygan.*
B. A., University of Wisconsin, Anatomy.
Fitch, John Andrews, *Parker, S. D.*
B. A., Yankton College, Political Economy.

Flisch, Julia Anna, *Augusta, Ga.*
United States History.

Foreman, Clarence James, *Harbor Springs, Mich.*
M. A., University of Michigan, American History.

Foster, Dean Edward, *Madison.*
B. S., University of Wisconsin, Surveying.

Fussell, Lewis, *Media, Pa.*
M. S., Swarthmore College, Alternating Currents.

Galpin, Charles Josiah, *Madison.*
M. A., Harvard University, Political Economy.

Gates, Charles Baldwin, *Milwaukee.*
Ph. M., University of Wisconsin, Chemistry.

Graybill, Robert Beaver, *St. Mary's, Pa.*
B. A., Lebanon Valley College, English.

Grimes, Nathan Cesna, *Madison.*
B. A., University of Michigan, Mathematics.

Grossman, August, *Cleveland O.*
B. A., Harvard University, Mathematics.

Hall, Katherine, *Watertown.*
B. A., University of Wisconsin, (Miscellaneous.)

Hess, Ralph Henry, *Madison.*
M. S., Colorado Agricultural College, Political Economy.

Hill, Charles Warren, *Jackson, Minn.*
A. B., University of Minnesota, Inorganic Chemistry.

Hodge, John Sherman, *Waupun.*
B. S., University of Wisconsin, Assaying.

Iles, Ivory Victor, *Lyons Ind.*
M. A., University of Kansas, European History.

Inouye, Naojiro, *Harima, Japan.*
Osaka College of Pharmacy, Chemistry.

Ishizawa, Kyugoro, *Hobara, Iwashiro.*
M. A., State University of Iowa, Political Economy.

Jacobsen, Karl Theodore, *Stoughton.*
M. A., University of Wisconsin, Greek.

Jaeck, Emma Gertrude, *Omro.*
B. L., University of Wisconsin, German.

James, Albert, Earl, *Madison.*
B. A., University of Wisconsin, Political Economy.

James, Frances Sophia Courtenay, *Eau Claire.*
M. A., University of Wisconsin, English.

Jefferson, Lorian Pamelia, *.Baraboo.*
B. L., Lawrence University, American History.

Jenner, Edwin Alexander, *Indianola, Ia.*
B. S., Simpson College, Psychology.

Johnson, Arden Richard, *Stoughton.*
B. S., University of Wisconsin, Chemistry.

Jones, Edward Richard, *Bangor.*
B. S. A., University of Wisconsin, Soil Physics.
Jones, Marion Burr, *Madison.*
B. A., University of Wisconsin, Horticulture.
Kadish, Victor Hugo, *Milwaukee.*
B. A., University of Wisconsin, Chemistry.
Kennedy, Melville Talbot, *Jacksonville, Ill.*
B. A., Illinois College, Philosophy.
Kenyon, Elizabeth Watson, *Kingston, R. I.*
M. A., Brown University, American History.
Kissling, Arthur, Charles, *Milwaukee.*
B. A., University of Wisconsin, Anatomy.
Knight, Henry Seymour, *Troy, N. Y.*
B. A., Williams College, Hellenistic Greek.
Kowalke, Otto Louis, *South Kaukauna.*
B. S., University of Wisconsin, Electrochemistry.
Krauskopf, Francis Craig, *Maywood, Ill.*
B. A., Indiana University, Physical Chemistry.
Kroesche, August Frederick Christ, *Madison.*
A. M., German Presbyterian Theological School, Philosophy.
Lee, David Russell, *Evanston, Ill.*
M. A., Indiana University, Latin.
Lutman, Benjamin Franklin, *Joplin, Mo.*
B. A., University of Missouri, Botany.
Macduff, Douglas, *Jackson, Mich.*
B. A., University of Michigan, Romance Languages.
March, Herman William, *Ocheyedan, Ia.*
M. A., University of Michigan, Mathematics.
Marquette, William George, *Watertown.*
B. S., University of Wisconsin, Botany.
Matsuoka, Masao, *Hachinoke, Japan.*
Seiji Gakushi, Keiogijukae University, Political Science.
McDaniel, Alonzo Simpson, *Lebanon, Ind.*
M. A., University of Wisconsin, Physical Chemistry.
McMahon, Edward, *Seattle, Wash.*
Ph. B., University of Washington, American History.
McMahon, Theresa Schmid, *Seattle, Wash.*
M. A., University of Washington, Sociology.
Mead, Warren Judson, *Plymouth.*
B. S., University of Wisconsin, Geology.
Merrell, George Clark, *Ripon.*
B. A., Ripon College, Sanitary Engineering.
Michelson, Albert G., *Mt. Horeb.*
B. L., University of Wisconsin, Political Science.
Mellican, Alfred Clay, *Seattle, Wash.*
B. A., University of Washington, Political Economy.

Moe, Maurice Winter, *Milwaukee.*
B. A., University of Wisconsin, Hebrew.
Nelles, Walter Ralston, *Cleveland, O.*
B. A., Harvard University, English.
Niedecken, Evelyn Marie, *Milwaukee.*
B. A., Milwaukee-Downer College, Chemistry of Foods.
Notz, William Frederick, *Watertown.*
M. A., Northwestern University (Watertown) Hebrew.
Oswald, Frederick William, Jr., *Brooklyn, N. Y.*
M. A., Cornell University, German.
Peterson, Adolph Christian, *Racine,*
M. A., Wittenberg College, English Literature.
Ratcliffe, Emory, *New Castle, Ind.*
B. A., Earlham College, American History.
Reed, George Matthew, *Madison.*
M. A., University of Wisconsin, Botany.
Roloff, Walter Edward, *Barrington, Ill.*
M. A., Northwestern University, German Literature.
Ruff, Frederick George, *Ft. Atkinson.*
M. A., Northwestern University, German Literature.
Ruggles, Allen Mead, *Norwich, N. Y.*
B. A., University of Wisconsin, Education.
Russell, Harry Union, *Madison.*
B. S., New Hampshire College, Political Science.
Sadatake, Yuchi, *Sapporo, Japan.*
College of Sapporo, Animal Husbandry.
Schlatter, Edward Bunker, *Brooklyn, N. Y.*
M. A., Harvard University, Romance Philology.
Scott, Jonathan French, *New Brunswick, N. J.*
M. A., Rutgers College, European History.
Scott, Robert Bruce, *Madison.*
Ph. B., University of Pennsylvania, Political Science.
Shaff, John Ostrander, *Camanche, Ia.*
B. S. A., Iowa State College, Animal Husbandry.
Shanks, Lewis Pioget, *Madison.*
M .A., Columbia University, French Language and Literature.
*Sharpe, Theodore Thomas, *Toronto, Can.*
Ph. B., Missouri Wesleyan University, Sociology.
Shephard, William Henry, *Linden.*
Ph. B., University of Wisconsin, History.
Sherman, Helen, *Milwaukee.*
M. A., University of Wisconsin, Botany.
Skinrood, Carl Oscar, *South Wayne.*
Ph. B., University of Wisconsin, Political Economy.
Smith, Edwin Raymond, *Champaign, Ill.*
B. A., University of Illinois, Mathematics.

*In absentia.

Smith, Julia Forster, *Madison.*
B. A., University of Wisconsin, Latin.
Steidtmann, Edward, *Prairie du Sac.*
B. A., University of Wisconsin, Geology.
Stoll, Charles Augustus, *Greenville, Ill.*
Ph. B., Greenville College, Medieval History.
Summey, Alfred Theodore, *New Orleans, La.*
B. S., University of Tennessee, Mathematics.
Suter, Jesse Dwight, *Madison.*
M. A., University of Wisconsin, Mathematics.
Sutherland, Margaret, *Eau Claire.*
Ph. B., University of Wisconsin, English.
Suydam, Vernon Andrew, *Waupaca.*
B. S., University of Wisconsin, Physics.
Suzuki, Shinkichi, *Tokio, Japan.*
B. S., Sapporo Agricultural College, Agricultural Chemistry.
Terry, Earle Melvin, *Battle Creek, Mich.*
M. A., University of Wisconsin, Physics.
Thwaites, Fredrik Turville, *Madison.*
B. A., University of Wisconsin, Geology.
Tibbals, Charles Austin, Jr., *Norwood, N. J.*
M. A., University of Wisconsin, Chemistry.
Tottingham, William Edward, *Bernardston, Mass.*
B. S., Massachusetts Agricultural College, Chemistry.
Tuttle, Arthur Barnes, *Mt. Pleasant, Ia.*
B. A., Iowa Wesleyan University, Geology.
Van Zandt, Jerome Goodspeed, *Madison.*
B. S., Purdue University, Engineering.
Verran, Laura Ellen, *Madison.*
Ph. B., University of Wisconsin, English.
Volkman, Alice May, *Louisville, Ky.*
B. A., Kentucky State College, English.
Vorhies, Charles Taylor, *Madison.*
B. A., Iowa Wesleyan University, Zoology.
Wayson, Newton Edward, *Baltimore, Md.*
B. A., Johns Hopkins University, Bacteriology.
Weber, August William, *Madison.*
Ph. M., University of Wisconsin, Education.
Wetzel, Reinhard August, *Madison.*
B. S., University of Minnesota, Physics.
Wheelwright, Orville William, *Belleville.*
B. A., University of Wisconsin, Geology.
White, Melvin Johnson, *Plymouth, N. H.*
B. S., New Hampshire College, American History.
White, Rhoda Mabel, *Madison.*
B. A., University of Wisconsin, Political Economy.

Wickenden, William Elgin, *Toledo, O.*
B. S., Denison University, Electrical Engineering.
Wichmann, Hugo John, *New Holstein.*
B. A., University of Wisconsin, Chemistry.
Wild, Edmund, *Austin, Tex.*
M. S., University of Texas, Modern German Literature.
Williams, Elmer Howard, *Soldiers Grove.*
M. A., University of Wisconsin, Physics.
Wing, Ethelwyn, *Ludington, Mich.*
B. L., University of Michigan, History.
Winslow, Horatio Gates, *Madison.*
B. A., University of Wisconsin, Psychology.
Wood, Norma Curtis, *Madison.*
B. A., University of Wisconsin, German.
Yoshisaka, Heikichi, *Kobe, Japan.*
M. A., Indiana University, Physical Chemistry.

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UNDERGRADUATES

COLLEGE OF LETTERS AND SCIENCE

SENIORS

Adams, Elsie Louise, *Dunbar.*
Aldrich, Loyal Blaine, *Milwaukee.*
Allen, Marion Bradburn, *Cambridge.*
Althoff, Alexander Theodore Gustav, *Madison.*
Anderson, Esther, *Madison.*
Anderson, Selina Elizabeth, *Racine.*
Angell, Nellie Nadine, *Sun Prairie.*
Bagley, Zillah Julia, *Madison.*
Barber, Sara Curwen, *Oshkosh.*
Barker, Blanche Jessie, *Madison.*
Barlow, Mildred Lucile, *Streator, Ill.*
Bartelt, George, *Milwaukee.*
Bednarek, Joseph Leon, *Beaver Dam.*
Besley, Harold Joslyn, *Waukegan, Ill.*
Binnie, Nora Isabelle, *Poynette.*
Blackburn, Carolyn Etta, *Madison.*
Blied, Matilda Elizabeth, *Madison.*
Bowen, Rose Andrews, *Greenwood.*
Breidenbach, Otto Henry, *Milwaukee.*
Brennecke, Gerhard Carl, *Watertown.*
Brewer, Robert Kemp. *Mineral Point.*

Brewster, Harriet Jane,	*Madison.*
Brindley, William Arthur,	*Boscobel.*
Brockway, Lulu Belle,	*Madison.*
Broughton, Ray,	*Evansville.*
Buchanan, Iva Luella,	*Rio.*
Burgess, Ida Martha,	*Sharon.*
Bushnell, Alfred Hanson,	*Lancaster.*
Byrne, Mary Frances,	*Madison.*
Carey, Alice Matilda,	*Madison.*
Carey, Loretto Helen,	*Sioux City, Ia.*
Case, Florence Dombey,	*West Allis.*
Chave, Georgie Elizabeth,	*Tomahawk.*
Clark, Charles Rollin,	*Carthage, Ill.*
Clark, Tilden Ballard,	*Appleton.*
Clough, Ethel Pearl,	*Portage.*
Coe, Jerome Henry,	*Barron.*
Collman, Chester William,	*Madison.*
Comstock, Verna Victorine,	*Milwaukee.*
Cook, Charles Alva Henry,	*Milton Junction.*
Corstvet, Anna Alice.	*Deerfield.*
Dahl, Elnora Ingeborg,	*Madison.*
Davidson, Mabel Elsie,	*Madison.*
Davis, Benjamin Franklin,	*Madison.*
Davison, Grace Wilhelmina,	*Spokane, Wash.*
Donovan, Margaret Monica,	*Madison.*
*Douglas, Ella May,	*Winona, Minn.*
Douglass, Anna,	*Postville, Ia.*
Douglass, Ruth,	*Postville, Ia.*
Drips, Della Gay,	*La Crosse.*
Dunn, May Vanancia,	*Madison.*
Earl, Florence Corlett,	*Madison.*
Eder, Joseph,	*Milwaukee.*
Edwards, Alma,	*Rochester.*
Ekern, Ruth Nathalia,	*Madison.*
Ellefson, Clarence Ferdinand,	*Madison.*
Ellefson, Elmer Winter,	*Madison.*
Elliott, Laura Belle,	*Eau Claire.*
Erb, Elizabeth Adele Sophia,	*Appleton.*
Erwin, Edith Josephine,	*Milwaukee.*
Esch, Fred Henry,	*Manitowoc.*

*Died January 31, 1907.

Eyman, Elmer Vail,	*Evanstone, Ill.*
Farris, John,	*Fennimore.*
Fay, Helen Armine,	*Madison.*
Ferguson, Martha Luella,	*Milwaukee.*
Fields, Teresa Margaret,	*Fargo, N. D.*
Findley, Albion Garfield,	*Madison.*
Flett, Elizabeth Townsend,	*Racine.*
Foley, Geraldine Hyland,	*Wauwatosa.*
Fox, Bessie Gordon,	*Madison.*
Frankenburger, Margaret,	*Madison.*
Gaynor, Elizabeth Prudence,	*Grand Rapids.*
Geissendorfer, John Theodore,	*Mazomanie.*
Gilfillan, Ella Barbara,	*West Salem.*
Gillett, Charles Mason,	*Superior.*
Gilman, Helen Leonard,	*Madison.*
Gilmore, Grace Allen,	*South Auburn, Neb.*
Goe, Ruth,	*Madison.*
Gray, Harry Leon,	*Mazomanie.*
Greene, Margaret Abby,	*Minot, N. D.*
Grey, Ernest George,	*Milwaukee.*
Grove, Helen Theo,	*Madison.*
Grow, Grace Lillian,	*Neillsville.*
Gruenewald, Arthur Herrmann,	*Oshkosh.*
Gruhl, Edwin Frederick,	*Milwaukee.*
Gugler, Ralph George,	*Milwaukee.*
Hacker, Emil Frederick,	*Arcadia.*
Hall, Charles Norton,	*Madison.*
Hall, Lucy,	*Watertown.*
Hansen, Frederick Alexander,	*Waupaca.*
Hanten, John Henry, Jr.,	*Madison.*
Harker, Elva,	*Dodgeville.*
Harper, Hugh Allen,	*Madison.*
Harris, Helen Louise,	*Racine.*
Hastings, Elizabeth Edna,	*Oregon, Ill.*
Hayden, Catherine Pearl,	*Sun Prairie.*
H'Doubler, Frank Todd,	*Madison.*
H'Doubler, Peale Madeliene,	*Madison.*
Head, Helen Louise,	*Albion.*
Hinkley, Cora Case,	*Milwaukee.*
Hitchcock, Raymond Royce,	*Lake Mills.*
Hobbins, Fanny,	*Madison.*

Hobbins, Grace,	*Madison.*
Holderness, Edna Louise,	*Kenosha.*
Holmes, May Luella,	*Evansville.*
Holum, Ruth Caroline,	*De Forest.*
Hood, William Frederick, Jr.,	*Fairchild.*
Hopkins, Mabel Ruth,	*Rockford, Ill.*
Hopkins, Sadie Mae,	*Fennimore.*
Howe, Anne Josephine,	*Meadville, Pa.*
Howe, Helen May,	*Ripon.*
Hurd, Helen Margaret,	*Chippewa Falls.*
Inbusch, Charles Edwards,	*Milwaukee.*
Ives, George,	*Fort Atkinson.*
Janecky, Adolph Rudolph,	*Racine.*
Jedney, Eli Severn,	*Blair.*
Johnson, Isabel Reid,	*Portage.*
Jones, Edwin Converse,	*Portage.*
Kadonsky, Joseph Frank,	*Dorchester.*
Kaiser, Carl William,	*Marshall.*
Kelley, Chase William,	*Madison.*
Kelly, Mollie Smeallie,	*Albany, N. Y.*
Ketchum, Edith Irene,	*Madison.*
Kimball, Norman Captive,	*Kenosha.*
Knoelk, William Charles,	*Milwaukee.*
Knudson, Agnes Caroline,	*Madison.*
Koenig, Robert Franklin,	*Freeport, Ill.*
Kostalek, John Anton,	*Milwaukee.*
Krey, August Charles,	*Milwaukee.*
Kuntz, William Henry,	*Poynette.*
Lambeck, Arthur Hugo,	*Milwaukee.*
La Reau, Eva Marie,	*Helena, Mont.*
Larson, Alfred,	*Wausau.*
Larson, Lewis P.,	*Whitehall.*
Le Febvre, Clarence Charles,	*Green Bay.*
Loft, Genivera Edmunds,	*Greenwood.*
Lundberg, Emma Octavia,	*Rockford, Ill.*
Maas, Helen Bertha,	*Wauwatosa.*
Mace, Florence Isabel,	*Duluth, Minn.*
Mac Intosh, Frances Mary,	*Madison.*
Mac Kowen, Harriett Estelle,	*West Allis.*
Madson, Charles Andrew,	*Racine.*
Maurer, Erna Edna,	*Arcadia.*

McClernan, Thomas Joseph,	*Madison.*
McGregor, Elizabeth Bowman,	*Platteville.*
McKey, Elizabeth Douglas,	*Janesville.*
McLean, Marguerite Louise,	*Menomonie.*
McNutt, Merna Theile,	*Portage.*
McRae, Mary Ethel,	*Rhinelander.*
Mead, Arlisle Maria,	*Plymouth.*
Menzies, Isabella Mac Gregor,	*Janesville.*
Miller, Florence Mosher,	*Rhinelander.*
Minn, Elsie Marcellite,	*Milwaukee.*
Moll, Dorothea Alvyna,	*Madison.*
Morse, Byrrd Pearl,	*Madison.*
Moser, Hildred Daisy,	*Madison.*
Mueller, Erma Voshardt,	*Two Rivers.*
Mulcahy, Max John,	*Baraboo.*
Munroe, Maude Maxwell,	*Baraboo.*
Munson, Matthias,	*Soldiers Grove.*
Nelson, Oliver Otto,	*Madison.*
Neprud, Martha,	*Westby.*
Newman, Celia Elizabeth,	*Madison.*
Noyes, Miriam,	*Oshkosh.*
Noyes, Roy Enoch,	*Baraboo.*
O'Keefe, Mary Calista,	*Portage.*
Olin, Mary Estelle,	*Bellville, O.*
Orr, Owen Cargill,	*St. Joseph, Mo.*
Orvis, Mary Burchard,	*Madison.*
Owen, Mary Elizabeth Hodges,	*Chicago, Ill.*
Parker, Harry Fletcher,	*Hudson.*
Parker, Marie,	*Fennimore.*
Parsons, Caryl,	*Madison.*
Pelton, Edith Lovinia,	*Madison.*
Pengra, Stella May,	*Madison.*
Petrie, Rollie Al,	*Mauston.*
Pfafflin, Frieda Louise,	*Indianapolis, Ind.*
Pray, Kenneth Louis Moffatt,	*Stevens Point.*
Proud, Mary Hannah,	*Madison.*
Purdy, Leslie Fargher,	*Michigan City, Ind.*
Purin, Charles Maltador,	*Madison.*
Quarles, Charles Bullen,	*Milwaukee.*
Rankin, Carrie Adela,	*Waukesha.*
Rankin, Mildred Rose,	*Morrisonville, Ill.*

Rau, Belden Brosi,	*Beloit.*
Raymond, Lela Maude,	*Sharon.*
Read, James Burton,	*Lake Geneva.*
Rehfeld, Minnie Elmida,	*Horicon.*
Richards, Jesse Laurence,	*Randolph.*
Richardson, Jessie Elizabeth,	*Newport, Ky.*
Roberts Margery,	*Milwaukee.*
Rosholt, Emma Josephine,	*Oconomowoc.*
Rowe, Mae Edith,	*Plymouth.*
Rudolph, Florence Anne,	*Canton, S. D.*
Sanborn, George Allen,	*Madison.*
Sanderson, Katherine Moore,	*Madison.*
Schaus, Irving Peter,	*Milwaukee.*
Schneider, Francis Lee,	*West Salem.*
Schnetzky, Hugo Walter,	*Milwaukee.*
Schnorenberg, John Albert	*Madison.*
Schorer, Oscar Charles,	*Plymouth.*
Schrauck, Valentine Edward,	*Milwaukee.*
Schroeder, Arthur Joseph,	*Racine.*
Schubring, Selma Langenhan,	*Madison.*
Scott, Genevieve Allen,	*Lake Geneva.*
Secrist, Horace,	*Madison.*
Seeger, Paul August,	*Milton Junction.*
Seiler, Alexander Walter,	*Madison.*
Seilstad, Edna Theodora,	*La Crosse.*
Severin, Harry Paul,	*Milwaukee.*
Shaw, Emma Hart,	*Madison.*
Shook, Glenn Alfred,	*La Fayette, Ind.*
Smith, Diana Jean,	*Mondovi.*
Smith, Eleanor Clemons,	*Madison.*
Sprague, William Harvey,	*Elkhorn.*
Stanley, Milton Ritchie,	*Madison.*
Stark, Paul Edmund,	*Madison.*
Steig, Josie,	*Whitehall.*
Stromme, Olaf Ulring,	*Madison.*
Swenson, Edith Dinsdale,	*Madison.*
Swenson, Henry Edward,	*Madison.*
Swint, Katherine Marie,	*Madison.*
Talbot, Roy Maxwell,	*Madison.*
Teisberg, Halvor Orlando,	*Cottage Grove.*
Thompson, Grace,	*Madison.*

Thompson, Tilde Thomina,	*Deerfield.*
Tragsdorf, Clara Christine,	*Neillsville.*
Underwood, Walter Scott,	*Milwaukee.*
Usher, Florence Lou,	*Madison.*
Usher, Robert James,	*South Wayne.*
Virtue, Ethel Buell,	*Webster City, Ia.*
Walker, Alice Mary,	*St. Croix Falls.*
Waller, Frank Laird,	*Menomonie.*
Wallis, Frances Elvira,	*Milwaukee.*
Washburn, Martha Lucile,	*Sturgeon Bay.*
Wehmhoff, Frieda Gertrude,	*Burlington.*
Whelan, Letta Helen,	*Madison.*
White, Charlotte Eleanor,	*Madison.*
White, Della Maude,	*Rhinelander.*
White, Dorothy Elaine,	*Madison.*
Whitford, John Frederick,	*Milton.*
Whyte, Effie Margaret,	*Watertown.*
Wiggenhorn, Ralph Guido,	*Watertown.*
Williams, Frankwood Earl,	*Indianapolis, Ind.*
Willis, May Henrietta,	*Winona.*
Wolfe, Hubert Otto, Jr.,	*Appleton.*
Wright, Colin Wilson, Jr.,	*Monroe.*
Wright, Ethel,	*Milwaukee.*
Wright, Marian Elizabeth,	*Baraboo.*
Wynn, Margaret Shera,	*Madison.*
Young, Lily Mae,	*Madison.*
Zeisler, Leonard Bloomfield,	*Chicago, Ill.*

Course in Commerce

Atwood, Seth Burton,	*Rockford, Ill.*
Brewster, Eugene Moyer,	*Madison.*
Burke, Tracy Lloyd,	*La Crosse.*
Curtin, Joseph Henry,	*Madison.*
Droege, Henry August,	*Eau Claire.*
Jones, Frank Conn,	*Madison.*
Lea, Robert Wentworth,	*Madison.*
Leslie, John Woodworth,	*Chicago, Ill.*
Lewis, Laurence Brownell,	*Madison.*
Logan, Arthur William,	*Lake Geneva.*
Montgomery, Harry Gage,	*Omaha, Neb.*
Mueller, Paul Gerhard,	*Chicago, Ill.*

Nadler, John Frederick,	*Verona.*
Nelson, Charles Lawrence, Jr.,	*Sturgeon, Bay.*
Niven, Robert Marcus, ,	*Sheridan.*
Nolan, Henry Thomas,	*Madison.*
Postlewait, Orvis Allen,	*Oak Park, Ill.*
Pryor, Earl,	*La Crosse.*
Reynolds, Paul Nangle,	*Madison.*
Riley, Edmund Burke,	*Chippewa Falls.*
Sommers, Alfred Louis,	*Sheboygan.*
Stark, Herbert Carl,	*Milwaukee.*
Stone, James Riley,	*Reedsburg.*
Tarr, Charles Albert,	*New Auburn.*
Uehling, Alexander Theodore,	*Watertown.*
Volkmann, William Arnold,	*Kingston.*
Walbridge, John Solon, Jr.,	*Berlin.*
Webb, De Lancey Starkweather,	*Superior.*
Week, Harold J.,	*Stevens Point.*
Woodward, Milton Lysander,	*Reedsburg.*

Course for Normal School Graduates

Adams, Beverly Fletcher,	*Cambria.*
Ames, Jesse Hazen,	*Madison.*
Bell, Elsie Adelaide,	*Madison.*
Bettinger, Lillian Louise,	*Milwaukee.*
Brennan, Nellie,	*Tomah.*
Brown, Roxana Cordia,	*Whitewater.*
Carter, Ethel Luzanne,	*Lancaster.*
Christman, Anna Estelle,	*Grand Rapids.*
Christoffers, Ethel Margaret,	*London.*
Crain, Edward Patrick,	*Eldorado.*
Cronin, Helen Elizabeth,	*Oconomowoc.*
Crosby, May Lillian,	*Muscado.*
Desmond, Susie Isabella,	*Madison.*
Dinsdale, Grace Alma,	*Fennimore.*
Gilbert, Edward Martinius,	*Blair.*
Green, Abbie Anna,	*Basco.*
Holt, Frank Oscar,	*Janesville.*
Jahr, Charles Anton,	*Milwaukee.*
Keats, Myron Eliot,	*Fond du Lac.*
Kempthorne, William Bismarck,	*Platteville.*
Koenen, Anita Katherine,	*Milwaukee.*

Kreutz, Emma Lydia,	*Darlington.*
Nash, Francis Ralph,	*Madison.*
Schuler, Mary Louise,	*Milwaukee.*
Spooner, Lucia Claire,	*Superior.*
Steve, William Frederick,	*Madison.*
Towle, Leonard Ulysses,	*Madison.*
Vaughan, James Patrick,	*Eyota, Minn.*
Williams, Anna Margaret,	*Cobb.*

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JUNIORS

Albers, Frances Clark,	*Wausau.*
Anderson, Elvin Douglas,	*North Crandon.*
Armstrong, Susan Naylor,	*Madison.*
Augsburger, Louis Fred,	*Sheboygan.*
Bagley, Frederick,	*Madison.*
Bailey, George Corbin,	*Madison.*
Barnes, Rufus Alexander,	*Elkhorn.*
Bartlett, Ferdinand von Arlt,	*Milwaukee.*
Baumeister, Theodore Anton,	*Kewaunee.*
Beath, John William,	*Verona.*
Benton, Homer Herrington,	*Richland Center.*
Bertles, Alma,	*Green Bay.*
Binnie, Helen Archibald,	*Poynette.*
Bishop, Burnette Orville,	*Racine.*
Bitter, Elsa Anna,	*Sheboygan.*
Blake, Ambrose Barnum,	*Huron, S. D.*
Blanchard, Araminta Pearl,	*Fennimore.*
Blankenagel, John Carl,	*Hartford.*
Blatz, Gustave Grover,	*Milwaukee.*
Boorman, Leal Mary,	*Madison.*
Borresen, Alice Julia,	*La Crosse.*
Breitkreutz, Adeline Albertine,	*Wausau.*
Brennecke, Alvina Mary,	*Watertown.*
Bresee, Emily May,	*Madison.*
Brindley, Elbert Edwin,	*Richland Center.*
Brown, Althea Huntington,	*Madison.*
Brown, Edna M.,	*Rhinelander.*
Brown, Florence Mary,	*Spring Green.*
Brown, Webster Anderson,	*Rhinelander.*
Caine, Ethel Mary,	*Milwaukee.*
Canan, Cuba Quincy,	*La Crosse.*

Carpenter, Mae Louise,	*Madison.*
Carr, Lucina Langworthy,	*Madison.*
Casey, Edwina Mary,	*Madison.*
Cawley, Margaret Gray,	*Pipestone, Minn.*
Churchill, Charlotte Amelia,	*Monroe.*
Churchill, Ethel Elizabeth,	*Monroe.*
Coleman, Bessie Rachael,	*Madison.*
Colignon, John Joseph,	*Sturgeon Bay.*
Collins, Jessie Margaret,	*Knoxville, Ill.*
Comstock, Florence,	*Milwaukee.*
Crawford, Helen Jennings,	*Hazel Green.*
Currie, Alice Mary,	*Milwaukee.*
Davenport, Audrey Amazon,	*Madison.*
Denu, Autie Lillian,	*Madison.*
De Sautell, William Thomas,	*La Crosse.*
Diemer, Melvin Edison,	*Dakota, Ill.*
Dohmen, Fred Wentworth,	*Milwaukee.*
Downing, Fred Price,	*Watertown.*
Driver, Hazel,	*Darlington.*
Drotning, Anna Elizabeth,	*Stoughton.*
Eastman, Miriam Elizabeth,	*Plymouth.*
Ellefson, Mabel Selma,	*Madison.*
Elliott, Cosalette,	*Kansas City, Mo.*
Enright, Frances Catherine,	*Troy Center.*
Erb, Louise Ernestine,	*Appleton.*
Evans, Alice,	*Madison.*
Evans, Gertrude Catherine,	*Madison.*
Faucett, Frances,	*Laurium, Mich.*
Fehlandt, Olive Marie,	*Madison.*
Finlen, Gertrude Hurford,	*Streator, Ill.*
Flick, Ernest Clinton,	*Augusta.*
Flint, Helen,	*Madison.*
Floete, Franklin Grotewohl,	*Armour, S. D.*
Frost, Raymond Baker,	*Almond.*
Gangstad, Ida Marie,	*Deerfield.*
Gay, Delgracia Barbara,	*Madison.*
Gilkey, Mabel Elma,	*Oshkosh.*
Gingrich, Mabel Aseneth,	*Rockford, Ill.*
Goldschmidt, William Jacob,	*Milwaukee.*
Goldsworthy, Harold Sherman,	*Mineral Point.*
Gordon, Nellie Elsie,	*Waupaca.*

Greubel, Otto Washington,	*Milwaukee.*
Greverus, Jenos,	*Appleton.*
Grobe, Edward Henry,	*Menomonie.*
Gronert, Theodore,	*Prairie du Chien.*
Gutsch, Milton Adolph,	*Sheboygan.*
Hambrecht, Elizabeth Lois,	*Middleton.*
Hannan, William Frawley,	*Milwaukee.*
Hanson, Josephine Burntine,	*Madison.*
Hayes, Catherine Elizabeth,	*La Crosse.*
Heinz, Adolph,	*Madison.*
Hewitt, George Walter,	*Oshkosh.*
Hildebrand, Ruby Zaidee,	*Milwaukee.*
Holcomb, Wilber,	*La Crosse.*
Holmes, Edna Dorothea,	*Milwaukee.*
Hood, Thurman Los,	*La Crosse.*
Hopson, Amy Jane,	*Madison.*
Horan, Lenore Margaret,	*Eau Claire.*
Hunter, Helen Katherine,	*Racine.*
Hutson, Harriet Mae,	*Madison.*
Jamieson, Laura Belle,	*Poynette.*
Jenkins, Deborah May,	*Elroy.*
Jennings, Ruth Leland,	*Madison.*
Joeckel, Carleton Bruns,	*Lake Mills.*
Johnson, Helen McCarty,	*Oshkosh.*
Johnson, J. Cornelius,	*Madison.*
Joslin, Elizabeth Verran,	*Madison.*
Kahl, Emma Jeannette,	*Madison.*
Karges, Frank Edward,	*Burlington.*
Kasten, Marie Antoinette,	*Milwaukee.*
Kirby, Ethel Louisa,	*Milwaukee.*
Kirst, Ottilie Louise,	*Waunakee.*
Knüppel, Arnold Ewald,	*Appleton.*
Küstermann, Walter Wolleben,	*Madison.*
Larsen, Charles Sumner,	*Green Bay.*
Leaper, Warren Eugene,	*Green Bay.*
Lehmann, Van V.,	*Neosho.*
Leiserson, William Morris,	*Madison.*
Leui, Hattie Susan,	*Postville, Ia.*
Lewis, Eva Grace,	*Racine.*
Lloyd, Hubert Evan,	*Cambria.*
Longfield, Mary Fidelia,	*Madison.*

Losse, Herbert Alfred,	*Milwaukee.*
Lounsbury, Sylvia Elizabeth,	*Madison.*
Mac Arthur, Isabella,	*Superior.*
Macomber, Winifred Carr,	*Tomahawk.*
Maiben, Frank Lucilius,	*Lancaster.*
Malone, Edward Samuel,	*Rhinelander.*
Manning, Florence Edna,	*Belvidere, Ill.*
Manor, Emma Elizabeth,	*Baraboo.*
Marshall, Roy R.,	*East Troy.*
Martin, Anne Dodge,	*Darlington.*
Mathews, George Clyde,	*Burlington.*
Maurer, Mae,	*Vermillion, S. D.*
Meier, Amy Katherine,	*Postville, Ia.*
Melaas, Alva Jeannette,	*Stoughton.*
Melby, Elizabeth,	*Merrillan.*
Mercein, Charles Schley,	*Milwaukee.*
Merrill, Winifred Byrne,	*Ashland.*
Mills, Jean,	*Madison.*
Milward, Daisy,	*Madison.*
Moe, Josephine Margretta,	*Pensaukee.*
Morrison, Ethel,	*Pawnee City, Neb.*
Muenster, Ernest, Jr.,	*New Holstein.*
Mulany, John Valentine,	*East Troy.*
Munson, Helen Alice,	*Viroqua.*
Murchison, Hettie Mana,	*Madison.*
Myers, Harold Bunee,	*Janesville.*
Myers, Louise,	*Ottumwa, Ia.*
Nebel, Walter,	*Madison.*
Nelson, Carl Ferdinand,	*Rockford, Ill.*
Neprud, Nora,	*Westby.*
Oeland, Legare Logan,	*Madison.*
Orr, Robert Breckenridge,	*Madison.*
Parker, Amy,	*Fennimore.*
Parmelee, Mary Reynale,	*Sheboygan.*
Peshak, Josephine Angeline,	*Sun Prairie.*
Pilgrim, Mary Grace,	*New Richmond.*
Pope, Rosa Matilda,	*Racine.*
Putnam, May Margarette,	*Madison.*
Rademaker, Oscar,	*Madison.*
Rakow, Bertha Marie,	*Brandon.*
Rankin, Edward Ira,	*Fort Atkinson.*

Rayne, Mary Elizabeth,	*Madison.*
Recker, Lorraine,	*Rhinelander.*
Rehm, Walter Arthur,	*Chicago, Ill.*
Retelstorf, Caroline Dorothea,	*Menomonie.*
Rice, Eleva May,	*Sparta.*
Riess, De witt Frank,	*Sheboygan.*
Rietow, Rhoda Henryetta,	*Sheboygan.*
Ringle, Leander Lewis,	*Wausau.*
Robinson, Edgar Eugene,	*Oconomowoc.*
Roehl, Julius Otto,	*Milwaukee.*
Roehr, Roland Blackstone,	*Milwaukee.*
Roller, Juliann Anna,	*Madison.*
Ruth, Una Gertrude,	*Keokuk, Ia.*
Ruth, Veil Alton,	*Keokuk, Ia.*
Rutte, Joseph Walter,	*Pella.*
Sabin, Ethel Ernestine,	*Geddes, S. D.*
Schaffrath, William,	*Madison.*
Schindler, Jessie Gertrude,	*Milwaukee.*
Schreiner, Hildur Betzy Helene,	*Westby.*
Segerstrom, Signe,	*Rhinelander.*
Sexton, Walter Gresham,	*Marshfield.*
Shatto, Edith,	*Madison.*
Sheets, Geneva,	*Madison.*
Sheets, George Marsh,	*Madison.*
Shiels, Lena May,	*Madison.*
Sieb, Zettie Ethel,	*Racine.*
Simon, Florence Ann,	*La Crosse.*
Simons, Dora May,	*Shawno.*
Smith, Charles Forster, Jr.,	*Madison.*
Smith, Helen Elizabeth,	*Tomahawk.*
Smith, Maud Emily,	*Madison.*
Spence, Mary Leslie,	*Lodi.*
Spencer, Emory Waldo,	*Milwaukee.*
Stark, Charles William,	*Tiffany.*
Stark, Laura Sophia,	*Madison.*
Stavrum, Esther Aletta,	*La Crosse.*
Steenbock, Helen Christine,	*Madison.*
Steinfort, Elvira Bertha,	*Watertown.*
Stemphel, Theodore,	*Indianapolis, Ind.*
Stephenson, Willard, L.,	*South Bend, Ind.*
Stevens, Anna Jassamine,	*Madison.*

Stoddard, Elizabeth Shute,	*Janesville.*
Stoehr, Joseph,	*Lynnville.*
Stoelting, Hugo Hubert,	*Oconto.*
Stuckey, George Ernest,	*St. Louis, Mo.*
Swenson, Victor Gerhard,	*Madison.*
Taylor, Florence Wills,	*Linden.*
Terry, Maude Lenore,	*Brodhead.*
Theobald, Monte Josephine,	*Wayne, Neb.*
Townsend, Elizabeth Hasselle,	*Oconomowoc.*
Traill, Mona,	*Chicago, Ill.*
Upson, Lent Dayton,	*Rockford, Ill.*
Van Slyke, Ruth Corbett,	*Madison.*
Vaughau, Lulu,	*Wauzeka.*
Walker, Louise Estelle,	*Madison.*
Wallace, Eugene Edwards,	*Galena, Ill.*
Wallin, Jennie Belden,	*Prairie du Chien.*
Weber, Lynda Marguerite,	*New Holstein.*
Wehausen, Edna Grace,	*Madison.*
Wertz, Martha Robinson,	*Forreston, Ill.*
White, Ethel Sylvia,	*Deerfield.*
Whitelaw, Mary Reid,	*Portage.*
Whitmore, Alba Daniel,	*Lyons.*
Wieman, Henry Krumsiek,	*Watertown.*
Wightman, Mildred Isabelle,	*Elroy.*
Wright, Horace Wetherill,	*Madison.*

Course in Commerce

Auer, Frank Cleveland,	*Eau Claire.*
Bollenbeck, William Joseph,	*Madison.*
Cashel, Morris Joseph,	*Grafton, N. D.*
Collver, Clinton Irving,	*Clinton.*
Crossman, Roland Derry,	*Fall River.*
Dittman, Fred August,	*La Crosse.*
Elwell, Fayette Herbert,	*McGregor, Ia.*
Hayes, John Robert,	*La Crosse.*
Hefty, Thomas Rudolph,	*New Glarus.*
Hickcox, Frank Thomas,	*Spring Green.*
Hopkins, Claudius Marion,	*Fennimore.*
Kelley, William,	*Woodman.*
Krauthoefer, Emory William,	*Milwaukee.*
Kypke, Pierre August,	*Madison.*

Levisee, Lester Halford,	*Clintonville.*
Luder, Arthur Frank,	*Baraboo.*
Lumsden, Robert Roy,	*Elroy.*
Meves, Walter Henry,	*Sheboygan.*
Meyer, Herman Fred,	*Cleveland.*
Myers, Percy Harold,	*Milwaukee.*
Patterson, Mark Lawrence,	*Baraboo.*
Peck, Calvin Huntley,	*Racine.*
Rice, Clarence James,	*Milwaukee.*
Rice, Felix G.,	*Milwaukee.*
Sanborn, Raymond Parker,	*Racine.*
Schiess, Roy Edward,	*Chicago, Ill.*
Simpson, Verazano Kerdolff,	*Madison.*
Skinner, John Sharp,	*Princeton, Ill.*
Slade, Mott Thomas,	*Slade's Corners.*
Sletten, Obert,	*La Crosse.*
Soukup, Rudolph,	*Sturgeon Bay.*
Stroud, Ray Morris,	*Portage.*
Sylvester, Edwin S.,	*Milwaukee.*
Tarbox, Charles William,	*La Crosse.*
Walvoord, Anthony,	*Cedar Grove.*

Course for Normal School Graduates

Baker, Herbert Uglo,	*Edmund.*
Banting, Lilian,	*McFarland.*
Barnes, Volney Goodrich,	*Madison.*
Bewick, Grace Beatrice,	*Madison.*
Buresh, Anthony Edward,	*Racine.*
Cleary, Frances Ada,	*Platteville.*
Crumpton, May Alice,	*Superior.*
Day, Benedict Fortune,	*Hazel Green.*
Desmond, Susie Isabella,	*Madison.*
Feuerhak, Martin George,	*La Crosse.*
Eldred, Calude Henry,	*Marshall.*
Gallagher, Carolyn Eleanor,	*Deerfield.*
Gesell, Gerhard Adam,	*Madison.*
Hair, Coral Margaret,	*Ashland.*
Hammond, Ellen,	*Westfield.*
Hilgendorf, William Fred,	*Madison.*
Hiliemann, Ada Cecile,	*Sheboygan.*
Jones, Myrtle Estelle,	*Seattle, Wash.*

Kreilkamp, Christian Joseph,	*Allenton.*
Leins, Lenore,	*West Bend.*
Liessmann, Alma Louise,	*Reedsburg.*
Mueller, Emy Caroline,	*Milwaukee.*
Polzin, Benjamin Albert,	*Winona.*
Priegnitz, Irene Elizabeth,	*Lake Mills.*
Rundell, Marcia,	*Platteville.*
Russell, William Giles,	*Eau Claire.*
Shannon, James William,	*Oconomowoc.*
Steele, Nellie Gertrude,	*Whitewater.*
Stevens, Leta Lucile,	*Montfort.*
Stevens, Velma Sylvester,	*Montfort.*
Stiehm, Herman William Henry,	*Johnson Creek.*
Tighe, Benjamin Bennet,	*Clinton.*
Van Natta, Jesse Allan,	*Platteville.*
Wadleigh, Matthew Fletcher,	*Stevens Point.*
Walter, Minnie Adelle,	*Berlin.*
Williams, Elizabeth Ann,	*Racine.*

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SOPHOMORES

Alford, Alice Irene,	*Madison.*
Allen, Mary Louisa,	*Lake Geneva.*
Allen, Ruth Alice,	*Lake Geneva.*
Anderson, Achoah Cornelia,	*Milwaukee.*
Ausman, Carl Frederick,	*Eau Claire.*
Baer, Edna Leola Violet,	*Hartford.*
Bailey, George Corbin,	*Madison.*
Barry, Mary Regina,	*Oregon.*
Baumgarth, Elsie Magdalena,	*Prairie du Sac.*
Becker, Kathryn Christina,	*Watertown.*
Bergh, Lona Irene,	*Madison.*
Berkman, David Mayo,	*Rochester, Minn.*
Bessey, John,	*Milwaukee.*
Beye, Howard Lombard,	*Oak Park, Ill.*
Billings, Goodsell,	*Cobb.*
Bird, Elsie Josephine,	*Madison.*
Birge, Raymond Thayer,	*Troy, N. Y.*
Bissell, Wayne William,	*Lodi.*
Bodden, Rega, Frances,	*Milwaukee.*
Bower, Marguerite,	*Clarkston, Mich.*
Boyd, Alma Marie,	*Madison.*

Bram, Hazel Ella,	*Madison.*
Brandenburg, Frederick Sarles,	*Madison.*
Bridgman, Robert White,	*Madison.*
Brinkman, Carlyle K.,	*Iron River.*
Brown, Elizabeth,	*Madison.*
Buchen, Gustav William,	*Sheboygan.*
Burnham, Dorothy Marie,	*Madison.*
Burnham, Ethel Romelia,	*La Crosse.*
Butler, Anna Isabel,	*Madison.*
Cady, Grace Raymond,	*Reedsburg.*
Caradine, Elva Jane,	*Monroe.*
Carlin, Hallie Estelle,	*Ashland.*
Carpenter, Florence Melanie,	*Windsor.*
Castendyck, Elsa Bertha,	*Peru, Ill.*
Castle, Ward Church,	*Chicago, Ill.*
Clark, Ethel Bough,	*McGregor, Ia.*
Cochrane, Ava Luella,	*Madison.*
Cogswell, Daniel Burgess,	*Madison.*
Coerper, Florence Maude,	*Hartford.*
Coleman, Herbert Clinton,	*Lowell.*
Coleman, Mary Katherine,	*Madison.*
Comstock, Amy,	*Milwaukee.*
Confer, Edna Lorene,	*Madison.*
Conger, Louis Herbert,	*Milwaukee.*
Cook, Ruth Harwood,	*Oshkosh.*
Cronin, Alice Beatrice,	*Madison.*
Cronin, Clara Margaret,	*Madison.*
Crounse, Frances Hilton,	*Oak Park, Ill.*
Cudahy, Clarence John,	*Milwaukee.*
Cullen, Edwin Alexander,	*Madison.*
Culver, Harry,	*Cobb.*
Cunningham, Carl Jefferson,	*Chippewa Falls.*
Cutter, Helen Catherine,	*Eau Claire.*
Davison, Walter Bert,	*Clear Lake.*
Desmond, James Francis,	*Madison.*
Diederich, Victor Peter,	*Madison.*
Dietrich, Clara Eunice,	*Zion City, Ill.*
Dodge, Anna Edith,	*Windsor.*
Doe, Ethelyn Anna,	*Elgin, Ill.*
Donaldson, Jean Watt,	*McGregor, Ia.*
Donovan, Katherine Agnes,	*Madison.*

Dorothy, Julia Mabel,	*St. Croix Falls.*
Douglass, Blanch Eunice,	*Lake Mills.*
Dunn, Anna Regina,	*Madison.*
Edgerton, Henry White,	*Washington, D. C.*
Elder, Paul Billean,	*Bryan, O.*
Evans, Charles Floyd,	*Muscoda.*
Evans, Orrena Louise,	*Dodgeville.*
Fass, Hugo William,	*Milwaukee.*
Federle, Hedwig Eleanora,	*West Bend.*
Fisher, Roland Frederick,	*Baraboo.*
Fitch, Helen Fairfield,	*Mason City, Ia.*
Flick, Ernest Clinton,	*Augusta.*
Flynn, Michael Henry,	*Hartford.*
Frodermann, Emma,	*Milwaukee.*
Gale, Martha,	*Oregon, Ill.*
Gamble, Sarah Estella,	*Moline, Ill.*
Gapen, Jane Bopeep,	*Madison.*
Gardiner, Charlotte Georgia,	*Madison.*
Gay, Mary Elizabeth,	*Madison.*
Gedney, Kathrene Sutherland,	*Onalaska.*
Gesell, Egbert George,	*Tomahawk.*
Gilkey, Edna Annie,	*Oshkosh.*
Gill, Honor Laura,	*Madison.*
Gloyer, Walter Oscar,	*Milwaukee.*
Godfrey, Rush Clayton,	*Lancaster.*
Goetz, Alice Sarah,	*Postville, Ia.*
Goldenberger, Olivia Monona,	*Madison.*
Greene, Eunice Genevieve,	*Madison.*
Griswold, Chester Arthur,	*Waukesha.*
Grover, Alice Mary,	*Madison.*
Gunther, Otto,	*Sheboygan.*
Gunther, Theodore John,	*Milwaukee.*
Haman, Jennie Emilie,	*Milwaukee.*
Handt, Hazel Carolyn,	*Fond du Lac.*
Hart, Arthur Eugene,	*Turtle Lake.*
Hayes, Mae Estelle,	*Janesville.*
Hayes, Ruth Ingram,	*Eau Claire.*
Heise, George William,	*Milwaukee.*
Henry, Alice Aline,	*Elroy.*
Hern, Herbert Arthur,	*Tiffany.*
Heuer, Josephine,	*Madison.*

Hibbard, Clarence Addison,	*Racine.*
Higbee, Hazel Bessey,	*Madison.*
Hinn, Alma Katherine,	*Fennimore.*
Hints, Richard Francis,	*Monticello.*
Hoegh, Nanna Marie,	*Spring Grove, Minn.*
Hogan, James Mangan,	*Fond du Lac.*
Holmes, Arthur Thomas,	*La Crosse.*
Holston, Anna,	*Ashland.*
Homuth, Erwin Silas,	*Madison.*
Hopkins, Mary Wright,	*Pueblo, Colo.*
Hoyt, Grace Elizabeth,	*Menomonie.*
Hudson, Philip Loren,	*Mazomanie.*
Jensen, Martha Claire,	*Marinette.*
Jenson, Clara Martina,	*Edgerton.*
Johnson, John Hugo,	*Des Moines, Ia.*
Johnson, Nina,	*Kokomo, Ind.*
Juergens, Carl Henry,	*Madison.*
Jung, Ernst,	*Milwaukee.*
Kalmbach, Mabel Lorena,	*Sturgeon Bay.*
Kayser, Stella Otillia,	*Madison.*
Kelley, Park Kenneth,	*Madison.*
Kelly, Mary Margaret,	*La Crosse.*
King, Mary Ann,	*Spring Green.*
Kirwen, Jeanne Mabel,	*Stevens Point.*
Kleinheinz, Caroline,	*Madison.*
Krause, Lenore,	*Yankton, S. D.*
Kreutzer, Ellen Marie,	*Sawyer.*
Krumrey, Adelaide,	*Plymouth.*
Kuhlmeyer, Edith Pauline,	*Madison.*
Kurtenacker, Lilly Margaret,	*La Crosse.*
Lachmund, Clara,	*Milwaukee.*
Leary, Agnes Veronica,	*Madison.*
Lewellin, Bessie Eleanor,	*Waterloo.*
Lewis, Isabell Meekin,	*Fond du Lac.*
Lewis, Martha Ellen,	*Madison.*
Lewis Read,	*Oak Park, Ill.*
Libby, Caroline Gail,	*Madison.*
Lindemer, Louise Bunnell,	*Milwaukee.*
Lindstrem, Jeannette Marie Emily,	*Oconto.*
Linkfield, Hazel Frances,	*Elgin, Ill.*
Lochner, Louis Paul,	*Milwaukee.*

Longfield, Mary Ellen,	*Madison.*
Lundquist, Frances Gertrude,	*Kenosha.*
Lyle, Margaret Blanche,	*Madison.*
Mahoney, Emmett Paul,	*Viroqua.*
Malone, James Francis,	*Juneau.*
Marshall, Eugene Joseph,	*Detroit, Mich.*
Mathie, Edward Joseph,	*Stevens Point.*
McClure, Martha Swingley,	*Mount Morris, Ill.*
McDermott, Frank,	*Darlington.*
Meek, Katherine Victoria,	*Dane.*
Melick, Alyce Marguerite,	*Dodgeville.*
Melick, Gladys Ennor,	*Dodgeville.*
Mertz, Aline Adeline,	*Elmside.*
Meyer, Lydia Lucile,	*Milwaukee.*
Michelson, Alma Geatha,	*Mt. Horeb.*
Miller, Karl Ferdinand,	*Milwaukee.*
Miller, Walter Charles,	*Manawa.*
Minier, Emma Fanny,	*New Richmond.*
Minnick, Asa Morrill,	*New Lisbon.*
Moffat, Mary Elizabeth,	*Davenport, Ia.*
Morell, Gertrude Ina,	*Milwaukee.*
Morris, Paul John,	*Congress Park, Ill.*
Moss, Ruth Elizabeth,	*Milwaukee.*
Moss, Theda Antoinette,	*Milwaukee.*
Nelson, Olga Theresa,	*Racine.*
Newcomer, Harry Sidney,	*Chattanooga, Tenn.*
Noe, Paul William,	*Milwaukee.*
Owens, Lois May,	*Wauwatosa.*
Owens, Lylia Jeanette,	*Madison.*
Patterson, Jessie Margaret,	*Darlington.*
Peabody, Marion Grace,	*Madison.*
Pearce, Charles Chester,	*Dodgeville.*
Peltier, George Leo,	*Grand Rapids.*
Perkins, Lillian,	*Dodgeville.*
Perry, Clayton Shields,	*Madison.*
Pfeifer, Marie Janet,	*Sheboygan.*
Phillips, Blanche Beulah,	*Sioux City, Ia.*
Pierpont, Mabel,	*Aurora, Ill.*
Place, Sadie Barclay,	*Marinette.*
Pomeroy, Lilla,	*Oconomowoc.*
Post, Kate,	*Madison.*

Pressentin, Marie Louise,	*Madison.*
Price, Beulah May,	*Madison.*
Pugh, Laura,	*Portage.*
Quarles, Henry Capron,	*Milwaukee.*
Rapps, Grover Herman,	*Milwaukee.*
Rheem, George Samuel,	*Minneapolis, Minn.*
Reynolds, Alice Rice,	*Sturgeon Bay.*
Rigney, Stephen John,	*Sciota Mills, Ill.*
Riley, William Henry,	*Altoona.*
Roberts, Robert R.,	*Madison.*
Roehm, Florence C.,	*Calumet, Mich.*
Roehm, Mary Margaret,	*Calumet, Mich.*
Roloff, Edna Arlisle,	*Madison.*
Rosencrans, Blanche Louise,	*Kansas City, Mo.*
Rosenthal, Aaron Bernhard,	*Milwaukee.*
Rossberg-Leipnitz, Johanna,	*Louisville, Ky.*
Roybar, Nellie Claire,	*Madison.*
Sachtjen, Herman William,	*Madison.*
Samuels, Alexander Felix,	*West Salem.*
Sawyer, Lilla Holt,	*Beaver Dam.*
Schlaefer, Adeline Louisa,	*Menomonie Falls.*
Schulze, Bertha Johanna,	*La Crosse.*
Schuppert, William Lewis,	*Glidden.*
Seek, Blanche Akeley,	*Ashland.*
Severson, Ida Josephine,	*De Forest.*
Shelton, Margaret,	*Rhinelander.*
Shepard, Katherine Helen,	*Mineral Point.*
Sherron, Alice Marie,	*Monroe.*
Shreffler, Arthur Lee,	*Joliet, Ill.*
Silverthorne, George Plumer,	*Wausau.*
Slocum, Percy Wilfrid,	*Slocum, R. I.*
Simpson, Josephine Verrazand,	*Winona, Minn.*
Slyfield, Forrest Foster,	*Sheboygan.*
Smith, Benjamin Walter,	*Janesville.*
Smith, Jessie Clemons,	*Madison.*
Spalding, Edward Wells,	*Tomah.*
Spellman, Lloyd Pyre,	*Kansas City, Mo.*
Sprecher, Alice Adell,	*Madison.*
Staley, Forest Henry,	*Madison.*
Steffen, Lyman Allen,	*Antigo.*
Steinfeldt, Charles Rudolph,	*West De Pere.*

Steinke, Laura Anna,	*Madison.*
Stephens, Aberta,	*Wapello, Ia.*
Stevens, Bessie Maude,	*Madison.*
Stickney, Mary Eleanor,	*Madison.*
Stiehm, Ewald Otto,	*Johnson Creek.*
Stitzer, Sibyl Mae,	*Boscobel.*
Stough, Charlotte,	*Minneapolis, Minn.*
Stover, Daniel George,	*Milwaukee.*
Sutherland, Harry Nicholas,	*Madison.*
Swanson, Ada Elizabeth,	*Madison.*
Swenson, Thorborg,	*Rockford, Ill.*
Syftestad, Anna Emelie,	*Madison.*
Sykes, Dora Louisa,	*Milton Junction.*
Taylor, Mary Katherine,	*Madison.*
Terry, Edna June,	*Madison.*
Te Selle, Clarence John,	*Sheboygan Falls.*
Thatcher, Sarah Gertrude,	*Escanaba, Mich.*
Thayer, Vivian Trow,	*Delafield.*
Thomas, Ethel May,	*Superior.*
Tormey, Mary Regina,	*Madison.*
Trainor, Kate,	*Madison.*
Trumpf, Florence Laura,	*Plaine.*
Tyvand, Henry Albert,	*Mt. Horeb.*
Vaughan, Ione De La Fontaine,	*Milwaukee.*
Volkmann, Hilda Caroline,	*Watertown.*
Vreeland, Clyde Emerson,	*Richland Center.*
Wahl, Harry Boswell,	*Stratford.*
Walbridge, Ethel Lavonne,	*Madison.*
Waterman, Lucile Byrne,	*Superior.*
Watkins, Mary Elisabeth,	*Edmund.*
Watson, Alice Perle,	*Griggsville, Ill.*
Wattawa, Virginia,	*Kewaunee, Ill.*
Wheelock, George R.,	*Peoria, Ill.*
Wheelock, Lydia,	*Stevens Point.*
Wheelwright, Vivian Rowley,	*Belleville.*
Whittier, James Roy,	*Madison.*
Wilke, Eda Martha,	*Madison.*
Wilkins, Alma Lee,	*Viroqua.*
Willett, George Henry,	*Madison.*
Williams, Evalyne Rene,	*River Falls.*
Williams, Jean,	*Milwaukee.*

Williams, Mabel Elizabeth,	*Cobb.*
Williams, Robert Eversy,	*Milwaukee.*
Wilson, L. Elizabeth,	*Madison.*
Witte, Dexter Hathaway,	*Waukesha.*
Witte, Edwin Emil,	*Watertown.*
Wittich, Walter Julius,	*Milwaukee.*
Wohlenberg, Erma Louise,	*Holstein, Ia.*
Wolfermann, Sldney Jonas,	*Streator, Ill.*

Course in Commerce

Baley, Earl Francis,	*Shullsburg.*
Baumbach, Frederic Louis,	*Milwaukee.*
Brown, Frederick George,	*Oshkosh.*
Brumder, Herbert Paul,	*Milwaukee.*
Castle, Sidney Lester,	*Chicago, Ill.*
Conley, John Albert,	*Reedsbudg.*
Coorsen, Louis Arthur,	*Milwaukee.*
Coward, Stanley Chandler,	*Oregon.*
Cunningham, Forest Ferdinand,	*Beloit.*
Dinet, Eugene Augustus,	*Joliet, Ill.*
Doud, Giles,	*La Crosse.*
Dudley, Harold Mann,	*Evanston, Ill.*
Eierman, Arthur Charles,	*Milwaukee.*
Erickson, Elmer Andrew,	*Marinette.*
Fenton, Ida,	*Madison.*
Fernald, Sydney Wentworth,	*Madison.*
Foiles, Earl Le Roy,	*De Kalb, Ill.*
Frank, Arthur August,	*Milwaukee.*
Gascoigne, Farwell,	*Evanston, Ill.*
Gielow, Walter Charles,	*Manitowoc.*
Grady, Albert William,	*Port Washington.*
Haase, Oscar Rudolph,	*Milwaukee.*
Heath, Samuel Wild,	*Fond du Lac.*
Helmholz, Henry Albert,	*Madison.*
Hood, Frank Gardiner,	*Madison.*
Jones, Milton Vaughn,	*Chilton.*
Kaltenborn, Walter Georgo von,	*Merrill.*
Kerschensteiner, Mark Joseph,	*Jefferson.*
Kleimenhagen, Walter Ernest,	*Kilbourn City.*
Knight, Douglas Scotten,	*Bayfield.*
Laas, Robert McKean,	*Chicago, Ill.*

Lamb, Loyd,	*La Crosse.*
Lewis, Marshall,	*Milwaukee.*
Luce, Rey Vincent,	*Chilton.*
Marshall, Randolph Gregory,	*Des Moines, Ia.*
Meyer, Ewald Henry,	*Reedsburg.*
Neeves, Harold Wilfred,	*Madison.*
Oliver, Edward James,	*Hudson.*
Pattison, Morgan Martin,	*Superior.*
Pelton, Glenn Edgar,	*Baraboo.*
Pelton, Guy Meredith,	*Baraboo.*
Peters, Adolph Charles,	*Wonewoc.*
Pierce, Alfred Thompson,	*Madison.*
Rector, Walter Whitney,	*Fennimore.*
Rightor, Chester Edward,	*Madison.*
Ross, Thompson,	*Rensselaer, Ind.*
Salter, George Harold,	*Colby.*
Sato, Kinichi,	*Milwaukee.*
Schwalm, Arthur Leonard,	*Madison.*
Schwandt, Robert Henry,	*Appleton.*
Shankland, Andrew Daniel,	*Madison.*
Shibata, Genkwan,	*Toyama, Japan.*
Siefert, Hugo Herbert,	*Reedsburg.*
Sproesser, Jacob Weber,	*Watertown.*
Stoppenbach, Reed Charles,	*Jefferson.*
Syftestad, Ole Selmer,	*Madison.*
Tinker, Frank Bernard,	*Mazomonie.*
Vaughan, Jay Russell,	*Rhinelander.*
Wieboldt, Raymond Carl,	*Chicago, Ill.*
Wilder, George Green,	*Chicago, Ill.*
Wilkins, Milford Alvah,	*Clinton.*

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FRESHMEN

Abbott,Eveline Patience,	*Madison.*
Andrus, Calla Adelaide,	*Madison.*
Anthony, Angela Josephine,	*Milwaukee.*
Appel, Moses Montifore,	*Huron, S. D.*
Appleby, Hazel,	*Madison.*
Atwood, Marion John,	*Madison.*
Axley, Albert,	*Cleveland.*
Baker, Amos Greene,	*Beaver Dam.*
Ball, Tom Lee,	*Madison.*

Banks, Parley Francis,	*Moomaw, Neb.*
Barnes, Beatrice Frances,	*Madison.*
Barnes, Dorothy Mary,	*Madison.*
Bartlett, Walter Scott,	*Milwaukee.*
Beidleman, Elisha,	*South Milwaukee.*
Bentzen, Frederick Whelpley,	*Warrens.*
Bergum, Bessie Isabelle,	*De Forest.*
Bird, Ira Washington,	*Milwaukee.*
Bissell, Marion Orpha,	*Lodi.*
Blackman, Harold Edwin,	*Sparta.*
Blair, Milton Johnston,	*La Crosse.*
Blake, Effie Margaret,	*Rochester.*
Bolstad, Sanford Theodore,	*Deerfield.*
Borgman, Elizabeth Vera,	*Kewaunee.*
Boyle, Frank Edward,	*Eau Claire.*
Bradford, Ann Helen,	*Madison.*
Brandel, Harry McPherson,	*Fort Atkinson.*
Brasure, Eva Mae,	*Hartford.*
Breitenstein, Lilian,	*Madison.*
Browne, Neil Allan,	*Cobb.*
Brunow, Walter Theodore,	*Milwaukee.*
Buchanan, Sauvain, Victor,	*Madison.*
Buckley, Glenna Catherine,	*Beloit.*
Budd, Ethel Lockwood,	*Madison.*
Bullard, Elsie Rea,	*Madison.*
Burke, Robert Jerome,	*Madison.*
Byrne, Catherine Berenice,	*Madison.*
Cady, Emile Charles,	*Kilbourn.*
Campbell, George,	*Gurnee, Ill.*
Cape, Jennie,	*Dodgeville.*
Carey, Marie,	*Sioux City, Ia.*
Carpenter, Thomas King,	*Chicago, Ill.*
Carter, Fanny Walbridge,	*Hinsdale, Ill.*
Cary, Caroline Marie,	*Madison.*
Cash, Tidie Tillon,	*Superior.*
Celleyham, Adeline Hayes,	*Madison.*
Challoner, Agnes,	*Oshkosh.*
Chaplin, Leta Lucile,	*Plymouth.*
Christensen, Hans Gerhard,	*La Crosse.*
Christoffer, Harry John,	*London.*
Chynoweth, Phillips,	*Madison.*

Clark, Genevieve Prudence,	*Northville, Mich.*
Cobb, Mary Maude,	*Ashland.*
Conkey, Charles De Witt,	*Superior.*
Corbett, Elizabeth Frances,	*Milwaukee.*
Crumpton, Doris Hartman,	*Superior.*
Cunningham, Florence Mary,	*Beloit.*
Curtis, John Huss,	*Madison.*
Dahl, Edna Louise,	*Madison.*
Davies, Avrina Bernice,	*Dixon, Ill.*
Davis, Elizabeth Mary,	*Madison.*
Davis, Helen Emma,	*Madison.*
Davis, Marguerite,	*Racine.*
Derthick, Wilber Morris, Jr.,	*Madison.*
Dillman, Elsie Emma,	*Madison.*
Dodge, Helen Josephine,	*Monroe.*
Donahue, Zita Veronica,	*Reedsburg.*
Donnelly, Emmett Archybalde,	*Milwaukee.*
Dorney, Alexander John,	*Stevens Point.*
Draves, Carrie Minnie,	*Milwaukee.*
Duffy, Francis Ryan,	*Fond du Lac.*
Durbrow, Frances Wilson,	*Madison.*
Edwards, Ralph Ernest,	*Chicago, Ill.*
Eggum, Andrew,	*Mount Horeb.*
Ellsworth, Clara Amelia,	*Barron.*
Emmett, Shirley Lincoln,	*Racine.*
Engelhardt, Edna Frances,	*Milwaukee.*
Epstein, Louise Dorothea Fredericka,	*Portage.*
Erlanson, Clarence Leon,	*Superior.*
Farwell, Anna,	*Dodgeville.*
Feinauer, Bertha Katherine,	*Ashland.*
Fergen, Allen Peter,	*Madison.*
Ferrar, Kathleen Frances,	*Madison.*
Fish, Franklin Stowe,	*Milwaukee.*
Fisher, Edith Janet,	*Omaha, Neb.*
Fitch, Helen Marie,	*Sun Prairie.*
Fitz Gerald, Mabel Ellen,	*Eau Claire.*
Flett, Julia Louise,	*Racine.*
Foley, Mabel Margaret,	*Juneau.*
Frey, Noah Joseph,	*Waukesha.*
Fuhrman, Edith,	*Fond du Lac.*
Fuller, Anna Caroline,	*Madison.*

Gaynor, Gertrude Genevieve,	*Grand Rapids.*
Gesell, Bertha May,	*Madison.*
Geyer, Denton Loring,	*Roswell, N. M.*
Glenn, Elma Gertrude,	*Lancaster.*
Gorst, Genevieve English,	*Mendota.*
Graves, Lola May,	*Madison.*
Green, Elsie May,	*Chicago, Ill.*
Van Griethuysen, Claude Andrew,	*Oostburg.*
Griffin, Grace Margaret,	*Madison.*
Gross, Lyda Leah,	*Necedah.*
Habermann, Margaret Oria,	*Lodi.*
Hanchett, David Scott,	*Chicago, Ill.*
Hanson, Martin,	*Marinette.*
Hard, Walter,	*Superior.*
Harkness, Bessie,	*Durand.*
Hart, Ray Weston,	*Footville.*
Hartman, Leonie Anna,	*Madison.*
Hartman, Lorraine Ann,	*Chicago, Ill.*
Harvey, Gladys,	*Menomonie.*
H'Doubler, Margaret Newell,	*Madison.*
Hean, Emma Isabel,	*Madison.*
Heddle, John Ronald,	*Madison.*
Heilman, Arthur George John,	*Madison.*
Hemstock, Vena Rae,	*Sparta.*
Hensey, John Louis,	*Madison.*
Herreid, Alfred Theodore,	*Blair.*
Hewitt, Irving John,	*Madison.*
Hildebrand, Hazel Cecilia,	*Rhinelander.*
Hill, Laura Frances,	*Baraboo.*
Hilpertshauser, Lillie Caroline,	*Sheboygan.*
Hofstetter, Grace Elizabeth,	*Lyons, Ia.*
Holman, Earle Stafford,	*Deerfield.*
Hollister, Lisle Johnson,	*Evansville.*
Holthoff, Ray,	*Milwaukee.*
Hooey, Helen May,	*Rice Lake.*
Hopkins, Ralph Epley,	*Cumberland.*
Hoskin, Alice Alberta,	*Montford.*
Hosmer, Helen,	*Ashland.*
Houser, Hazel,	*Mondovi.*
Howe, Grace Carrier,	*Boscobel.*
Hoyt, Ralph Melvin,	*Menomonie.*

Huette, Norma Karste,	*Sheboygan.*
Hughes, Edna Mae,	*Mason City, Ia.*
Huson, Willard Lyman,	*Plymouth.*
Hutchison, Helen,	*Madison.*
Hyde, William George,	*Racine.*
Jacque, Peter Nicholas,	*Port Washington.*
Jamieson, Hugh Clancy,	*Poynette.*
Jenswold, Franklin Ernest,	*Baraboo.*
Jones, Isabel, Elizabeth,	*Madison.*
Jones, Myrtle Edith,	*Madison.*
Jones, Victoria Esther,	*Madison.*
Justenson, Bird Marion,	*Augusta.*
Kaestner, Florence Morie,	*Plymouth.*
Kasiska, Eva Helen,	*Pocatello, Ida.*
Kasiska, Mabel Josephine,	*Pocatello, Ida.*
Kayser, Carl Theodore,	*Milwaukee.*
Kearney, Thomas Matthew,	*Racine.*
Kelly, Christmas,	*Milwaukee.*
Kenney, Frances Isabelle,	*Cherokee, Ia.*
Kerr, Samuel, Jr.,	*Oak Park, Ill.*
Kindschi, Alta Ester,	*Prairie du Sac.*
Kitchell, Gertrude,	*Topeka, Kan.*
Kleinheinz, Monica Augusta,	*Madison.*
Knapp, Peter Martin,	*Madison.*
Knight, Euphemia Annie,	*Bayfield.*
Kuehne, Myrtle Goldie,	*Eagle River.*
Laible, Lorina Augusta,	*Dakota, Ill.*
Lalk, Edward William,	*Koshkonong.*
Langan, Mary Elizabeth,	*Kenosha.*
Lauerman, Archibald William,	*West Bend.*
Lea, Maude Stiles,	*Madison.*
Leach, Ada Viola,	*Hartford.*
Le Grand, Alexander John,	*Milwaukee.*
Leicht, George Jacob,	*Menomonee Falls.*
Lentzner, Florence Ida,	*Milwaukee.*
Lins, Christina Cathleen,	*Spring Green.*
Lovejoy, Opal Hope,	*West Salem.*
Lueckenbach, Edward Jacob,	*Marshfield.*
Luhman, George,	*Belvidere, Ill.*
Lumsden, Reuben,	*Kendall.*
Mackin, Agnes,	*Omaha, Neb.*

Malig, Harvey August,	*Milwaukee.*
Marshall, Florence Luella,	*Belvidere.*
Martin, Ross George,	*Oregon.*
Matheson, Forrest Day,	*Elkhorn.*
Matson, Selma Victoria,	*Madison.*
McComb, Archie,	*Milton.*
McCormick, Ethel Catherine,	*Hunter's Hot Springs, Mont.*
McKee, Mary Rose,	*Madison.*
McMillen, Florence Edythe,	*Fort Atkinson.*
McRae, Florence Edna,	*Rhinelander.*
Mead, Hazel Marguerite,	*Madison.*
Melcher, Emily Binney,	*Hinsdale, Ill.*
Meuer, William Joseph,	*Madison.*
Meyer, John Adolf,	*Milwaukee.*
Millen, Bernice Celeste,	*Winona, Minn.*
Miller, Maude Lavina,	*Baraboo.*
Milverstedt, Hazel,	*Chicago, Ill.*
Minch, Lillian Barbara,	*Madison.*
Mueller, George John,	*Pheasant Branch.*
Munson, Hope Downs,	*Viroqua.*
Murley, Eva Iola,	*Shullsburg.*
Murphy, Pauline,	*Evanston, Ill.*
Murphy, Peter James,	*Chippewa Falls.*
Naffz, Carl Francis,	*Madison.*
Needham, Maurice Hubert,	*Hinsdale, Ill.*
Newman, John Robert,	*Madison.*
Noble, Mary Lucile,	*Madison.*
Olsen, Kenneth Gerhard,	*Stoughton.*
Orme, Thomas Howell,	*Racine.*
Ottery, Ella May,	*Fond du Lac.*
Padley, Pearl Carolyn	*Lodi.*
Paris, Margaret Irma,	*Prairie du Chien.*
Parr, Thad Cassius,	*Madison.*
Pease, Chester Eliza,	*Sun Prairie.*
Peterson, Basil Irvin,	*Blair.*
Polzin, Arthur Willson,	*Winona, Minn.*
Pomeroy, Mabel Frances,	*Oconomowoc.*
Pond, Lee Thomas,	*Eau Claire.*
Prescott, Kathryn Elizabeth,	*Sheboygan.*
Priest, Gladys Eva,	*Madison.*
Proehl, Theodora,	*Mendota, Ill.*

Puls, Charles Frank,	*Milwaukee.*
Purcell, Florence Margaret,	*Madison.*
Quale, Susanna Josephine,	*Madison.*
Quinn, Lewis James,	*Waterford.*
Rasmusen, Edith Borchsenius,	*Madison.*
Ravn, Signe,	*Merrill.*
Reardon, Una Lee,	*Rhinelander.*
Reed, Clinton Virgil,	*Benton, Ill.*
Reed, Jesse Marion,	*Benton Ill.*
Regan, William Harry,	*West De Pere.*
Reid, Mary Elizabeth,	*Oconomowoc.*
Reigstad, Olin Spencer,	*De Forest.*
Reilly, Joseph Vincent,	*Mt. Horeb.*
Reinking, Erna Carolina,	*Madison.*
Richardson, Maurice Leonard,	*Turtle Lake.*
Richardson, Pearl,	*Rockford, Ill.*
Richardson, William Duncan,	*Milwaukee.*
Rickeman, Elizabeth Miranda,	*Helenville.*
Ridley, Ralph Lorin,	*Black River Falls.*
Rieder, Rudolph Theodore,	*Milwaukee.*
Riley Katherine Elizabeth,	*Darlington.*
Ripley, Lucy,	*Chicago, Ill.*
Roach, Florence,	*Fennimore.*
Roberts, Marion,	*Waupaca.*
Robertson, Almon Fulton,	*Livingston, Mont.*
Roehm, Norma Rosalie,	*Ashland.*
Ross, Alice Betsey,	*Hinsdale, Ill.*
Ruedebusch, Frances,	*Mayville.*
Ruedebusch, Gretchen,	*Mayville.*
Samuels, Grace Marguerite,	*Darlington.*
Sanders, Mamie Amelia,	*Madison.*
Sanderson, Logan Henry,	*Rhinelander.*
Schneider, Cora Virginia,	*Milwaukee.*
Schnuchel, Frances Albert,	*Kenosha.*
Schoenemann, Mathilde Christine,	*Spring Green.*
Schreier, Konrad,	*Sheboygan.*
Schrup, Henrietta Marie,	*Dubuque, Ia.*
Schuette, Henry August,	*Green Bay.*
Schuetz, Alma Katherine,	*Mendota, Ill.*
Schuler, Margaret Mary,	*Milwaukee.*
Schwartz, Nellie Elizabeth,	*East Troy.*

Sellery, Gertrude,	*Chicago, Ill.*
Shannon, Frank John,	*Oconomowoc.*
Shattuck, Frances Ermina,	*Medford.*
Shenkenberg, Etta Irene,	*Waterford.*
Sherwood, Clara Marie,	*Madison.*
Showalter, Winifred Ruth,	*Madison.*
Smith, Beulah Evelyn,	*Ashland.*
Smith, Frederick Ansel,	*Chippewa Falls.*
Spalding, Stella Louise,	*Madison.*
Sperle, Dina Henryetta,	*McFarland.*
Sprague, Henry Albert,	*La Crosse.*
Stealy, Nellie Evelyn,	*Pierre, S. D.*
Steere, Metta Elizabeth,	*Kalispel, Mont.*
Stephens, Elinor,	*Chicago, Ill.*
Stephens, Helen Belle,	*Dixon, Ill.*
Steven, John Boardman,	*Glenwood.*
Stevens, Leonard Jackson,	*Tomah.*
Straight, Hazel Azubah,	*Madison.*
St. Sure, Violet,	*Madison.*
Sutherland, Sarah Augusta,	*Madison.*
Tawney, Everette Franklin,	*Winona, Minn.*
Taylor, Ethel Rose,	*Sioux City, Ia.*
Tearnan, Clyde Hadrian,	*Marshfield.*
Tearnan, Raymond Arthur,	*Marshfield.*
Terry, Clara Jeannette,	*Madison.*
Terry, Jessie Clare,	*Baraboo.*
Thomas, Emily Menerva,	*Menomonie.*
Thomas, John Dokon,	*Chicago, Ill.*
Thompson, James Stacy,	*Ligonier, Ind.*
Thrasher, Sarah Ellen,	*Kewaunee, Ill.*
Tobenkin, Joseph,	*Madison.*
Tolg, Clarence Charles,	*Waukesha.*
True, Katharine, ,	*Baraboo.*
Van Auken, Clarice,	*Madison.*
Wahrer, Frederic Louis,	*Fort Madison, Ia.*
Wakeman, Maud,	*Madison.*
Weed, Leslie Bryant,	*Milwaukee.*
Wells, Wayland Coleman,	*Omro.*
Wheelock, Ralph Wadsworth,	*Peoria, Ill.*
Wilcox, Nellie McArthur,	*Fort Atkinson.*
Williams, Anna Frances,	*Madison.*

Wittwer, Herman Louis,	*Monticello.*
Woodard, Mary Ruth,	*Clinton.*
Worthington, George Edmund,	*Madison.*
Wright, Ely Cleveland,	*Marinette.*
Wylie, Frederick McNelly,	*Morrisonville.*
Yankoski, Dell Charles,	*Berlin.*
Yorgey, Blanche Vivian,	*Horicon.*
Ziegaus, Irvin Warren,	*Sharon.*
Zillmer, Raymond Theodore,	*Milwaukee.*
Zimmerman, Lillian Grace,	*Milwaukee.*

Course in Commerce

Aiken, Claude Eugene,	*Onalaska.*
Amen, Harlan Rosegrant,	*Missouri Valley, Ia.*
Ashton, Charles Frank,	*Rhinelander.*
Barr, Ralph Haywood,	*Lake Geneva.*
Behnish, Charles Edward,	*Milwaukee.*
Bent, George Arthur,	*Marinette.*
Bickel, Harold Le Roy,	*Racine.*
Brewer, John Dwight,	*Fort Atkinson.*
Brindley, Joshua Lavern,	*Richland Center.*
Brown, Seeley Matthew,	*Ligonier, Ind.*
Carncross, Elmer Aeneas,	*Lodi.*
Coleman, James Rickeston,	*Milwaukee.*
Crandall, Benjamin Fletcher,	*Milwaukee.*
Davey, Cyril Earl,	*Dodgeville.*
Dobie, David Leslie,	*Hawthorne.*
Ducker, George Alison, Jr.,	*Joliet, Ill.*
Eberle, George Jacquinn,	*Sheboygan.*
Eddy, Allen Le Roy,	*Sun Prairie.*
Egan, John Fabian,	*Ashland.*
Erickson, Floyd Tyler,	*Elroy.*
Eriksen, Fred Esbern,	*Wauwatosa.*
Fisher, Edward James,	*Madison.*
Fosdick, Frank Aikens,	*Sioux Falls, S. D.*
Fraser, William,	*Honey Creek.*
Fuley, Harry Martin,	*Hayward.*
Gaarden, John H.,	*Spring Valley.*
Gantz, Marvin Everett,	*Eau Claire.*
Glaeser, Martin Gustave,	*Sheboygan.*
Green, William Henry,	*Ligonier, Ind.*

Guenther, Ernest Otto,	*San Antonio, Tex.*
Hadley, John Sebastin,	*Superior.*
Hamilton, Walter Luse,	*Two Rivers.*
Hanson, Jay Burleigh,	*Marinette.*
Hardy, Almerson James,	*Waukesha.*
Hartley, Ralph Roswell,	*Oshkosh.*
Henke, Edward Frank,	*Lowell.*
Hines, Bert Radcliffe,	*Cumberland.*
Hornung, Elmer Engelken,	*Mineral Point.*
Howe, William Canterbury,	*Boscobel.*
Jacobs, Herbert Edward,	*Sawyer.*
Jencks, Moses Amos,	*Lodi.*
King, Amos Jefferson,	*Hudson.*
Lee, Martin Henry,	*Hayward.*
Lord, Frank Edwin,	*Dixon, Ill.*
Mills, George Harold,	*Lodi.*
Murrish, John Pangburn,	*Mazomanie.*
Nash, Charles Mott,	*Grand Rapids.*
Pieper, Walter Elkhart,	*Milwaukee.*
Pratt, Henry Kollock,	*Plainfield.*
Prinz, Alfred,	*Milwaukee.*
Quirk, Earl William,	*Minneapolis, Minn.*
Ryan, John Eugene,	*Monroe.*
Seckel, Fabian Edward,	*Chicago, Ill.*
Segerstrom, Henry Norman,	*Rhinelander.*
Simpson, Jefferson Allan,	*Shullsburg.*
Spitler, Woodhull Irwin,	*Rensselaer, Ind.*
Springer, Benjamin Franklin,	*Milwaukee.*
Squires, Leo T.,	*Elroy.*
Stafford, Harold Stanley,	*Eau Claire.*
Stark, Hubbard William,	*Tiffany.*
Tiffany, Earle Edwin,	*La Crosse.*
Tobin, Joseph Michael,	*Elkhorn.*
Van Slyke, John Daniel,	*Madison.*
Weber, Earl Sydney,	*London.*
Weld, Frederick Joseph,	*Rockford, Ill.*
Whitmore, Irving Wallace,	*Wabasha, Minn.*
Wilce, John Woodworth,	*Milwaukee.*
Winsor, Herbert Munsel,	*Mauston.*

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Adult Special Students

Anderson, Carl Tesch,	*Milwaukee.*
Beath, Orville Andrew,	*Verona.*
Beyerstedt, Mildred Arabelle,	*Winona, Minn.*
Blean, Mary Ethel,	*Albany, Ill.*
Bobo, Mildred Elma,	*Ladysmith.*
Bosson, Amy Goodrich,	*Calumet, Mich.*
Brandt, Fredolia Eugenia,	*Watertown.*
Brunk, Vena Clifford,	*Chicago, Ill.*
Cary, Myra Treat,	*Madison.*
Caswell, Leigh Crawford,	*Marinette.*
Davis, Adelia Barbara,	*Madison.*
Ehlman, Walter Warren,	*Milwaukee.*
Eidsmoe, Sever B.,	*Greenwood.*
Findeisen, Florence Susan,	*Berwyn, Ill.*
Frank, Meta Elise,	*Milwaukee.*
Fraser, Elizabeth Snodgrass,	*Madison.*
Hall, Esther Adelia,	*Madison.*
Hanson, Edwin Albert,	*Blair.*
Hoffman, Arthur,	*Brookfield.*
Holty, Martin Newell,	*Madison.*
Hurlburt, Royden B.,	*Durand.*
Jacobs, Charlotte Matilda,	*Madison.*
Jacobs, William Cassoday,	*Madison.*
Jamieson, Mary Lucy,	*Poynette.*
Jessup, John Mercator,	*Madison.*
Johnson, Charles Edward,	*Milwaukee.*
Johnson, Margaret Isabelle,	*Sharon.*
Jolivette, Bert Alexander,	*La Crosse.*
Kander, Lizzie Black,	*Milwaukee.*
Kartak, Mollie Maurer,	*Oconomowoc.*
Ketelle, Hubert,	*Lindsey.*
Klaner, Alfred Fred,	*Chicago, Ill.*
Kujawa, Peter James,	*Fennimore.*
Lamphere, Harry Leroy,	*Madison.*
Langlois, Emrette Davis,	*Humboldt, Ia.*
Le Clerc, Genevieve Margaret,	*Milwaukee.*
Levisee, Hazel Albright,	*Madison.*
Lewes, Thomas Edwin,	*Madison.*
McGeever, James Daniel,	*Cuba City.*
McKay, Paul Wesley,	*Madison.*

McKenna, Harry,	*Humboldt, Ia.*
Morris, George Charles,	*Madison.*
Morton, Julius Hilding,	*Duluth, Minn.*
Olsen, Anna Margaret,	*Madison.*
Parkinson, Myra,	*Madison.*
Pfund, Helen,	*Madison.*
Proctor, Ermina Belle,	*Madison.*
Purdy, Grace Du Souchet,	*Buenos Aires, S. A.*
Pynch, Jenner Alfred,	*Madison.*
Robertson, Arthur Hampton,	*Madison.*
Rudolph, William Thomas,	*Juneau.*
Sloanaker, Sarah Elizabeth,	*Milwaukee.*
Smith, William Harvey, Jr.,	*Mamaroneck, N. Y.*
Spande, Thomas Jacobs,	*Deerfield.*
Stephens, Florence Currie,	*Mt. Pleasant, Ia.*
Steudel, George Elias,	*Chilton.*
Stevens, John Harold,	*Rurand.*
Stewart, James Ralph,	*Baraboo.*
Titus, Florence Grace,	*Madison.*
Trump, Leland Lewis,	*Milwaukee.*
Veerhusen, Elsie,	*Madison.*
Wellensgard, John August,	*Berlin.*
Wellman, Lulu Delle,	*Madison.*
Williams, Frank Ernest,	*Madison.*
Wilson, Christina McDougall,	*Madison.*
Wood, Le Roy Emory,	*Hancock.*

ADULT SPECIAL STUDENTS, COURSE IN COMMERCE

Bernhard, Faraday Henry,	*Madison.*
Hopkinson, Roy Samuel,	*Milwaukee.*
Kennedy, Lucius Ellsworth,	*Janesville.*
Lowman, Marvin Bliss,	*Worthington, Ind.*
Schoenwetter, Theodore Henry,	*Juneau.*
Trowbridge, Harley George,	*Hayward.*

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Course in Pharmacy

FOUR YEAR COURSE

Armstrong, Henry Clay,	*Ashland,*	Junior.
Du Mez, Andrew Grover,	*Cashton,*	Senior.
Hoyer, Theodore Robert,	*Winneconne,*	Freshman.

Kendell, William Henry,	*Waukesha,*	Sophomore.
Sievers, Arthur Frederick,	*New Holstein,*	Senior.
Simons, Jasper Edgar,	*Lodi,*	Freshman.
Smith, Hermione,	*River Falls,*	Junior.
Wakeman, Nellie Antoinette,	*Columbus,*	Freshman.

TWO YEAR COURSE

Anderson, Myron Albert,	*Mondovi,*	First Year.
Behlke, Paul Hugo,	*Watertown,*	First Year.
Billings, Henry Mortimer,	*Cobb,*	First Year.
*Duscheck, Edward,	*Sun Prairie,*	Second Year.
Dustin, Leslie Bertrand,	*Peoria, Ill.,*	Second Year.
Fluck, James William,	*Washburn,*	Second Year.
Gilbert, Walter Thaddeus,	*Blair,*	First Year.
Glennon, Edward Charles,	*Stevens Point,*	Second Year.
Hanson, Henry Peter,	*Hayward,*	First Year.
Ihk, Carl Albert,	*Ashland,*	First Year.
Jährling, Valerio Cala,	*Manila, P. I.,*	Second Year.
Jones, Jay Idris,	*Randolph,*	First Year.
Keho, Joseph,	*Tacoma, Wash.,*	Second Year.
*Link, Alfred August,	*Madison,*	First Year.
Luckey, Claude Campbell,	*Madison,*	First Year.
Lueders, Eugene August,	*Columbus,*	First Year.
McDaniel, Clarence,	*Soldiers Grove,*	Second Year.
Russell, Archibald,	*Tomahawk,*	First Year.
*Schulz, Raymond Louis,	*Milwaukee,*	Third Year.
*Sorley, Stanley Manleus,	*Weyauwega,*	Third Year.
Swenholt, John,	*Madison,*	Second Year.
Titus, Martin Edwin,	*Wilton,*	Second Year.
Wagner, Walter Edwin,	*Sturgeon Bay,*	First Year.
Ward, Alvin Henry,	*Fond du Lac,*	Second Year.
Whitman, Harlow Sautelle,	*Hurley,*	First Year.
Whitman, Mattie Isabelle,	*Baraboo,*	First Year.
Worthington, Theodore Thomas,	*Madison,*	First Year.

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COLLEGE OF ENGINEERING

SENIORS

Anthony, Rowland Barney,	*Kewaunee, Ill.,*	E. E.
Arndt, Reuben Field,	*De Pere,*	M. E.
Baily, Robert William,	*Des Moines, Ia.,*	M. E.

*Taking three-year course.

Barker, Charles Pease,	*Chippewa Falls,*	G. E.
Barker, Harold Jean,	*Madison,*	C. E.
Bayne, Robert Royden,	*Madison,*	G. E.
Bechlem, Alfred William,	*Plymouth,*	E. E.
Benedict, Guy Albert,	*Oshkosh,*	E. E.
Bennett, Benjamin Franklin,	*Baltimore, Md.,*	G. E.
Beye, Cudworth,	*Madison,*	M. E.
Blackburn, Fred M.,	*Verona,*	E. E.
Bleyer, Charles Faben,	*Milwaukee,*	M. E.
Bock, John George,	*Manitowoc,*	C. E.
Brown, Edwin Stanton,	*Indianapolis, Ind.,*	C. E.
Bryant, John Owen,	*Chippewa Falls,*	G. E.
Burgess, Edward Wesley,	*Chicago, Ill.,*	M. E.
Carey, Alfred Blake,	*Wild Rose,*	C. E.
Chapman, Louis Leon,	*Milwaukee,*	G. E.
Clark, Stewart Lambert,	*Milwaukee,*	C. E.
Cleary, John Edward,	*Antigo,*	Ch. E.
Colburn, Avery Reeves,	*Highland Park, Ill.,*	E. E.
Cortelyou, George Stillwell,	*Brodhead,*	C. E.
Curtin, James Hugh,	*Madison,*	C. E.
Dean, Joseph Edward,	*Milwaukee,*	G. E.
Derge, Ferdinand Julius,	*Eau Claire,*	E. E.
Diehl, Alfred Samuel,	*Elroy,*	C. E.
Donohue, Jerry, Jr.,	*Sheboygan,*	C. E.
Eagle, Celestine Clement, Jr.,	*Madison,*	E. E.
Ebert, Frederick Charles,	*Tomah,*	E. E.
Edmund, Charles Edward,	*Fond du Lac,*	M. E.
Egelhoff, Robert Fred,	*Milwaukee,*	M. E.
Estberg, Howard Cloes,	*Waukesha,*	E. E.
Field, Guy Alden,	*Sharon,*	M. E.
Fisher, Arthur Augustus,	*Beaver Dam,*	C. E.
Freeman, William James,	*Horicon,*	M. E.
Gaarden, Oscar H.,	*Spring Valley,*	E. E.
Gage, Samuel Wallace,	*Eagle Bridge, N. Y.,*	C. E.
Gattiker, Willis Alfred,	*Baraboo,*	E. E.
Gelbach, Warren Allen,	*Lancaster,*	C. E.
Gielow, Edwin Herman,	*Manitowoc,*	E. E.
Glab, William Nicholas,	*Dubuque, Ia.,*	M. E.
Goedjen, Albert John,	*Manitowoc,*	E. E.
Green, Charles William,	*Chicago, Ill.,*	E. E.
Greenfield, Benjamin,	*Madison,*	E. E.

Greisen, Elijah Charles,	*Sturgeon Bay,*	M. E.
Grunert, Arthur Earl,	*Chicago, Ill.,*	G. E.
Harley, William Sylvester,	*Milwaukee,*	M. E.
Hatch, Samuel Reuben,	*Appleton,*	C. E.
Heebink, Garret Egbert,	*Cedar Grove,*	C. E.
Henderson, Dwight Ferman,	*Indianola, Ia.,*	E. E.
Heyroth, Albert Herman,	*Manitowoc,*	E. E.
Hibbard, Allen Charles,	*Milwaukee,*	E. E.
Higson, Charles Roy,	*Madison,*	M. E.
Hine, Willard Foster,	*Fairchild,*	E. E.
Hirschberg, Ernest Samuel,	*Milwaukee,*	G. E.
Holben, Marvin Washington,	*Norcater, Kan.,*	E. E.
Holt, Thomas,	*Milwaukee,*	E. E.
Hubbard, Edwin Palmer,	*Milwaukee,*	E. E.
Hudson, William Douglass,	*Madison,*	C. E.
Ingals, Francis Ephraim,	*Chicago, Ill.,*	G. E.
Janssen, Walter Arion,	*Madison,*	G. E.
Johnson, Paul Browning,	*Madison,*	C. E.
Kachel, William Frederick,	*Baraboo,*	C. E.
Kehr, Carl Meriman,	*Sterling, Ill.,*	G. E.
Keller, Arthur Edward,	*Spring Green,*	M. E.
Kelly, Thomas Francis,	*Milwaukee,*	E. E.
Ketchum, Harold Edwin,	*Madison,*	G. E.
Ketchum, Wesley Merritt,	*Milwaukee,*	E. E.
Klug, John Frederick,	*Arcadia,*	E. E.
Kruse, Harry,	*Freeport, Ill.,*	G. E.
Lacher, Walter Scott,	*Waukesha,*	C. E.
Leasman, Emil Leo,	*Boscobel,*	Ch. E.
Legreid, Herman Nicholas,	*Stoughton,*	Ch. E.
Lehman, Otto Leo,	*Green Bay,*	E. E.
Libby, Lawrence Moses,	*New Richmond,*	E. E.
Lieber, William Henry,	*Milwaukee,*	M. E.
Loesch, Richards Llewellyn,	*Chicago, Ill.,*	E. E.
Lucas, Thomas Joseph,	*Madison,*	E. E.
Luick, Adolph James,	*Milwaukee,*	M. E.
Mainland, John,	*Racine,*	M. E.
Manegold, Frank William John,	*Milwaukee,*	G. E.
McCulloch, John Alexander,	*Madison,*	G. E.
Meadowcroft, Miner T.,	*Poynette,*	C. E.
Middleton, Owen William,	*Madison,*	G. E.
Newton, George Cheney,	*Milwaukee,*	M. E.

Nordberg, Bruno Victor Edward,	*Milwaukee,*	M. E.
Olson, Engwall,	*Marinette,*	E. E.
Osgood, Charles,	*Oak Park, Ill.,*	M. E.
Paesler, Fred Edward,	*Madison,*	E. E.
Parker, Eustace Edwin,	*Evansville,*	C. E.
Pease, Bernard Snell,	*Richland Center,*	C. E.
Peck, Orwin K.,	*Mitchell, S. D.,*	G. E.
Penn, William Clay,	*Monroe,*	C. E.
Powell, David Alva,	*Madison,*	E. E.
Rahn, Bruno,	*Milwaukee,*	M. E.
Reinhard, Louis Ferdinand,	*Milwaukee,*	E. E.
Richter, Edward Rand,	*Milwaukee,*	G. E.
Rowe, Wilfred Lincoln,	*Eau Claire,*	G. E.
Ryder, Gana Gustavus,	*Madison,*	G. E.
Sanford, Herbert Brooks,	*Madison,*	E. E.
Sargent, Julian Downing,	*Milwaukee,*	M. E.
Schroeder, Frank Charles,	*Madison,*	C. E.
Severson, Stephen Benjamin,	*Stoughton,*	E. E.
Sherman, Lewis, Jr.,	*Milwaukee,*	G. E.
Simon, Edmond Montefiore,	*Madison,*	E. E.
Simpson, James Frederic,	*Chicago, Ill.,*	G. E.
Smeaton, Charles Alexander,	*Waukesha,*	E. E.
Smith, Jack Morgan,	*Madison,*	C. E.
Smith, Orrin Cheney,	*Clinton,*	C. E.
Sperry, David Rockwell,	*Batavia, Ill.,*	M. E.
Stearns, Edward Wording,	*Chicago, Ill.,*	C. E.
Tarr, John Cecil,	*New Auburn,*	Ch. E.
Teschan, Walter Frohsinn,	*Milwaukee,*	M. E.
Thayer, Benjamin Single,	*Ripon,*	C. E.
Thomas, Edward Anderson,	*Waukesha,*	E. E.
Thompson, Isaac Thorbus,	*Blair,*	M. E.
Thompson, Louis Mark,	*Spokane, Wash.,*	E. E.
Uihlein, Oscar Louis,	*Milwaukee,*	G. E.
Van Meter, Thomas Earl,	*Madison,*	G. E.
Wachenfeld, Stephen Charlemagne,	*Orange, N. J.,*	M. E.
Wadsworth, William John,	*Madison,*	M. E.
Wagner, George Ernst,	*Fond du Lac,*	E. E.
Ward, Louis Edward,	*Ft. Atkinson,*	Ch. E.
Warner, Frank Melville,	*Fountain City,*	M. E.
Wessel, Frederick Charles Ernst,	*Milwaukee,*	G. E.
Wetlaufer, Ervin Hudson,	*Oshkosh,*	M. E.

Whelan, Thomas C.,	*Chippewa Falls,*	E. E.
Whitmore, Joseph Bond,	*Mukwonago,*	M. E.
Wied, John Clifford,	*Waupaca,*	M. E.
Winkler, William Kneeland,	*Milwaukee,*	M. E.
Zapffe, Carl,	*Milwaukee,*	G. E.
Zwolanek, Joseph,	*Muscoda,*	M. E.
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JUNIORS

Abbott, Ellis Pitt,	*Madison,*	C. E.
Anderson, Peter Melvin,	*Klevenville,*	E. E.
Anderson, Victor Roy,	*Janesville,*	M. E.
Atkinson, Sheridan Knox,	*Eau Claire,*	G. E.
Beasley, Phineas Welles,	*Madison,*	C. E.
Beasley, William Howard,	*Eexarkana, Ark.,*	E. E.
Bennett, Vivian Andrews,	*Madison,*	G. E.
Birkett, Miles Wren,	*Madison,*	E. E.
Blankenburg, Herbert Louis,	*Milwaukee,*	G. E.
Blatz, Albert Valentine,	*Milwaukee,*	E. E.
Bleuel, Alex Hugo,	*Milwaukee,*	G. E.
Brandel, Clarence Oliver,	*Milwaukee,*	E. E.
Brown, Paul Vincent,	*Racine,*	C. E.
Brownlee, Frank Richard,	*Milwaukee,*	M. E.
Buchecker, Albert Israel,	*Madison,*	E. E.
Buetow, Walter Charles,	*Milwaukee,*	C. E.
Byron, Charles Loomis,	*Milwaukee,*	E. E.
Cerna, Santiago,	*Nadodores, Coah, Mex.,*	C. E.
Cheney, Charles Albert,	*Madison,*	G. E.
Chuchian, Sahak Melkon,	*Boston, Mass.,*	E. E
Collins, Arthur Lee,	*Madison,*	E. E
Comer, Ragner Otolis,	*St. Croix Falls,*	M. E
Cooper, Marion Deane,	*Black River Falls,*	E. E.
Copp, Wayland John,	*Madison,*	M. E.
Cunningham, John Wilbur,	*Madison,*	C. E.
Daenitz, Ottomar Paul Theodore,	*Madison,*	G. E.
Daniels, George Christian,	*Freeport, Ill.,*	M. E.
Davila, Lorenzo Juan,	*Juana Diaz, Porto Rico,*	C. E.
Disque, Robert Conrad,	*Madison,*	E. E.
Dick, Roy Ingles,	*Oregon,*	E. E.
Drought, Orville Hay,	*Waukesha,*	C. E.
Faber, Merle Everett,	*Madison,*	M. E.
Field, Forrest Whipple,	*Sharon,*	M. E.

Fisher, Raymond Walter,	*Phillips*,	G. E.
Fox, Edwin Gordon,	*Madison*,	E. E.
Frost, Frank Summer,	*Evansville*,	G. E.
Gayton, Oscar Francis,	*Madison*,	C. E.
Gibson, Walter Gordon,	*Fond du Lac*,	G. E.
Gillespie, James Edward,	*Stockbridge*,	C. E.
Goddard, George Theron,	*Waupun*,	E. E.
Grace, Harry Holden,	*Superior*,	G. E.
Graff, Bjarne Halfdan,	*Madison*,	C. E.
Graham, Fred Martin,	*Falls City, Neb.*,	E. E.
Gray, Glenn Arthur,	*Oregon*,	G. E.
Greenleaf, Warren Theodore,	*Milwaukee*,	G. E.
Grenamyer, Arthur Garfield,	*Madison*,	Ch. E.
Greve, Frederick William, Jr.,	*Brooklyn, N. Y.*,	M. E.
Grodske, Walter John,	*Milwaukee*,	C. E.
Gross, Edward Lascar,	*Milwaukee*,	Ch. E.
Gross, George Louis,	*Stevens Point*,	C. E.
Hague, Frank Louis,	*Lake Mills*,	C. E.
Hain, Elmer Lamont,	*Edgerton*,	C. E.
Hale, Earl Leonard,	*Mauston*,	M. E.
Halbert, Charles Arthur,	*Madison*,	C. E.
Halliday, Malcolm John,	*Riverside, Ill.*,	M. E.
Harper, Harry M.,	*Madison*,	M. E.
Hayes, Michael Thomas,	*Janesville*,	C. E.
Hejda, Joseph William,	*Manitowoc*,	C. E.
Hills, Earl Vinton,	*Wauqun*,	E. E.
Hinckley, Dana Alexander,	*Winneconne*,	E. E.
Hirsch, John George,	*Milwaukee*,	C. E.
Hodges, Paul,	*Monroe*,	E. E.
Hoffmann, Arthur William,	*Sheboygan*,	Ch. E.
Holmes, Horace Mars,	*Galesburg, Ill.*,	C. E.
Hosler, Harry,	*Reedsburg*,	E. E.
Howson, Louis Richard,	*Madison*,	C. E.
Huntley, Lee Harvey,	*Neillsville*,	C. E.
Ives, Frederick Walter,	*Rubicon*,	M. E.
Jerrard, Leigh Patterson,	*Superior*,	C. E.
Johns, Edward Francis,	*Madison*,	M. E.
Johnson, Chester Nels,	*Delevan*,	G. E.
Kaulfuss, Julius Ernest,	*La Crosse*,	C. E.
Kennedy, Frank M.,	*Madison*,	C. E.
Kifer, Edwin Henry,	*Spring Green*,	E. E.

Kislingbury, Henry George,	*Mineral Point,*	E. E.
Kruesi, Frank Eugene,	*Schenectady, N. Y.,*	E. E.
Krum, Henry Alexander,	*Madison,*	C. E.
Kryzinski, Antony Jacob,	*Milwaukee,*	E. E.
Kuelling, Herbert John,	*Shullsburg,*	C. E.
Kuentz, Oscar Otto,	*Milwaukee,*	M. E.
Lautz, George Henry,	*La Crosse,*	C. E.
Lindemann, Walter Carl,	*Milwaukee,*	M. E.
Liver, Harold Allan,	*Wonewoc,*	C. E.
Lloyd, Emrys J.,	*Cambria,*	E. E.
Lokke, Julius Henry,	*Baldwin,*	E. E.
Lunde, Sigurd Gilbertson,	*Wausau,*	C. E.
Lutze, Henry Fred,	*Sheboygan,*	E. E.
Mathews, William Wyman,	*De Pere,*	C. E.
McComb, Ross Kenneth,	*Brillion,*	G. E.
Melcher, Austin Gove,	*Hinsdale, Ill.,*	M. E.
Meyer, Henry William, Jr.,	*Appleton,*	E. E.
Miller, Charles John,	*La Crosse,*	Ch. E.
Morgan, Alexander William,	*Madison,*	E. E.
Moriarty, Eugene Winfield,	*Elroy,*	E. E.
Murray, Roy,	*Madison,*	E. E.
Nelson, Oscar Hermann,	*Stoughton,*	C. E.
Neubauer, Frank John,	*De Pere,*	E. E.
Oakes, Francis Henry,	*Madison,*	C. E.
Outzen, Andrew Newton,	*Madison,*	E. E.
Palmer, Edward Albert,	*Janesville,*	E. E.
Palmer, Guy H.,	*Sparta,*	E. E.
Perwien, Richard,	*Madison,*	C. E.
Pfannstiehl, Jean Jacques,	*Baraboo,*	G. E.
Phillips, Victor Leo,	*Madison,*	G. E.
Pitz, Arthur Herman,	*Manitowoc,*	C. E.
Platten, William Joseph,	*Green Bay,*	E. E.
Porter, Lloyd Wardall,	*Evansville,*	C. E.
Porter, Warren Newman,	*Evansville,*	C. E.
Post, Herbert Lee,	*Black River Falls,*	C. E.
Raygada, Pedro Eugenio,	*Paita, Peru,*	C. E.
Reed, James Olin,	*Madison,*	C. E.
Reinhard, Gustav Adolph,	*Milwaukee,*	E. E.
Rice, Ernest Frederic,	*Milwaukee,*	E. E.
Roberts, Earl Price,	*Oconomowoc,*	E. E.
Rogers, Sumner Barnes,	*Milwaukee,*	G. E.

Rosholt, John Nicholas,	*Oconomowoc,*	E. E.
Ryan, William Henry,	*Janesville,*	C. E.
Schleifer, August Charles,	*Cedarburg,*	E. E.
Schmidt, Ferdinand Carl,	*Milwaukee,*	E. E.
Schoellkopf, Walter Horton,	*Buffalo, N. Y.,*	E. E.
Schuler, Frank Joseph,	*Milwaukee,*	M. E.
Schwede, Fred August,	*Sawyer,*	C. E.
Scribner, Charles Archibald,	*Fond du Lac,*	E. E.
Semrad, Charles Albert,	*Madison,*	E. E.
Shapiro, Joseph,	*Antigo,*	Ch. E.
Sheldon, Thomas Drummond,	*Darlington,*	E. E.
Shepherd, Claude Harold,	*Texarkana, Ark.,*	E. E.
Sherman, John Rockwood,	*Brodhead,*	C. E.
Shorey, Edwin Ray,	*Oshkosh,*	C. E.
Shurts, Clarence Leon,	*Madison,*	E. E.
Simonds, Herbert Rumsey,	*Chicago, Ill.,*	M. E.
Slater, Clarence James,	*Escanaba, Mich.,*	M. E.
Smith, Andrew Adelbert,	*Waterford,*	C. E.
Spencer, Fred Lewis,	*Waupaca,*	E. E.
Steenrod, Terrill Finney,	*Madison,*	E. E.
Steinfort, Carl Edward,	*Ephraim,*	E. E.
Suhm, Erwin Roman,	*Milwaukee,*	Ch. E.
Thickens, John Herman,	*Appleton,*	Ch. E.
Thiel, Bruno Carl,	*Milwaukee,*	C. E.
Thiele, Otto Victor,	*Milwaukee,*	M. E.
Thorsen, William Clarence,	*Milwaukee,*	E. E.
Tibbitts, Fayette Amos,	*Hingham,*	E. E.
Tierney, John Thomas,	*Woodland,*	M. E.
Van Derzee, Gould Whitney,	*Milwaukee,*	E. E.
Wahl, Louis Edward,	*Antigo,*	E. E.
Waite, Walter Edwin,	*Brooklyn,*	E. E.
Wallber, Hilbert Edwin,	*Milwaukee,*	C. E.
Walser, Edward William,	*Madison,*	M. E.
Weber, Cornelius George,	*Theresa,*	E. E.
Wehausen, George Washington,	*Madison,*	E. E.
Whitney, Alden Bradford,	*Madison,*	C. E.
Wiggins, Edward Ruger,	*Janesville,*	M. E.
Wippermann, William,	*Chilton,*	M. E.
Zeisler, George H.,	*La Crosse,*	C. E.

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Sophomores

Acret, George Edward,	*Brooklyn, N. Y.,*	E. E.
Alexander, Jesse,	*New Philadelphia, O.,*	E. E.
Arnold, Louis George,	*Eau Claire,*	C. E.
Balch, John Willigrod,	*Marshalltown, Ia.,*	C. E.
Balsley, Henry Edwin,	*Madison,*	C. E.
Bartlett, Charles Lynn,	*Milwaukee,*	C. E.
Bassett, William Beacher,	*Beaver Dam,*	E. E.
Bates, Floyd Elton,	*Mason City, Ia.,*	C. E.
Bechaud, Jean Pierre,	*Jefferson,*	C. E.
Becker, John Walter,	*Chicago, Ill.,*	C. E.
Beitel, Roy Milton,	*Madison,*	E. E.
Bell, George William,	*Tomah,*	E. E.
Bennett, Benjamin Floyd,	*Jeannette, Pa.,*	Ch. E.
Berry, Hubert Clifton,	*Plainfield,*	E. E.
Bertles, William Mathew,	*Green Bay,*	G. E.
Betts, Arthur Wilson,	*Troy, N. Y.,*	Ch. E.
Binzel, Albert Valentine,	*Milwaukee,*	C. E.
Birchard, Ralph Rogers,	*Omaha, Neb.,*	G. E.
Blake, George Barnes,	*Huron, S. D.,*	E. E.
Boardman, Clark Clinton,	*New Richmond,*	M. E.
Bockelmann, Bernhardt Jacob,	*Milwaukee,*	Ch. E.
Boley, Arthur Leland,	*Sheboygan,*	Ch. E.
Boyd, Stanley Mayo,	*Madison,*	C. E.
Brackenwagen, Earl Charles,	*Madison,*	C. E.
Buchanan, Arthur John,	*Rio,*	G. E.
Bundy, Roy Gilbert,	*Milwaukee,*	C. E.
Burgess, Kenneth Farwell,	*Oshkosh,*	C. E.
Burritt, Charles Glenn,	*Mauston,*	C. E.
Buser, John Thomas,	*Potosi,*	C. E.
Bustamante, Luis,	*Mexico City, Mex.,*	E. E.
Butler, Milton Carrol,	*Virginia, Minn.,*	C. E.
Caldwell, Leigh W.,	*Waupun,*	E. E.
Campbell, Hugh Morton,	*Madison,*	Ch. E.
Carnes, William Eugene,	*Watertown, N. Y.,*	C. E.
Cenfield, Frank Henry,	*Potosi,*	C. E.
Charles, Edward Sanford,	*Lake Geneva,*	E. E.
Coleman, Alfred Freude,	*Chippewa Falls,*	M. E.
Colladay, Edgar Bergman,	*Madison,*	E. E.
Conlin, William Henry,	*Madison.*	C. E.
Conway, Jesse Frank,	*Antigo,*	E. E.

Cook, James Knight,	*Madison,*	M. E.
Cook, Wallace Ranald,	*Marinette,*	C. E.
Cornell, Harold Edward,	*South Kaukauna,*	G. E.
Crowell, George G.,	*Almond,*	E. E.
Cutler, Joseph Albert,	*Dodgeville,*	C. E.
Dahl, Chester Theodore,	*Madison,*	C. E.
Daniells, Percy Hiram,	*Tomah,*	C. E.
Davis, Sidney Hugh,	*Des Moines, Ia.,*	G. E.
Dean, George Franklin,	*Milwaukee,*	E. E.
Dean, Harry Jennings,	*Racine,*	E. E.
Decker, David Claire,	*Oneida,*	C. E.
Derby, Frank Walter,	*Marshfield,*	E. E.
Dittmar, Winfield Jacob,	*Milwaukee,*	E. E.
Dodds, John Hutchins,	*Milwaukee,*	G. E.
Dodge, Paul Conde,	*Milwaukee,*	E. E.
Drew, Harold Winthrop,	*Milwaukee,*	G. E.
Dutton, Byron Kaye,	*Waupaca,*	C. E.
Edwards, Bruce Vincent,	*Bayonne, N. J.,*	M. E.
Edwards, Vernon Quam,	*Ashland,*	C. E.
Eldridge, Arthur Brooks,	*Indianapolis, Ind.,*	Ch. E.
Ely, Elmer Andreas,	*Mauston,*	M. E.
Engsberg, Emil Ernest,	*Lake Mills,*	E. E.
Farley, Edward Phillip,	*Madison,*	M. E.
Farnham, Frederick Foster,	*Beloit,*	Ch. E.
Fleming, Philip Bracken,	*Burlington, Ia.,*	C. E.
Fragante, Vicente,	*Vigan, Ilocos Sur, P. I.,*	C. E.
Froelich, Frank Richard,	*Glenbeulah,*	M. E.
Fuller, Clifford,	*Madison,*	M. E.
Furch, Armin Berthold,	*Milwaukee,*	M. E.
Garner, Harrison Levi,	*Lancaster,*	C. E.
Garnock, Alexander Richard,	*Tomah,*	C. E.
Geyer, Arthur Norman,	*Roswell, N. M.,*	E. E.
Glaettli, John Jr.,	*Milwaukee,*	C. E.
Gomez, Pastor,	*Calumpit, Bulacan, P. I.,*	C. E.
Griggs, Ray Leslie,	*Portage,*	Ch. E.
Griswold, Ernest Carl,	*Thomson, Ill.,*	E. E.
Haevers, William,	*Luxemburg,*	E. E.
Hale, Fred Earl,	*Madison,*	C. E.
Hall, Sidney Phillips,	*Madison,*	C. E.
Hanson, Thomas Christian,	*Manitowoc,*	E. E.
Harvey, Harold Vincent,	*Racine,*	M. E.

Haskell, Sidney Cleveland,	*Coburg, Ont., Can.,*	M. E.
Hidalgo, Marceliano,	*Binalona, Pangasinan, P. I.,*	C. E.
Hintze, Philip Henry,	*Stoughton,*	E. E.
Hitchcock, Frank Artemas,	*Edgerton,*	C. E.
Holmes, William Raymond,	*Baldwin,*	C. E.
Hope, Samuel Newton,	*Fond du Lac,*	M. E.
Houston, Gray Jones,	*San Antonio, Tex.,*	E. E.
Howard, John Gardener,	*St. Charles, Ill.,*	E. E.
Jelinek, Bohumil Joseph,	*Milwaukee,*	C. E.
Johnson, Clarence Nathan,	*Trempealeau,*	E. E.
Johnson, Glen Le Roy,	*Rockford, Ill.,*	E. E.
Johnson, Harold Holcomb,	*Belvidere, Ill.,*	C. E.
Jones, Charles Alvin,	*Burlington,*	E. E.
Kartak, Franz August,	*Oconomowoc,*	E. E.
Kerr, Henry Halleck,	*Eau Claire,*	E. E.
Kieckhefer, Alfred John,	*Milwaukee,*	M. E.
Koch, Fred Herbert,	*Milwaukee,*	C. E.
Krahn, William Otto,	*Milwaukee,*	C. E.
Kringel, August Emil,	*Wauwatosa,*	C. E.
Kruell, George John,	*Madison,*	C. E.
Kuhl, Herman Charles,	*Neillsville,*	C. E.
Kypke, Clark Henry,	*Lake Mills,*	Ch. E.
Ladd, Lester Lyle,	*Peru, Ill.,*	G. E.
Land, Stephen Weber,	*Waukesha,*	C. E.
Larson, Alfred Victor,	*River Falls,*	M. E.
Larson, Louis Martinus,	*Edgerton,*	C. E.
Lewis, Robert Dudley,	*St. Paul, Minn.,*	M. E.
Liese, Fred Richard,	*Berlin,*	C. E.
Liessmann, William Alexander,	*Reedsburg,*	C. E.
Loomer, Clayton Joseph,	*Whitewater,*	M. E.
Lowe, Charles Wesley,	*Petersburg,*	E. E.
Luedke, Arthur Louis,	*Milwaukee,*	C. E.
Lyman, Francis Joseph,	*Kenosha,*	C. E.
Macartney, Morton,	*Des Moines, Ia.,*	C. E.
Mann, Charles August,	*Milwaukee,*	Ch. E.
Manor, Eli Ross,	*Genoa Junction,*	E. E.
Marshall, James Disraeli,	*Madison,*	G. E.
Mathews, Lee Grande,	*Brandon,*	E. E.
McMillan, William Archibald,	*Milwaukee,*	M. E.
McNaughton, George Cameron,	*Wausau,*	Ch. E.
McWethy, Harold Elbert,	*Bloomer,*	E. E.

Melin, Oscar William,	*Moline, Ill.,*	C. E.
Menzies, David Archibald,	*Janesville,*	E. E.
Merrill, Pomeroy Cooper,	*Chicago, Ill.,*	C. E.
Meyers, Don Clyde,	*Abbotsford,*	E. E.
Milliren, Barton Le Roy,	*Pepin,*	M. E.
Mills, Spafford John,	*Madison,*	C. E.
Milstein, William Charles,	*Grand Rapids,*	C. E.
Minich, Walter George,	*De Pere,*	E. E.
Mitchell, Amory Raymond,	*Chicago, Ill.,*	C. E.
Moeller, Roland,	*Milwaukee,*	M. E.
Moss, Lester Maxwell,	*Sparta,*	E. E.
Mott, Charles Smith,	*Milwaukee,*	E. E.
Muckleston, Ralph Waldo,	*Waukesha,*	C. E.
Muehl, William Rex,	*Seymour,*	E. E.
Murphy, James Oliver,	*Racine,*	C. E.
Murray, Hugh Earl,	*Superior,*	M. E.
Natwick, Frank James,	*Grand Rapids,*	E. E.
Nicholson, Percival Harford,	*Baltimore, Md.,*	E. E.
Olson, Carl,	*Rhinelander,*	E. E.
Ordway, Alonzo Benton,	*Marshalltown, Ia.,*	C. E.
Orr, Lester Benson,	*Mt. Hope,*	E. E.
Pankow, Newton John,	*Madison,*	C. E.
Paris, Clarence Hiram,	*Winona, Minn.,*	C. E.
Partlow, Kenneth Lawrence,	*Shawno,*	C. E.
Pawling, Robert Alonzo,	*Milwaukee,*	G. E.
Pedley, Chester Arthur,	*Etna,*	E. E.
Petrie, Walter W.,	*Fond du Lac,*	G. E.
Post, Frank Freeman,	*Black River Falls,*	C. E.
Price, Claude Faulders,	*Madison,*	C. E.
Purdy, Donald Fargher,	*Michigan City, Ind.,*	M. E.
Rankin, Hiram Smith,	*Milwaukee,*	M. E.
Reynolds, Benjamin Smith,	*Milwaukee,*	M. E.
Richardson, Hubert Hall,	*Milwaukee,*	C. E.
Ripley, Fred Hubert,	*Oakfield,*	M. E.
Robinson, Wallace Alexander,	*Spokane, Wash.,*	C. E.
Roherty, John Ned,	*Evansville,*	C. E.
Rustone, Berlin Alwood Theodore,	*Deerfield,*	C. E.
Ruth, Verl Alton,	*Keokuk, Ia.,*	M. E.
Saubert, Walter J.,	*South Kaukauna,*	M. E.
Saxton, Ren George,	*Madison,*	C. E.
Schaefer, Henry,	*Davenport, Ia.,*	G. E.

Scherer, Andrew Charles,	*Chicago, Ill.,*	C. E.
Scheunemann, Otto Arthur,	*Turtle Lake,*	E. E.
Schuetz, Albert August,	*Milwaukee,*	G. E.
Schmidt, Alfred Charles,	*Milwaukee,*	E. E.
Schroeder, Edward Herman,	*Chippewa Falls,*	E. E.
Schwalbe, William Louis,	*Milwaukee,*	C. E.
Searles, Charles Leo,	*Brodhead,*	E. E.
Shaffer, George Barnsbach,	*Edwardsville,*	G. E.
Shea, John Richard,	*Oshkosh,*	E. E.
Sherman, Myron Wood,	*Richland Center,*	G. E.
Sherman, Walter John,	*Grand Rapids,*	E. E.
Shipek, Adolph,	*Antigo,*	E. E.
Shipley, Robert Morrill,	*Delafield,*	G. E.
Smith, Glen Edwin,	*Madison,*	E. E.
Smith, Leathem Daley,	*Sturgeon Bay,*	C. E.
Snyder, Carl Jaudon,	*Dubuque, Ia.,*	E. E.
Spence, Aubrey Dayton,	*Camp Point, Ill.,*	C. E.
Springer, Ernest John,	*Milwaukee,*	E. E.
Staber, Ernest Henry,	*Mineral Point,*	Ch. E.
Stecker, Hubert Albert,	*Madison,*	C. E.
Steinberg, Ernest Joseph,	*North Freedom,*	E. E.
St. George, Arthur Baldwin,	*Nashota,*	E. E.
Stocker, Edward Charles,	*Platteville,*	C. E.
Stocker, George Patrick,	*Platteville,*	C. E.
Stoops, Charles Warren,	*Richland Center,*	C. E.
Storer, Raymond Frederick,	*Des Moines, Ia.,*	C. E.
Storr, Frederick Montgomery,	*Malden, Mass.,*	C. E.
Strait, Albert Lea,	*Madison,*	C. E.
Sundby, George Martin,	*Milwaukee,*	C. E.
Sutherland, Ross,	*Janesville,*	Ch. E.
Swenholt, Helmer,	*Madison,*	G. E.
Teall, Thomas Tyler,	*Sparta,*	C. E.
True, James Beaman,	*Denver, Colo.,*	E. E.
Van Auken, Claude Linn,	*Madison,*	C. E.
Van Auken, Kenneth,	*Madison,*	C. E.
Van Horn, Irving Hamilton,	*Aberdeen, S. D.,*	E. E.
Van Loon, William Owen,	*Madison,*	C. E.
Walker, Edward Smith,	*Hinsdale, Ill.,*	G. E.
Walker, Robert Yule,	*Madison,*	C. E.
Webster, Harold,	*Columbus,*	C. E.
Wheeler, George Wilford,	*Plymouth,*	C. E.

Wheeler, Harvey Babcock,	*Madison,*	E. E.
Whittaker, Elmer Horace,	*Fond du Lac,*	M. E.
Wickstrom, Gustav Adolph,	*Superior,*	M. E.
Willard, Adrian Anson,	*Marshalltown, Ia.,*	E. E.
Wille, Louis William,	*Milwaukee,*	Ch. E.
Wilson, Howard Anthony,	*Spokane, Wash.,*	E. E.
Wilson, Sylvester Francis,	*Northport,*	C. E.
Witt, Louis,	*New Holstein,*	Ch. E.
Wohlrab, Aloys Hugo,	*Milwaukee,*	M. E.
Wohlrab, Sylvan William,	*Milwaukee,*	M. E.
Wolf, Albert Matthew,	*Waukesha,*	C. E.
Woods, Charles Reynolds,	*Fond du Lac,*	M. E.
Workman, Dean Miller,	*West De Pere,*	M. E.
Wright, John David,	*Baraboo,*	E. E.
Wuerth, Hubert,	*Sauk City,*	E. E.
Yager, Ralph Mark,	*Madison,*	C. E.
Yandre, Edward William,	*Johnson Creek,*	M. E.
Younggren, Russie Cornelius,	*River Falls,*	E. E.
Zabel, William Paul,	*Sharon,*	E. E.
Zehren, John Jake,	*Algoma,*	E. E.
Zeidlhack, Felix Stephen,	*Milwaukee,*	E. E.
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Freshmen

Allen, Carlton Harrison,	*Belleville.*
Allen, Claude Vilas,	*Marinette.*
Andrus, Willard Curtis,	*Madison.*
Baker, Egbert Eugene,	*Madison.*
Baldwin, Harry Sherman,	*Prophetstown, Ill.*
Barry, John Commodore,	*Muscatine, Ia.*
Barth, John Herman,	*Port Washington.*
Bates, Elbert Eric,	*Joliet, Ill.*
Batty, George Miles,	*Poynette.*
Belsky, Charles James,	*Dubuque, Ia.*
Beylia, Alfredo,	*Santiago, Chili.*
Blankenagel, Emil Carl,	*Hartford.*
Blessing, Albert Hiram,	*Fennimore.*
Bonesteel, Lloyd Gomer,	*Huron, S. D.*
Booth, Romeyn Bassett,	*Milwaukee.*
Borecky, Carl William,	*Ashland.*
Bottomley, Newton Henry,	*Burlington.*

Bray, Charles Paige,	*Oshkosh.*
Brightman, Grant Look,	*Milwaukee.*
Brumm, Wilbert Henry,	*Middleton.*
Buchen, Walter Albert,	*Sharon.*
Budd, Alfred Nelson,	*Milwaukee.*
Budd, Harry Lockwood,	*Madison.*
Bulfin, George Thomas,	*Milwaukee.*
Bull, Ernest John,	*Algoma.*
Burch, Walter Jay,	*Madison.*
Burgess, Milo Tipton,	*Mineral Point.*
Burke, Edwin Eugene,	*Waukesha.*
Burton, Franklin Dorr,	*Madison.*
Casler, Charles Earle,	*Plainfield.*
Chadwick, Arthur Benjamin, Jr.,	*Milwaukee.*
Chamberlin, George Willard,	*Whitewater.*
Cnare, Frank,	*Madison.*
Cooper, Fennimore,	*Milwaukee.*
Crumb, Kittridge Bennett,	*Rockford, Ill.*
Crusoe, Wellington George,	*Rhinelander.*
Cuno, Charles Herman, Jr.,	*Oconomowoc.*
Curtiss, Edwin Ford,	*Madison.*
Damm, Paul Emil,	*Lancaster.*
Davies, Evan Jay,	*Spring Green.*
Davies, Frederick Earl,	*Fox Lake.*
Davison, Adolph K.,	*Beaver Dam.*
Dean, Archie Tabor,	*Eau Claire.*
Decker, Ramsay Prescott,	*Madison.*
Dequine, Louis Edward,	*Fond du Lac.*
Der-Mugerditchyan, Berge Stephen,	*New York City, N. Y.*
Devine, Michael Henry,	*Algoma.*
Dietrich, Fred William,	*Randolph.*
Dittus, Edward Julius,	*Bayfield.*
Dodge, Paul Byron,	*Fort Atkinson.*
Doherty, Ralph Edmund,	*Grafton, N. D.*
Downing, Raymond Clarence,	*Watertown.*
Draves, William August,	*Milwaukee.*
Dreyer, Elmer John,	*Janesville.*
Edmund, Harvey William,	*Fond du Lac.*
Ehrke, Richard Carl,	*Wausau.*
Ellingson, Alfred George,	*Menomonie Falls.*
Falk, Gordon Sands,	*Milwaukee.*

Fenlon, Charles Edwin,	*Waukesha.*
Fisher, Charles Roswell,	*Beaver Dam.*
Foster, Harry Llewellyn,	*Milwaukee.*
Freeman, Courtney Dodge,	*Hinsdale, Ill.*
Freeman, Harold Charles,	*Racine.*
Freschl, Max Alexander,	*Milwaukee.*
Fucik, Robert Alexander,	*Williams Bay.*
Gage, Charles Henry, Jr.,	*Chicago, Ill.*
de Garay, Enrique,	*Imparcial, Tacuba, Mex*
Gayton, Robert Fischer,	*Pueblo, Colo.*
Gibbs, Earle Edwin,	*Madison.*
Gibson, Leo Edgar,	*Fort Atkinson.*
Giebel, Walter C.,	*Nelson.*
Gilliland, Carl Glenn,	*Leon.*
Gilman, Alexander Falk,	*Racine.*
Gilman, Stephen,	*Madison.*
Gingrich, Hiram Eugene,	*Rockford, Ill.*
Gleason, Edward Peck,	*Madison.*
Glick, George Abbott,	*Marshalltown, Ia.*
Godfrey, Paul Swan,	*Wauwatosa.*
Goldsmith, Floyd Reid,	*Denver, Colo.*
Goldsworthy, Lindley Crawford,	*Prescott.*
Gosling, Arthur,	*Chicago, Ill.*
Gottschall, Herbert H.,	*Madison.*
Graber, Laurence Frederick,	*Mineral Point.*
Green, Kenneth Freeman,	*Waukesha.*
Halverson, Norman Clarence,	*Manitowoc.*
Hammond, Lewis Merrick,	*Wauwatosa.*
Hettrich, Julius Caesar,	*Madison.*
Hinn, William Henry,	*Fennimore.*
Hoefer, Irving Burton,	*Freeport, Ill.*
Hoeveler, John Alexander,	*Madison.*
Holman, Henry Wallace,	*Prescott.*
Holverscheid, Robert,	*Hinsdale, Ill.*
Hood, Harl E.,	*Madison.*
Horan, Emmet, Jr.,	*Eau Claire.*
Horn, Allen Fred,	*Ashland.*
Horneffer, Fred Clarence,	*Milwaukee.*
Houlehan, Edward Shea, Jr.,	*Tomahawk.*
Humphrey, Griffith,	*Oconomowoc.*
Huntington, Edward Estabrook,	*Platteville.*

Ives, Albert Lester,	*South Madison.*
Jacobson, Carl Joseph,	*Elkhorn.*
James, Frank Evan,	*Rockland.*
John, Henry Walter,	*Schleisingerville.*
Johnson, Will Thomas,	*Superior.*
Kassler, Harry,	*Dubuque.*
Kauffman, Jacob Lorelle,	*Elkader, Ia.*
Kastler, Edward Louis,	*Racine.*
Keator, Edward Hollis,	*Moline, Ill.*
Kemp, William Bilton,	*Madison.*
Kimball, Chester Albert,	*Briggsville.*
Klinger, William August,	*Milwaukee.*
Lauderdale, Jesse Edward,	*Elkhorn.*
Leahy, Earl Frank,	*Marshfield.*
Lehmann, Herbert James,	*Madison.*
Lent, Wilmar Francis,	*Washington, D. C.*
Lidral, John Frank,	*Algoma.*
Liesenberg, Alvin Richard,	*Cedarburg.*
Livingston, Harry Sanford,	*Livingston.*
Llamado, Francisco Pascual,	*Caridad, Cavite, P. I.*
Lowell, John Wesley,	*Washington, D. C.*
Lunenschloss, Edward Joseph,	*Richland Center.*
Lyndon, Francis Alfred,	*Madison.*
Lyons, Fred Lucius,	*Waukesha.*
Madgsick, Henry Herbert,	*Burlington.*
Mahony, Francis David,	*Fond du Lac.*
Marks, Roy,	*Darlington.*
Marshall, Emory Miller,	*Des Moines, Ia.*
McConnell, Lyman Scott,	*Omaha, Neb.*
McGinty, Michael James,	*Elroy.*
McLeod, France Chandler,	*Milwaukee.*
McLeod, Robert Henry,	*Eau Claire.*
Meinicke, Alvin Edward,	*Milwaukee.*
Mills, Hugh Rogers,	*Madison.*
Moore, Mark Dunnell,	*Owatonna, Minn.*
Morse, Chester Arthur,	*Janesville.*
Muesse, Ralph Allen,	*Lancaster.*
Musser, Clive Newcomb,	*Madison.*
Murrish, William Ulysses,	*Denver, Colo.*
Nadeau, Oscar Eugene,	*Marinette.*
Nance, Archibald Whitfield,	*Monroe.*

Neeson, James Seymour,	*Port Washington.*
Nelson, Ernest Benjamin,	*Iron River.*
Nelson, Helmer Clarence,	*Madison.*
Newman, Herbert Joseph,	*Milwaukee.*
Nichol, Walter Howard Leslie,	*Marinette.*
Oakey, Samuel Frederick,	*Osceola.*
Olds, Howard Arthur,	*Milwaukee.*
Osthoff, Oscar Paul,	*Elkhart Lake.*
Palfrey, John Robert,	*Omro.*
Patitz, George John,	*Chicago, Ill.*
Pease, Spencer Adams,	*Wauwatosa.*
Pengelly, Roy Leo,	*Madison.*
Pergande, Arthur Albert,	*Cedarburg.*
Peterson, Orrie Peter,	*Wausau.*
Pierce, John Alexander,	*Elkhorn.*
Pitz, Otto Godfrey,	*Manitowoc.*
Plamondon, George Octave,	*Elkhorn.*
Ramos, Juan Manuel,	*Camaguey, Cuba.*
Rees, Reginald Leigh,	*Hinkley, Ill.*
Reif, Carl William,	*Madison.*
Reinert, Walter Julius August,	*Milwaukee.*
Reynolds, Thomas Myrick,	*Milwaukee.*
Richardson, Elwood Arthur,	*Turtle Lake.*
Richardson, Linwood Thomas,	*Turtle Lake.*
Rick, Harry Walter,	*Augusta.*
Riehmschneider, Albert,	*Milwaukee.*
Robertson, Robert Earl,	*Fort Atkinson.*
Rohde, William Charles Frederick,	*Marinette.*
Rote, Robert Lewis,	*Monroe.*
Roy, Robert Mac Gregor,	*Madison.*
Ruedebusch, Richard August,	*Mayville.*
Scarcliff, George Allen,	*Janesville.*
Schenkenberg, Bert Frederick,	*Racine.*
Schmidt, Erving Wolfgang,	*Elkader, Ia.*
Schneider, Walter George,	*Madison.*
Schulte, Walter Biersach,	*Madison.*
Schultz, Arthur Fred,	*Manitowoc.*
Schulz, Arthur Erhold,	*Madison.*
Schwarts, Adolph August,	*Brillion.*
Shaffner, George Elden,	*Joliet, Ill.*
Shapiro, Samuel,	*Marshfield.*

Sheppard, Frank Alexis,	*Fond du Lac.*
Sheward, Howard Albert,	*Whitewater.*
Shipley, George Abram,	*Montfort.*
Siefert, Paul Herman,	*Kaukauna.*
Simnicht, Florenz Aron,	*Juneau.*
Sincock, Henry Arthur,	*Virginia, Minn.*
Sjoblom, Axel Theodore,	*Grantsburg.*
Skene, Tom Davis,	*Chicago, Ill.*
Slidell, Kemper,	*Milwaukee.*
Spoor, Ivan Herbert,	*Oshkosh.*
Staehle, Paul Max,	*Manitowoc.*
Starkey, Harry Nicholl,	*Eau Claire.*
Stika, Alfred Frank,	*Kewaunee.*
Storey, Oliver Wendell,	*Milwaukee.*
Suhs, Guy Harold,	*Waupaca.*
Sumnicht, Henry Anton,	*Bonduel.*
Tanner, Harold Ford,	*Kaukauna.*
Temple, Jesse,	*St. Louis, Mo.*
Thiessen, Frank Carlton,	*Oshkosh.*
Thom, George Watt,	*Appleton.*
Thoma, Andrew,	*Milwaukee.*
Thomas, Charles Clifford,	*Sextonville.*
Thompson, Albert Theodore,	*Menomonie.*
Toole, Frank William,	*Hamilton, Mont.*
Tower, Irving,	*Evanston, Ill.*
Trane, Reuben Nicholas,	*La Crosse.*
Traxler, Henry,	*Milwaukee.*
Trewartha, John Gribble,	*Hazel Green.*
Trogner, Walter John,	*Neillsville.*
Tuttle, Alonzo Harris,	*Richland Center.*
Twining, Joseph La Verne,	*Monroe.*
Vater, Fred,	*Madison.*
Vaughan, James Robert, Jr.,	*Springfield, Mo.*
Vicain, Elbin Justinius,	*Helena, Mont.*
Vrooman, John Robert,	*Superior.*
Wagner, Karl Edward,	*Freeport, Ill.*
Waite, John Howard,	*Brooklyn.*
Watke, Richard Puls,	*Fond du Lac.*
Watson, Clarence Forbes,	*Ashland.*
Wehner, Stephen,	*Madison.*
Weidenfeller, Raymond Philip,	*Mineral Point.*

Weigen, Anders Christian,	*Sun Prairie.*
Welsh, John Thomas,	*Madison.*
Wenk, Ralph Waldo,	*Marinette.*
Wetzel, William John,	*Madison.*
Whisman, Harlan Merritt,	*Huron, S. D.*
White, Albert Ray,	*Marinette.*
Whitmore, Glen Rogers,	*Lyons.*
Wiese, Otto,	*Avoca, Ia.*
Wilder, Frank Blackman,	*Evansville.*
Wilkins, Benona Charles,	*Sharon.*
Winterbotham, Ralph William,	*Madison.*
Witt, William Henry,	*Marshfield.*
Wood, Harold Paul,	*Madison.*
Wright, Donald Bassett,	*Berlin.*
Zander, August William,	*Algoma.*
Zonne, Harold John,	*Appleton.*

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ADULT SPECIAL STUDENTS

Alberts, Oscar Bernhardt,	*Kewaunee,*	——
Andrews, Walter Cooper,	*Baraboo,*	Ch. E.
Austin, Eric Walton,	*Madison,*	E. E.
Barrows, Robert Clark,	*Kansas City, Mo.,*	——
Berssenbrugge, Bernhard,	*Rotterdam, Holland,*	E. E.
Bücher, Henry,	*Madison,*	C. E.
Burgess, Louis Green,	*Chicago, Ill.*	G. E.
Crocker, Arthur George,	*Madison,*	——
Davis, Louis Samson,	*Granton,*	——
Forbes, Russell Harriss,	*Oak, Park, Ill.,*	——
Gallup, Rockwell Loring,	*Madison,*	M. E.
Greene, Arthur N.,	*Freemont, O.,*	E. E.
Harlow, John Amerphool,	*Janesville,*	——
Hastings, Rolland Thomas Rankin,	*Evanston, Ill.,*	——
Henke, Fred Christian,	*Wautoma,*	C. E.
Heuser, Charles Godfrey,	*Milwaukee,*	——
Howard, Gerrold,	*Beloit,*	——
Hughes, John Jeremiah,	*Neillsville,*	E. E.
Iakisch, Robert,	*Granton,*	——
Johnson, Edwin Nye,	*Ashland,*	——
Johnson, Phillip Hafford,	*Appleton,*	E. E.
Jones, Charles Edward,	*Cincinnati, O.,*	C. E.
Keese, Matthew Francis,	*South Milwaukee,*	——

Koenig, Herman Henry,	*Milwaukee,*	——
Kester, Fred Henry,	*South Milwaukee,*	——
Kutschera, William Jacob,	*Milwaukee,*	*M..E.*
Lupinski, Oswald,	*Milwaukee,*	——
Martin, Andrew Henry,	*Bloomer,*	E. E.
Morton, James Duncan,	*Whitewater,*	E. E.
Nuti, Charles Bennett,	*Glen Haven,*	——
Quackenbush, Conrad John,	*Niagra Falls, N. Y.,*	——
Ryan, James Thurston,	*Wausau,*	——
Selbers, Stansmore Donald,	*Dodgeville,*	E. E.
Smart, Cyrus Francis,	*Dodgeville,*	——
Taddey, Alfred Carl,	*Milwaukee,*	——
Werner, Max Alfred,	*Milwaukee,*	——
Wray, Park Quigley,	*Chicago, Ill.*	——
Zantow, Henry Carl,	*Baraboo,*	M. E.

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COLLEGE OF LAW

Senior Class

Aylesworth, Merlin Hall,	*Fort Collins Colo.*
Bell, Harry Garfield,	*Tomah.*
Bogue, David, B. A.,	*Poynette.*
Boland, Lee,	*Decatur, Ill.*
Clark, John Bernard,	*Gratiot.*
De Camp, Frederick Ezekiel,	*Lansing, Mich.*
Dunwiddie, Stanley Gray, B. A.,	*Janesville.*
Evans, Newton William,	*Dousman.*
Fellenz, Louis John,	*Campbellsport.*
Galloway, Alvin Wilson,	*Poynette.*
Geisse, Harold Llewellyn, B. A.,	*Chilton.*
Glicksman, Harry, A. B.,	*Milwaukee.*
Grogan, Francis Wilbrod,	*Marinette.*
Hanson, Frank Harold,	*Mauston.*
Hirshberg, Henry Adler,	*Milwaukee.*
Kading, August,	*Reeseville.*
Kennedy, Robert Edward,	*Superior.*
Lorenz, Ira Sherman,	*Milwaukee.*
Lueck, Arthur William,	*Juneau.*
Mahon, Thomas Joseph, B. A.,	*Milwaukee.*
Maine, George Edwin,	*La Crosse.*
Miller, Edward William,	*Marinette.*
Mistelle, Lawrence John,	*Jefferson.*

Natwick, Oscar O.,	*Viroqua.*
Newcomb, Paul Revere,	*Pepin.*
Pfund, Carl Frederick, B. A.,	*Madison.*
Pomainville, Edward Nelson,	*Grand Rapids.*
Raymond, Elam Jewett, Jr.,	*Chippewa Falls.*
Richardson, Clarence Lemuel, B. A.,	*Chippewa Falls.*
Sanderson, Thomas Alexander,	*Sturgeon Bay.*
Sapiro, Jacob Harry,	*Milwaukee.*
Seelman, Ernest,	*Milwaukee.*
Smith, Lynn Henry,	*Jefferson.*
Snider, John Ray,	*Kilbourn.*
Timlin, William Henry, Jr.,	*Milwaukee.*
Wallace, Dorsey Edward,	*Oak Park, Ill.*
Welton, Chauncey Rex, B. A.,	*Madison.*
Wiley, Alexander, Jr.,	*Chippewa Falls.*

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MIDDLE CLASS

Baker, John Franklin, B. A.,	*Alma Center.*
Brabant, Edmund Joseph,	*Madison.*
Breidenbach, Otto Henry,	*Milwaukee.*
Bullock, William Loring, B. S.,	*Madison.*
Bunsa, George Edward,	*Palmyra.*
Calkins, Frank Waldo,	*Stevens Point.*
Conlan, Lawrence Neil,	*Milwaukee.*
Copp, Ellen Adelaide, A. M., B. D.,	*Madison.*
Cowles, Herbert Van, B. A.,	*Madison.*
Crowe, George Daniel,	*Antigo.*
Eggum, Ole J., B. A.,	*Madison.*
Fawcett, Frank Lester,	*Lancaster.*
Ferry, Robert Phillips, A. B.,	*Milwaukee.*
Foley, James Doyle, A. B.,	*Milwaukee.*
French, Charles William,	*Lake Geneva.*
Gorman, Edward Patrick,	*Wausau.*
Graham, James Blain, A. B.,	*Roberts.*
Hall, Charles Harold,	*Webster City, Ia.*
Hetzel, Ralph Dorn, B. A.,	*Madison.*
Hopson, Howard Colwell,	*Madison.*
Howitt, Harvey Mathew,	*Pewaukee.*
Hueffner, Martin Matthew, B. A.,	*Racine.*
James, Albert Earl, B. A.,	*Madison.*
Kelm, William Otto,	*Portage.*

Knoble, Fred Henry, B. S.,	*West Butte, Mont.*
McConochie, George Stewart,	*Portage.*
McDougal, Earl Loren,	*Madison.*
McGraw, William Don, B. A.,	*Chippewa Falls.*
McNally, Walter Harry,	*Madison.*
Mintner, Benjamin Daniel,	*Fond du Lac.*
Morgan, John Jeremiah, B. A.,	*Madison.*
Morter, Robert John,	*Okee.*
Mulcahy, Max John,	*Baraboo.*
Pattison, Edward Sweeney,	*Durand.*
Schmidt, Richard August, B. A.,	*W. De Pere.*
Schoetz, Maximillian, Jr., A. B.,	*Menasha.*
Smongeski, Antone Lawrence,	*Two Rivers.*
Stroud, Perry Curtis, B. A.,	*Portage.*
Thomas, Mary Ella, B. A.,	*Madison.*
Twesme, Albert Theodore, B. A.,	*Galesville.*

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JUNIOR CLASS

Affeldt, George August,	*Milwaukee.*
Atwell, William Ensign,	*Stevens Point.*
Benson, Guy Alfred,	*Racine.*
Black, Oscar McDonald,	*Madison.*
Bong, Carl Charles,	*Green Bay.*
Boyden, Allan Lester, Ph. B.,	*Mills Center.*
Brookings, Eugene,	*Tekamah, Nebr.*
Clark, Floyd Milton,	*Andrews, Nebr.*
Cook, Robert William,	*Green Bay.*
Crocker, Frank Albert, B. A.,	*Neillsville.*
Cunningham, Arthur James,	*Beloit.*
Curkeet, William Robert,	*Madison.*
Dreutzer, Carl Ebbe,	*Sturgeon Bay.*
Fitzgerald, William Lennox,	*Milwaukee.*
Galbraith, Ernest John,	*Decatur, Ill.*
Gardner, John David,	*Platteville.*
Gauerke, John Walter,	*Green Bay.*
George, Raymond Henry,	*Monticello, Ia.*
Graebner, George John,	*Milwaukee.*
Hannan, George Francis, B. A.,	*Milwaukee.*
Hill, Carl Newell,	*Spring Green.*
Johnson, James Albert, A. B.,	*Milwaukee.*

Karrow, Herman Henry,	*Milwaukee.*
Lehman, Don Raymond,	*Decatur, Ill.*
Lehner, Adolph Phillip,	*Princeton.*
McCarthy, Frank Justin,	*Stoughton.*
McLane, Arthur C., Ph. B.,	*Larimore, N. Dak.*
Miller, John Bernard,	*Lyndon Station.*
Morrissey, Maurier,	*Walworth.*
Olson, Conrad Patrick,	*Algoma.*
Pease, Clifford Coleman, B. A.,	*Madison.*
Pease, Harlow Francis, A. B.,	*Watertown.*
Pfiffner, Joseph Roe,	*Stevens Point.*
Phelps, Sumner Henry,	*Minot, N. Dak.*
Philip, Leonard Hacker,	*Polo, Ill.*
Post, Gustav John,	*Algoma.*
Prehn, Arthur William,	*Marathon.*
Rawlings, William Edward,	*Eau Claire.*
Riley, James Patrick,	*Elroy.*
Riley, Miles Charles,	*Milwaukee.*
Riley, William Patrick,	*Elroy.*
Rogers, Harlan Bethune,	*Portage.*
Sauthoff, Harry, B. A.,	*Madison.*
Shaff, John Ostrander, B. S. A.,	*Comanche, Ia.*
Shaw, Harris Fitch, Ph. B.,	*Lawrenceburg, Ind.*
Shockley, Dale Curry, B. A.,	*Lamont.*
Siebecker, Karl LaFollette,	*Madison.*
Stedman, Calvin,	*Berlin.*
Stephenson, Roy,	*Sturgeon Bay.*
Teisberg, Carl Olovus, B. A.,	*Stoughton.*
Webster, Lawrence Benjamin,	*Granton.*
Williams, Mark Levins,	*Milwaukee.*
Woodruff, Wendell,	*Mondovi.*

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STUDENTS IN OTHER COLLEGES ELECTING LAW STUDIES

Baker, John Earl, B. A.,	*Eagle.*
Bartelt, Arthur Herman, B. A.,	*Fort Atkinson.*
Bednarek, Joseph Leon,	*Beaver Dam.*
Bushnell, Alfred Hanson,	*Lancaster.*
Coe, Jerome Henry,	*Barron.*
Eder, Joseph,	*Milwaukee.*
Esch, Fred Henry,	*Manitowoc.*

Gruenwald, Arthur Herman,	*Oshkosh.*
Hall, Charles Norton,	*Madison.*
Hanten, John Henry,	*Watertown, S. D.*
Inbusch, Charles Edward,	*Milwaukee.*
Janecky, Adolph Rudolph,	*Milwaukee.*
Jedney, Eli Severn,	*Blair.*
Larson, Lewis P.,	*Whitehall.*
Niven, Robert Marcus,	*Sheridan.*
Noyes, Roy Enoch,	*Baraboo.*
Quarles, Charles Bullen,	*Milwaukee.*
Sprague, William Harvey,	*Elkhorn.*
Stark, Paul Edwin,	*Madison.*
Swenson, Henry Edward,	*Racine.*
Teisberg, Halvor Orlando,	*Cottage Grove.*
Underwood, Walter Scott,	*Milwaukee.*
Waldron, Clement Le Verne, B. A.,	*Schuyler, Nebr.*
Wiggenhorn, Ralph Guido,	*Watertown.*
Wolfe, Hubert Otto, Jr.,	*Appleton.*
Wright, Colin Wilson, Jr.,	*Monroe.*

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UNCLASSIFIED STUDENTS

Clifford, Eugene Arthur,	*Juneau.*
Collins, John,	*Hillsboro.*
Elmer, Edward Wenzel,	*Kelnerville.*
Fleck, Aloysius George,	*Freeport, Ill.*
Hannaford, Frank Howard,	*Kansasville.*
Hartley, Clarence Joseph,	*Superior.*
Timm, Walter Henry,	*Plymouth.*
Watson, John Charles,	*Livingston.*

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COLLEGE OF AGRICULTURE

LONG COURSE

Albrecht, William Jennings,	*Plymouth,*	Sophomore.
Amott, Albert Louis,	*Viroqua,*	Junior.
Bade, Elwood Louis,	*Plymouth,*	Sophomore.
Barker, Earl Slayton,	*Chippewa Falls,*	Junior.
Batty, Arthur Benjamin,	*Madison,*	Sophomore.
Bazan, Maximino Antonio,	*Cilecito, La Rioja Arg. Rep.,*	Sophomore.

Benkendorf, Gustav Henry,	*Madison,*	Junior.
Bewick, William Medhurst,	*Madison,*	Senior.
Billings, Carl Emery,	*Cobb,*	Junior.
Boerner, Arthur Richard,	*Cedarburg,*	Freshman.
Borja, Victorino L.,	*Santa Cruz, Lag., P. I.,*	Sophomore.
Brown, Adalin,	*Madison,*	Special 1.
Buchanan, Paul Hyde,	*Indianapolis, Ind.,*	Freshman.
Burch, Dallas Stockwell,	*Milwaukee,*	Junior.
Cardenas, Federico Felipe,	*Sattillo, Coah, Mex.,*	Junior.
Carey, Clinton Henry,	*Red Granite,*	Freshman.
Carpenter, Nathaniel Elliott,	*Evanston, Ill.,*	Junior.
Charles, William Mortimer,	*Madison,*	Senior.
Cooper, Ray Eli,	*Ann Arbor, Mich.,*	Junior.
Cooper, Walter Henry,	*Whitewater,*	Junior.
Cottingham, Erwin Yandell,	*Evansville, Ind.,*	Junior.
Cottingham, Rankin Dinon,	*Evansville, Ind.,*	Freshman.
Cramton, Burton Lamont,	*Madison,*	Freshman.
Crandall, William Truman,	*Milton,*	Junior.
Crane, Mary Josephine,	*Chicago, Ill.,*	Ad. Special 2.
Curtis, Joseph,	*New Lisbon,*	Sophomore.
Dacy, George Harold,	*Woodstock, Ill.,*	Freshman.
Davidson, Tom Ruston,	*Evansville, Ind.,*	Junior.
Dean, Charles Edward,	*Madison,*	Freshman.
De Haven, Lloyd Omer,	*Monroe,*	Senior.
Detjen, Louis Reinhold,	*Algoma,*	Sophomore.
Dorwin, Fred John,	*Durand,*	Sophomore.
Dow, George Litch,	*Madison,*	Ad. Special 1.
Dudgeon, Sidney Ball,	*Madison,*	Freshman.
Elleau, Augustine,	*Newark, N. J.,*	Sophomore.
Faville, Alpheus Davis,	*Lake Mills,*	Junior.
Fowler, Harry King,	*Madison,*	Senior.
Fowler, Herbert Atherton,	*Madison,*	Junior.
Gafke, Arthur Joseph,	*Oregon,*	Freshman.
Gangstad, Julius Liverine,	*Deerfield,*	Junior.
Gapen, Charles Earl,	*Monroe,*	Sophomore.
Germann, Henry Louis,	*Brackett,*	Senior.
Gesell, Robert Albert,	*Madison,*	Freshman.
Gomez, José,	*Jaro, Ilo-ilo, P. I.,*	Sophomore.
Graule, Edward John,	*Independence,*	Freshman.
Greene, Jay Irving,	*Clinton,*	Freshman.
Griffith, Leon Osee,	*Monroe,*	Senior.

Hall, Douglas,	*Ann Arbor, Mich.*,	Sophomore.
Hammer, Bernard Wernick,	*Hillsboro*,	Junior.
Hartung, William John,	*Milwaukee*,	Junior.
Hatch, Kirk Lester,	*Waterloo*,	Junior.
Haugan, John Richard,	*Chicago, Ill.*,	Ad. Special 2.
Heineck, William Edward,	*Arcadia*,	Freshman.
Hickcox, Orren Irving,	*Spring Green*,	Freshman.
Hill, George Bradbury,	*Milwaukee*,	Junior.
Hine, George Sherwood,	*Fairchild*,	Senior.
Humphreys, John Moses,	*Madison*,	Sophomore.
Ibsen, Herman Lauritz,	*Chicago, Ill.*,	Freshman.
Jalandoni, José Habana,	*Jaro, Ilo-ilo, P. I.*,	Junior.
Johnson, Albert Aaron,	*McFarland*,	Senior.
Johnson, James,	*Deerfield*,	Junior.
Jonas, Horace,	*Racine*,	Freshman.
Knight, Charles,	*Mineral Point*,	Senior.
Kolb, Roland August,	*Cleveland*,	Sophomore.
Kuhlman, Arthur Henry,	*Lowell*,	Freshman.
Lassetter, William Casper,	*Villa Rica, Ga.*,	Sophomore.
Lathrop, Alfred Tennyson,	*Madison*,	Sophomore.
Le Clair, Carl Hull,	*Green Bay*,	Freshman.
Leonard, Michael Joseph,	*Plymouth*,	Freshman.
Leverich, Edward Starr,	*Sparta*,	Sophomore.
Linde, Charles Alfred,	*Chicago, Ill.*	Ad. Special 3.
Lloyd-Jones, Orren,	*Hillside*,	Junior.
Lothe, Herbert,	*McFarland*,	Junior.
Luethge, George Casper,	*Oshkosh*,	Freshman.
Malde, Ole Gustav,	*Madison*,	Ad. Special 1.
Marken, Richard Louis,	*Valders*,	Sophomore.
Matheson, Kenneth Jesse,	*Elkhorn*,	Sophomore.
Maude, Herbert,	*Great Baddon, England*,	Freshman.
May, Charles Henry,	*Fort Atkinson*,	Freshman.
McFetridge, William Lauren,	*Oshkosh*,	Sophomore.
Messmer, John,	*Milwaukee*,	Sophomore.
Mihills, Donald Ross,	*Fond du Lac*,	Sophomore.
Milward, James Garfield,	*Madison*,	Senior.
Morris, William Earl,	*Ridgeway*,	Sophomore.
Moseley, Raymond Winthrop,	*Madison*,	Junior.
Murdock, Clayton Ross,	*Brodhead*,	Senior.
Musback, Fred Ludwig,	*Fredonia*,	Sophomore.
Nación, Pablo,	*Washington, D. C.*,	Sophomore.

Nelson, Louis,	*Eau Claire*,	Sophomore.
Nelson, Russell Solomon,	*Madison*,	Freshman.
Norris, Arthur John,	*Milwaukee*,	Senior.
Nuttelman, Alfred Lawrence,	*West Salem*,	Freshman.
Oosterhuis, Alvin Cecil,	*Sheboygan*,	Sophomore.
Page, Guy Fred, ,	*Berlin*,	Senior.
Peterson, Bennie Arthur,	*Blair*,	Ad. Special 1.
Porter, Joseph K. P.,	*Evansville*,	Sophomore.
Porter, Paul Bacon,	*Madison*,	Freshman.
Porter, William Leon,	*Fond du Lac*,	Sophomore.
Raitt, John Archibald,	*New York City, N. Y.*,	Junior.
Reinharde, Richard Franklin,	*Nelson*,	Freshman.
Richards, Morris Wilford,	*Madison*,	Sophomore.
Ridgway, Harold William,	*Madison*,	Ad. Special 1.
Robertson, James Brownlee,	*Spring Green*,	Junior.
Rodriguez, Aristides Antonio,	*Parana, Arg. Rep.*,	Freshman.
Rogers, Augustus James, Jr.,	*Milwaukee*,	Senior.
Rosenthal, Ernst,	*Madison*,	Senior.
Ruzek, Charles Flades,	*Watertown*,	Sophomore.
Ryall, Bryant Raymond,	*Augusta*,	Junior.
Schroeder, Walter Carl,	*West Bend*,	Junior.
Schwenker, Philip Frederick,	*La Crosse*,	Junior.
Scoville, Frederic Charles,	*Racine*,	Sophomore.
Selke, George Henry,	*Milwaukee*,	Sophomore.
Severson, Burns Oscar,	*Stoughton*,	Freshman.
Sevilla, Andrés Macaris,	*Palo Leyte, P. I.*,	Junior.
Showalter, Ray Peter,	*Madison*,	Junior.
Showers, Milton Walter,	*Mazomanie*,	Freshman.
Sladky, Alexander Carlton,	*Milwaukee*,	Freshman.
Smith, Arthur George,	*Blue Mounds*,	Junior.
Soriano, Oscar,	*Manila, P. I.*,	Freshman.
Steenbock, Harry,	*Madison*,	Junior.
Steinhaus, Walter Ernest,	*Madison*,	Ad. Special 3.
Stocker, Albert,	*Sauk City*,	Sophomore.
Sylvester, Walter William,	*Seymour*,	Junior.
Tallmadge, George Adams,	*Milwaukee*,	Sophomore.
Telfer, Charles Joe,	*Fort Atkinson*,	Freshman.
Theige, Karl Johnson,	*Viroqua*,	Junior.
Thompson, Albert Ludwig,	*Blair*,	Ad. Special 1.
Thompson, William Eugene,	*Somers*,	Sophomore.
Thuerwachter, Louis Henry,	*Calumetville*,	Ad. Special 1.

Tillotson, Frank Waite,	*Madison,*	Freshman.
Tormey, John Lawless,	*Fennimore,*	Senior.
Torrance, William John,	*La Crosse,*	Freshman.
Truog, Emil,	*Arcadia,*	Sophomore.
Walker, William Bohler,	*Madison,*	Senior.
Vreeland, Baxter Graff,	*Milwaukee,*	Sophomore.
Wallin, Austin,	*Madison,*	Senior.
Walster, Harlow Leslie,	*Spring Green,*	Junior.
Washburn, Edgar Bassett,	*Hinsdale, Ill.,*	Sophomore.
Weir, Wilbert Walter,	*Mukwonago,*	Junior.
Winslow, John Seymour,	*Madison,*	Freshman.
Wunsch, Richard Henry,	*Haven,*	Freshman.
Zentner, Francis Henry,	*Point Bluff,*	Sophomore.

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SHORT COURSE STUDENTS—SECOND YEAR

Akins, Clyde E.,	*Warren, Ill.*
Alcalay, Sam J.,	*Milan, Ill.*
Anderson, Thomas E.,	*Wild Rose.*
Anderson, Peter H.,	*Milwaukee.*
Austin, Wilbur Daniel,	*Janesville.*
Bandeen, William Thereon,	*Mt. Pleasant, Mich.*
Bauffleur, Philip T.,	*Viropua.*
Barnes, William Henry,	*New Lisbon.*
Bast, Paul J.,	*Rockfield.*
Bechtolt, James Daniel,	*Monroe.*
Bennett, William L.,	*New Richmond.*
Birrenkott, Michael J.,	*Klevenville.*
Blood, Ike,	*Mukwonago.*
Bryson, Donald Leroy,	*Elizabeth, Ill.*
Byerly, Edmund A.,	*Antigo.*
Cameron, Duncan Angus,	*La Crosse.*
Cass, Leonard E.,	*Viroqua.*
Chynoweth, Herbert Edgar,	*Madison.*
Christensen, Herman,	*Milltown.*
Christoph, Theo. Frank,	*Chilton.*
Clark, Clarence Scott,	*Markesan.*
Clemit, Adolph,	*Cambridge.*
Cooney, Martin,	*Corliss.*
Dean, Earl,	*Madison.*
Delwiche, Octave Joseph,	*Madison.*

Dittmar, William,	*Elizabeth, Ill.*
Downey, Urso James,	*Whitewater.*
Einfelt, Albert,	*Greenwood.*
Engleman, John,	*Galesville.*
Erickson, Ole C.,	*Detroit Harbor.*
Fisher, Clayton Eugene,	*Evansville.*
Fisher, Joseph,	*Janesville.*
Foster, Carl C.,	*Fall River.*
Fuller, Sidney Lewis,	*Milwaukee.*
Gangstad, John Otis,	*Deerfield.*
Gardner, Willis Henry,	*Solon Mills.*
Garside, Harry Rhodes,	*Cedar Grove.*
Gross, Waldo E.,	*Merrimac.*
Gueldner, William,	*Mondovi.*
Haave, Isaac P.,	*Bonduel.*
Haus, Enoch,	*Rice Lake.*
Hanzlik, David E.,	*Wonewoc.*
Harris, Jesse Seward,	*Delavan.*
Hasselquist, William,	*Wild Rose.*
Heidemann, Otto C.,	*Kiel.*
Heinke, Alvin Ernest,	*New London.*
Hicks, Earl Leroy,	*Pepin.*
Hoague, Charles Clinton,	*Janesville.*
Holman, Ray M.,	*Waupaca.*
Holman, Lee Allen,	*Waupaca.*
Houslet, Cornelius,	*Packwaukee.*
Howell, Horace Palmer	*Sparta.*
Jackey, Harvey Lewis,	*Malone.*
Jamison, Robert,	*Appleton.*
Jirtle, Geo. B.,	*Algoma.*
Jones, Augustus,	*Sparta.*
Johnson, Albert Idul,	*Bloomer.*
Johnson, Olaf Benjamin,	*Delavan.*
Kaltenberg, Anthony,	*Waunakee.*
Kneipp, William,	*Weyauwega.*
Knudsen, Harold Martin,	*Merrill.*
Krogstad, Oscar J.,	*Eau Claire.*
Krueger, Henry Edward,	*Beaver Dam.*
Larson, Elmer J.,	*Waupaca.*
Larson, Leroy James,	*Iola.*
Lean, Floyd Horton,	*Elkhorn.*

Lebeis, Frank Joseph,	*Bloomer.*
Liebzeit, Albert E.,	*Sheboygan Falls.*
Lindberg, Emil,	*Itasca Station.*
Lloyd-Jones, Scott,	*Hillside.*
Loomis, George Elijah,	*Mondovi.*
Lowry, Harry Wilson,	*Waukesha.*
Lyons, Joseph S.,	*Basco.*
Markey Walter Harry,	*Sullivan.*
Merkel, Henry,	*Appleton.*
Miller, Guy Edward,	*Markesan.*
Moergeli, Henry William,	*Washburn.*
Murkley, Heber Dewey,	*Berlin.*
Nelson, Peter Christian,	*Milltown.*
North, George,	*Madison.*
Norsman, Jerome,	*Madison.*
Oldenburg, Gustav Herman,	*Bailey's Harbor.*
Orell, Leo,	*Algoma.*
Palm, Oscar Emil,	*Washburn.*
Patterson, Roger H.,	*Durand, Ill.*
Peterson, August,	*Amery.*
Peterson, Conrad T.,	*Grantsburg.*
Peterson, Perry Oliver,	*Amherst.*
Peterson, Theodore Alven,	*Orfordville.*
Raether, Louis Jacob,	*Algoma.*
Rasmussen, Gordon Sorbye,	*Franksville.*
Riek, Anthony,	*Spring Green.*
Rorer, William Albert,	*New York, N. Y.,*
Rundell, Dale Evan,	*Livingston.*
Schiller, Claude Edwin,	*Beaver Dam.*
Schoephorster, Henry John,	*Prairie du Sac.*
Scholze, Theodore Anton,	*Sparta.*
Schroeder, Herbert F.,	*West Bend.*
Sharpe, Charles E.,	*Waldo.*
Simonson, Arthur,	*Racine.*
Smith, Delbert Carl,	*Brooklyn.*
Smith, Emrie Beach,	*Beaver Dam.*
Smithwick, Martin W.,	*Kewaunee.*
Sullivan, James Alexander,	*Grimms.*
Sullivan, James J.,	*Forestville.*
Sorenson, Albert Ellsworth,	*Osceola.*
Stratton, Joel William,	*Waupaca.*

Thackray, M. Joseph,	*Glenbeulah.*
Thompson, Thore,	*Wadena, Ia.*
Tressler, D. Ray,	*Bristol.*
Trow, Edward James,	*Oregon.*
Turner, Charles L.,	*Elkhorn.*
Volz, Robert Earnest,	*Reedsburg.*
Ward, William Rodell,	*Ft. Atkinson.*
Whitby, Arthur J.,	*Chilton.*
Whitehead, Henry W.,	*Leon.*

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SHORT COURSE STUDENTS—FIRST YEAR CLASS

Achen, William,	*Bristol.*
Ahlers, Walter,	*Grafton.*
Anderson, Milo Clarence,	*Greenwood.*
Anthony, David Chidester,	*Oregon.*
Arnold, Cliff Belmont,	*Greenwood.*
Baker, Dwight,	*Blanchardville.*
Barenz, Henry O.,	*Jackson.*
Barton, Otto Melvin,	*Mt. Horeb.*
Baskerville, De Witt Dudgeon,	*Madison.*
Basse, William Henry,	*Milwaukee.*
Bennett, Emory C.,	*Grand Rapids.*
Bennett J. Harrie,	*Mineral Point.*
Berger, John H.,	*Oshkosh.*
Bestul, Otto O.,	*Scandinavia.*
Beyer, Herman H. C.,	*Peebles.*
Bigelow, Raymond David,	*Ashland.*
Blodgett, Gordon Richard,	*Neenah.*
Blotz, Elmer,	*Dodgeville.*
Bohl, Joseph Nicholas,	*Beaver Dam.*
Boll, John C.,	*Sheboygan Falls.*
Booth, Guy Albert,	*Cuba City.*
Boucsein, Ernie Fred,	*Detroit Harbor.*
Bradley, Joseph Frank,	*Somers.*
Bremer, Paul Henry,	*Milwaukee.*
Bristol, William Arthur,	*Oakfield.*
Brunn, John Fred,	*Mishicott.*
Buss, William George,	*Mineral Point.*
Bussewitz, Orla,	*Juneau.*
Callicutt, Harry Van,	*Mineral Point.*
Caygill, Fred Medcalf,	*Linden.*

Cherveny, Wenzel,	*Kewaunee.*
Christensen, Peter Waldmann,	*Marshfield.*
Church, Arthur Potter,	*Whitewater.*
Clark, Francis Orville,	*Berea, Ky.*
Coldwell, John,	*Blue Mounds.*
Cook, Giles Ray,	*Wautoma.*
Cooke, Carl Herbert,	*Independence.*
Coon, Leslie Emmett,	*Osseo.*
Cross, Ray Huntington,	*Davis, Ill.*
Curtis, Charles Ray,	*Poynette.*
Dalton, Roy,	*Pardeeville.*
Day, James Morton,	*Oakfield.*
Dean, Robert,	*Eleva.*
Dennerlein, Arthur C.,	*Plymouth.*
Digman, Fred Herman,	*Wauwatosa.*
Divall, Harry,	*Montford.*
Dopp, Walter H.,	*Wild Rose.*
Duerkop, Ernst John,	*Cream.*
Dunbar, Harold,	*River Falls.*
Empey, George Albert,	*Dorchester.*
Engel, Philip,	*Luxemburg.*
Erickson, Louis Edmund,	*Kewaunee.*
Ernst, John A.,	*Milwaukee.*
Fagan, Maurice J. M.,	*Milwaukee.*
Farwell, Roy Rundell,	*Ridgeway.*
Finstad, Jalmer,	*Bloomer.*
Fisher, Clarence J	*Omro.*
Flanery, William Lazarus,	*Berea, Ky.*
Foley, Robert,	*Wauwatosa.*
Foster, Julius Woodfin,	*Osborn, Georgia.*
Frederickson, Fred,	*Spring Green.*
Fruit, Bert Lawrence,	*Platteville.*
Gallagher, Frank,	*Reedsburg.*
Gelbach, Parke Roesch,	*Lancaster.*
Goodrow, Frank,	*Whitewater.*
Gordon, Archie Lee,	*Mineral Point.*
Grove, Christian,	*Columbus.*
Grover, A. G. L.,	*Milwaukee.*
Haines, Joseph Kaighm,	*Mt. Ephraim, N. J.*
Hamann, Edgar C.,	*Sheboygan.*
Halloway, John William,	*Union Grove.*

Hansen, Hans,	*Lake Mills.*
Hansen, Helmer C.,	*Scandinavia.*
Hanson, Elmer James,	*Waupaca.*
Hanson, Ole Christian,	*Detroit Harbor.*
Harris, William Morgan,	*Madison.*
Hass, Reinhold Adam,	*La Crosse.*
Haverly, Harry Leslie,	*Victory.*
Hemker, Fritz F.,	*La Crosse.*
Hemker, Fritz H.,	*West Salem.*
Hessel, Louis,	*Manitowoc.*
Hirsch, Brynjolf,	*Washburn.*
Hoard, Glenn,	*Milton.*
Holmes, Arthur A.,	*Whitewater.*
Howard, George Amos,	*Ft. Atkinson.*
Hustad, Martin C. T.,	*Modena.*
Jacklin, Ben Henry,	*Red Granite.*
Jacklin, Harley Milvern,	*Red Granite.*
Jacky, Gilbert,	*Malone.*
Jacobson, Fred E.,	*Oconomowoc.*
Jacot, Oscar Scott,	*Eleva.*
James, Will E.,	*Montford.*
Jante, Henry H.,	*Milwaukee.*
Jelle, Norman,	*Mt. Hroeb.*
Jens, Otto A.,	*Waukesha.*
Jessup, Curtis I.,	*Edgerton.*
Johnson, George,	*Cataract.*
Joice, George Edward,	*Waterloo.*
Jones, Owen R. Jr.,	*Beaver Dam.*
Jungbluth, William John,	*Milwaukee.*
Keeney, Emerson Ralph,	*Rockton.*
Klann, Adolph E.,	*Hayton.*
Klofanda, Reuben,	*Racine.*
Kneser, John Henry,	*Milwaukee.*
Knoke, Edward August,	*Shiocton.*
Kircher, Herbert William,	*Chilton.*
Kirchman, John August,	*Algoma.*
Kramer, John, Jr.,	*Montfort.*
Kronhohn, Victor Emanuel,	*Grand Rapids.*
Kruse, William,	*Whitewater.*
Kurtze, Otto Charles Wm.,	*West Allis.*
LeGresley, Norris Walter,	*Jersey, Channel Island.*

Leonard, Michael Joseph,	*Plymouth.*
Lewerenz, Roy Blass,	*Tomahawk.*
Lord, Albert Clark,	*Madison.*
Lloyd-Jones, Charles,	*Hillside.*
Lund, Edwin,	*Bloomer.*
Maug, Arthur John,	*Ripon.*
Marston, Albert Ellis,	*Beloit.*
Mathis, Adolph Joseph,	*Lansing, Ia.*
McCammon, Charles Dalton,	*New Millford, Ill.*
Merwin, Ernest Leslie,	*Walworth.*
Meyer, John,	*Madison.*
Michels, Henry,	*Malone.*
Michels, Mathias,	*Madison.*
Miller, Theodore,	*Greenwood.*
Moen, Gilbert T.,	*Eleva.*
Moen, Herman Cornelius,	*Cambridge.*
Monroe, Sldney Ferris,	*Rosendale.*
Montague, Chester Richard,	*Lake Mills.*
Moore, Harry,	*McFarland.*
Muth, Egbert,	*Sheboygan.*
Nelson, Edwin,	*Viroqua.*
Nelson, Martin,	*Milton.*
Nicholls, Harry George,	*Stoughton.*
Noyce, Joseph Elmer,	*Oregon.*
Nyre, Lawrence A.,	*Gilmanton.*
Oliver, James Henry,	*Galesville.*
Olson, Paul Edward,	*Athens.*
Osborne, John Fairfield,	*Linden.*
Parsch, Gustav Adolph,	*Stoddard.*
Patterson, Joseph Medill,	*Chicago, Ill.*
Paulson, Hilbert,	*Hollandale.*
Peck, Spalding,	*Oconomowoc.*
Pederson, Peter,	*Eleva.*
Peik, Arthur,	*Chilton.*
Peik, Edmund Henry,	*Chilton.*
Peter, William Keith,	*Dunnoltar, Castries, West Indies.*
Peterka, Joseph,	*Racine.*
Peterson, Arna J.,	*Bristol.*
Peterson, William,	*Curtiss.*
Phillips, Arthur John,	*Stoughton.*
Pinkerton, Altai J.,	*Waupaca.*

Port, Mike,	*Grafton.*
Potter, Guy N.,	*Grand Rapids.*
Pritchard, John T.,	*Waukesha.*
Raymer, Ethel Frances,	*Madison.*
Reynolds, Sidney Francis,	*Jacksonport.*
Roberts, Thomas John,	*Waukesha.*
Runde, Martin Clarence,	*Hazel Green.*
Rundell, Joseph Earl,	*Livingston.*
Rundell, Wilbur Mansfield,	*Livingston.*
Ruskell, Louis Emmett,	*Belmont.*
Schaefer, Henry G. C.,	*Plymouth.*
Scheid, Byron John,	*Bay City.*
Schmit, Alois Ervin,	*Hortonville.*
Schmit, Aloysius Wenzel,	*Appleton.*
Schlapmann, Fred William,	*North Milwaukee.*
Schroeder, Herman F.,	*Milwaukee.*
Schulte, William Leo,	*Garnavillo, Ia.*
Schultz, Edward William,	*Brownsville.*
Schultz, Walter William,	*Neillsville.*
Scribner, Herbert Ronald,	*Rosendale.*
Sharpee, Johanes, A.,	*Rio.*
Shaw, Harold Tice,	*Mt. Morris, Ill.*
Short, Robert,	*Beloit.*
Sievers, George,	*North Milwaukee.*
Skeflo, Paul,	*Madison.*
Smith, John Francis,	*Darlington.*
Solverson, Peter Oscar,	*Viroqua.*
Spaulding, Leslie Coalman,	*Mondovi.*
Stamm, George Adolph,	*Modena.*
Stephan, Charles,	*Racine.*
Stevenson, Carl,	*Soldiers Grove.*
Strowig, William A.,	*Cleveland.*
Tenny, Horatio Augustus,	*Calamine.*
Thomas, Roy Ed.,	*Black River Falls.*
Thompson, Adolph,	*Dodgeville.*
Thulin, Edward,	*Hayward.*
Tibbets, Chauncey,	*Madison.*
Tice, Ray,	*Red Granite.*
Tichenor, Myron Hawley, Jr.,	*Oconomowoc.*
Tomhagen, John Andrew,	*Chicago, Ill.*
Torgerson, Benjamin Sam,	*Cottage Grove.*

Usher, Earl,	*South Wayne.*
Vaughn, Dale W.,	*Whitewater.*
Vosberg, Bernard Jos.,	*Sinsinawa Mound.*
Vosberg, Henry Leo,	*Louisberg.*
Wall, Floyd,	*Weyauwega.*
Werthwein, Percy C.,	*Lake Mills.*
Wesson, Edwin A.,	*Richmond.*
White, Glenn,	*La Crosse.*
Whitnall, Harold Edgar,	*Milwaukee.*
Wichern, Carl W.,	*Baraboo.*
Wick, William Frederick,	*Mauston.*
Wilhelmson, Hartwick Barnard,	*Ixonia.*
Williams, Orson P.,	*Waukesha.*
Winge, William Alfred,	*Wild Rose.*
Wold, Oscar Benjamin,	*Eleva.*
Wulff, Fred, Jr.,	*Grafton.*
Wyatt, Ray Lute,	*Tomah.*

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DAIRY SCHOOL CLASS

Akagi, Yutaki,	*Bingo, Japan.*
Andrus, Thomas Hugh,	*Humbird.*
Baehler, Albert Carl,	*Seymour.*
Barclay, Edward,	*Viola.*
Bartelt, John August,	*Allenton.*
Bartlelt, Otto Christian,	*Allenton.*
Bartz, Alfred William,	*Granton.*
Blahnik, Anton Joe,	*Algoma.*
Boeing, Emil George,	*Vernon Center, Minn.*
Brey, Adam George,	*Algoma.*
Carter, Loyal David,	*Sabin.*
Carow, Herman August,	*Star Prairie.*
Cejka, Edward,	*Antigo.*
Cherney, Joseph Wencil,	*Milladore.*
Conard, Louis,	*Brussels.*
Court, Charles Robert,	*Seymour.*
Cooley, Russell Sylvester,	*Ferryville.*
Crosman, Ira Delton,	*Lake Mills.*
Crooks, Clayton Frank,	*Abrams.*
Cuthbert, Fred Bruce,	*Barron.*
Dahl, Oscar Anton,	*Ogema.*
Davis, John Alfred,	*Excelsior.*

Deprez, Jule J., ,	*Luxembourg.*
Dew, John Edder,	*Oconomowoc.*
Dobbie, George Staple,	*Guelph, Ontario, Can.*
Ebert, Lorenz Christopher,	*Algoma.*
Emmer, Killian Peter,	*Kewaskum.*
Entringer, Daniel,	*St. Cloud.*
Entringer, Joseph Walter,	*Algoma.*
Fetting, Edwin Charles,	*Alma.*
Fischer, John Rudolph,	*Mishicott.*
Fischer, Ernest Henry,	*Sheboygan Falls.*
Fischer, Robert Felix,	*Waterloo.*
Foerster, Charlie Edward,	*La Valle.*
Frank, John Lewis,	*Freeport, Ill.*
Fries, Anton,	*Glidden.*
Garlie, Nick,	*Beldenville.*
Gerlach, William J.,	*Marshfield.*
Gerondale, Joseph Julian,	*Abrams.*
Goetschel, Samuel Edwin,	*Cleveland.*
Griep, Otto,	*Horicon.*
Guardia, Hernan de la,	*Panama, Panama.*
Haffemann, Frank William,	*Naugart.*
Hanson, Hans K.,	*Mondovi.*
Hanson, Leoni Waldemar,	*Seattle, Wash.*
Hargraves, Otis,	*Corinth.*
Heilmann, Fred,	*Sawyer.*
Hinrichs, Arnold Carl,	*Hamburg.*
Holschback, Ernest Otto,	*Manitowoc.*
Hophan, John Nick,	*Plum City.*
Hostak, Eddie,	*Kellnersville.*
Hurst, Wesley Robinson,	*Augusta.*
Jackson, Allard Earl,	*Eleva.*
Jacobson, Thomas,	*Colfax.*
Johnson, Charles,	*Wild Rose.*
Johnson, Edgar,	*Pine River.*
Jones, George Elmer,	*Amery.*
Jost, Edward R.,	*Westfield.*
Kadlec, Frank Anton,	*Oconto.*
Kelly, Shearod Montague,	*Quinscy.*
Klessig, August Adolph,	*Cleveland.*
Knickerbocker, Joseph,	*Wyoming.*
Kofahl, Thomas Wilhelm,	*Christiana, Norway.*

Kramer, Walter Jackson,	*Chilton.*
Kresse, Fred,	*Allenville.*
Kuehl, William Martin,	*Kewaunee.*
Kuschel, Herman Julius,	*Manawa.*
Lanyi, Oscar Von,	*Woodman.*
Lecheler, Paul Joseph,	*Elmwood.*
Le Mere, Stephen George,	*Green Bay.*
Leeseberg, Ralph William,	*Milwaukee.*
Limp, Conrad August,	*Wilton.*
Limp, Walter Theodore,	*Wilton.*
Loewenhagen, Otto Wm. August,	*Alma.*
Lopez, Rodolfo Bibiano,	*Coronda, Arg. Rep.*
Lorenz, Emil John,	*Manitowoc.*
Lucia, Floyde Burness,	*Flintville.*
Luebke, Arthur Charles,	*Valders.*
Maedke, Walter Emil,	*Algoma.*
Marten, Emil Bernhard,	*Spencer.*
Martin, Moses,	*Brussels.*
Martin, William Herman,	*Sams.*
Meinke, Herman William,	*Ripon.*
Mendez, Arnulfo Epitacio,	*Opam, Hidalgo, Mex.*
Miller, Walter Charles,	*Manawa.*
Miller, Theodore Otto,	*Alma.*
Miller, John Herman,	*Markesan.*
Moenning, Gustav Carl,	*Sheboygan.*
Monday, Ernest John,	*Granton.*
Mossing, Marcus Norman,	*Beldenville.*
Mueller, Alfred,	*Monroe.*
Mueller, Anton John,	*Hayton.*
Noll, Anton Louis,	*Alma.*
O'Brien, James Patrick,	*Boscobel.*
Paulson, Oscar Iver,	*Grantsburg.*
Pechman, Herman Ray,	*Luxembourg.*
Peroutky, Albert Laphol,	*Algoma.*
Poehle, Richard August,	*Algoma.*
Polzin, William Earnest,	*Watertown.*
Posselt, Knute,	*Stockton, Minn.*
Possley, Nick E.,	*New Holstein.*
Prausa, Frank Adalbert,	*Milladore.*
Princel, Edward Rudolph,	*Mishicott.*
Raven, Herman Case,	*Bloomer.*

Rentz, Henry Norman,	*Westby.*	
Rich, Homer Barr,	*Oshkosh.*	
Ripley, Emil Wencil,	*Kewaunee.*	
Roberts, Charles Wilbur,	*Guilford, Mo.*	
Roepke, William Gustav,	*Woodville.*	
Rogers, Edgar Merrill,	*Eau Claire.*	
Rollay, Austin K.,	*Wheeler.*	
Russell, Fred,	*Endeavor.*	
Saugen, Alfred Oscar,	*Eleva.*	
Schils, George,	*Cedar Grove.*	
Schmelzer, Adam Jacob,	*Avoca.*	
Schmoll, Gust Jule,	*Manawa.*	
Schwandt, Paul George,	*Beaver Dam.*	
Schwartz, August,	*Shawno.*	
Severson, Martin,	*Dodge.*	
Siggelkow, Ernest August,	*Cleveland.*	
Simon, John Joseph,	*Whitelaw.*	
Singula, Frank Joseph,	*Arena.*	
Sipsma, Jacob Lammerts,	*Zenda.*	
Somsen, William,	*Baldwin.*	
Storm, Edward Carl,	*Merrill.*	
Swenson, Arthur Swen,	*Racine.*	
Tank, Conrad Carl,	*Berlin.*	
Thiede, Arthur Reinhold,	*Abrams.*	
Thym, Alfred Ernest,	*Markesan.*	
Timm, Theophil,	*Menomonie.*	
Tschan, Hans Albert,	*Oconomowoc.*	
Tullock, George Albert,	*Rockford, Ill.*	
Tuttle, John Herman	*Wausau.*	
Vergin, Percy Willard,	*Poysippi.*	
Wagner, Jacob,	*Fond du Lac.*	
Walsh, John Joseph,	*No. Kaukauna.*	
Ward, John Christopher,	*Ft. Atkinson.*	
Weinfurther, Harry Henry,	*Mishicott.*	
Wiersig, Walter Ernest,	*Colby.*	
Wilhelm, Albert Joseph,	*Grimms.*	
Wolf, Edward Fred,	*Edgar.*	
Wuerth, Valentine Claude,	*Sauk City.*	
Yankee, Charles Albert,	*Granton.*	
Zietlow, William August,	*Marion.*	
Zumkehr, Peter,	*Monroe.*	—145

SUMMER SESSION OF 1906

GRADUATES

Ackermann, Adolf, *New Ulm, Minn.*
B. A., Martin Luther College, German.

Alderson, Persis Hurd, *Fayette, Ia.*
Ph. M., Northwestern University, History.

Atwood, Walter Myron, *Madison.*
B. A., University of Wisconsin, English, History.

Aylsworth, Leon Emmons, *Lincoln, Neb.*
B. A., University of Nebraska, Political Science.

Bactjer, Walter Albert, *Baltimore, Md.*
B. A., Johns Hopkins University, Anatomy.

Barber, Lena Amelia, *Toledo, O.*
B. A., University of Michigan, Botany, Zoology.

Barnet, Montrose Lenier, *Beloit.*
B. A., Beloit College, Chemistry, Physics.

Bates, Frank Greene, *Alfred, N. Y.*
Ph. D., Columbia University, History.

Bennett, Archibald Synica, *Weyauwega.*
B. S., Lawrence University, Mathematics.

Blackman, Elma Mary, *Kalamazoo, Mich.*
B. L., University of Michigan, History.

Borgers, William Benjamin, *Madison.*
B. A., University of Wisconsin, Physics.

Brindley, John Edwin, *Soldiers Grove.*
B. L., University of Wisconsin, History, Political Economy.

Brohough, George, *Red Wing, Minn.*
B. L., University of Minnesota, Political Economy.

Buckeridge, Daisy Marie, *Beloit.*
B. A., Beloit College, Latin.

Burrows, Montrose Thomas, *Halsted, Kan.*
B. A., University of Kansas, Anatomy.

Bustamante, Dolfin Sanchez, *Jupuy, Arg. Rep.*
B. S. A., Toronto University, Botany, Political Economy.

Cance, Alexander Edmond, *Shiocton.*
B. A., Macalaster College, Political Economy.

Carr, Ralph Howard, *Storm Lake, Ia.*
B. L., University of Wooster, Chemistry, Physics.

Chambers, Charles Oscar, *Georgetown, Ky.*
M. A., Indiana University, Anatomy, Botany.

Cole, Adrian H., *Rio.*
Ph. B., University of Wisconsin, Philosophy.

Cole, Jessie Martha, *Plymouth.*
B. L., University of Wisconsin, Latin.

Crawford, Clarence Cory,	*Drexel, Mo.*
M. A., University of Missouri,	History.
Davis, Thomas Rich,	*Dollar Bay, Mich.*
B. A., Olivet College,	Chemistry, Education.
Davis, William Lloyd,	*Madison.*
Ph. B., University of Wisconsin,	
Decker, Paul Herman,	*La Moille, Ill.*
B. A., Wartburg College,	German.
Deibler, Frederick Shipp,	*Evanston, Ill.*
M. A., Harvard University,	German, Political Economy.
Deihl, Joseph Dwight,	*Eureka, Ill.*
B. A., Eureka College,	German.
Delap, Darwin,	*Kansas City, Mo.*
B. A., University of Wisconsin,	Anatomy.
Dodge, Florence Adele,	*Windsor.*
B. A., University of Wisconsin,	English, German, Latin.
Dopp, Mary,	*Oconomowoc.*
B. S., University of Wisconsin,	Anatomy, Botany, Chemistry.
Elwood, De Witt,	*Charleston, Ill.*
B. S., Lawrence University,	History, Philosophy.
Emery, William Thomas,	*La Crosse.*
B. L., Beloit College,	Chemistry, Physics.
England, Minnie Throop,	*Lincoln, Neb.*
Ph. D., University of Nebraska,	Political Economy.
Ernst, Adolphine Bianca,	*Milwaukee.*
B. L., University of Wisconsin,	German.
Faust, Howard Harry,	*Merrill.*
B. A., University of Wisconsin,	Education, Physics, Manual Training.
Fereubaugh, Thomas Ludlow,	*Howard, O.*
B. A., Kenyon College,	Anatomy.
Fish, Florence,	*Berlin Heights, O.*
B. L., University of Wisconsin,	Education, English.
Gates, Charles Baldwin,	*Milwaukee.*
Ph. M., University of Wisconsin,	Chemistry.
Gillett, Arthur Dudley Samuel,	*Superior.*
B. L., University of Wisconsin,	Political Economy.
Goad, Caroline,	*Toronto, Can.*
M. A., Trinity University,	German, Philosophy.
Griffin, James Sheldon,	*Grand Rapids, Mich.*
B. A., Eureka College,	German, Romance Languages.
Grossman, August,	*Cleveland, O.*
B. A., Harvard University,	Chemistry, Mathematics, Physics.
Haertel, Martin Henry,	*Madison.*
Ph. B., University of Chicago,	German.

Haisley, Otto Webster, *Fairmount, Ind.*
B. A., Earlham College, Mathematics, Physical Training.

Hall, Edgar Albert, *Madison.*
B. A., University of Wisconsin, English, History.

Haney, Lewis Henry, *Iowa City, Ia.*
M. A., Dartmouth College, History, Political Economy.

Hendrickson, Ira R., *Mt. Morris, Ill.*
Ph. B., DePauw University, History.

Hermann, Flora Belle, *West Allis.*
B. A., University of Chicago, Botany, English, Physical Geography.

Hess, Ralph Henry, *Madison.*
M. S., Colorado College of Agriculture, History.

Holty, Edward Olaf, *Cedarburg.*
B. L., University of Wisconsin, Political Economy.

Hooper, Frances Powell, *Columbus, Miss.*
B. S., University of Mississippi, History.

Hospes, Cecilia, *St. Louis, Mo.*
M. A., Washington University, German.

Hunt, Caroline Louisa, *Evanston, Ill.*
B. A., Northwestern University,

Jacobsen, Karl Theodore, *Stoughton.*
B. A., Luther College,

Jahr, Marvin Edward, *Neillsville.*
B. A., University of Wisconsin, Mathematics, Anatomy, Physical Geography.

Jamieson, Elva Luella, *Portage.*
B. S., Beloit College, Chemistry, Physics, Zoology.

Janes, Harry Lorenzo, *Racine.*
M. L., University of Wisconsin,

Jefferson, Lorian Pamelia, *Baraboo.*
B. L., Lawrence University, History.

Jones, Edward Richard, *Bangor.*
B. S. A., University of Wisconsin, Soils.

Jones, Gwendolyn Gaynor, *Madison.*
B. A., University of Wisconsin, English, German.

Karnopp, Charles Frederick, *Almond.*
B. A., Lawrence University, Philosophy, Political Economy.

Klotz, Ralph Quad, *Glidden.*
B. S., Valparaiso University, Physics, Manual Training.

Kunerth, William, *La Crosse.*
B. A., University of Wisconsin, Chemistry.

Lisor, Margaret Elizabeth, *Montezuma, Ia.*
Ph. B., Iowa College, German, Latin, Romance Languages.

Lorenz, Charlotte Marie, *Fort Dodge, Ia.*
M. A., State University of Iowa, German.

Lough, Mattie Elizabeth, *Austin, Ill.*
B. A., DePauw University, Mathematics, Drawing.
Lymer, John Charles, *Appleton.*
M. A., Northwestern University, Mathematics.
Marshall, Josephine Paige, *Madison.*
B. A., St. Mary's College, Political Economy.
Martens, Henry Christoph, *Fon du Lac.*
B. A., University of isconsin, German.
McCulloch, Saide Lillian, *Madison.*
B. A., University of Wisconsin, Education.
McKelvy, Ernest Christian, *Upper Sandusky, O.*
B. A., Western Reserve University, Chemistry, German.
Merrill, Agnes, *Ashland.*
B. A., University of Wisconsin, English, German, Latin.
Morse, Jessie Marietta, *Madison.*
B. A., University of Wisconsin, Physical Geography.
Murray, Florence Melissa, *Evanston, Ill.*
B. A., Greenville College, Physical Geography, Physics.
Mutchler, Kate, *Madison.*
B. A., University of Wisconsin, Botany, English, History, Rhetoric.
Naughtin, Patricia Louise, *South Omaha, Neb.*
B. S., University of Nebraska, Physics, Political Economy.
Newport, Clara Price, *Swarthmore, Pa.*
B. A., Swarthmore College, German, Rhetoric.
Norton, Mary Burr, *Mt. Vernon, Ia.*
M. A., Cornell College, Mathematics.
Noyes, Elizabeth Browning, *Oshkosh.*
M. L., Northwestern University, History.
Otterson, Andrew, *Madison.*
Ph. B., Beloit College, Mathematics.
Pearsall, Phebe Lorena, *Port Byron, Ill.*
B. S., Beloit College, Botany.
Peters, Susie Marie, *Milwaukee.*
B. A., University of Wisconsin, English, History, Manual Training.
Phelan, Raymond Vincent, *Cleveland, O.*
M. A., Western Reserve University, History.
Phelps, Clarence Lewis, *Aurora, Ill.*
M. A., Dartmouth College, Education, History, Rhetoric.
Pray, Katherine Rebecca, *Stevens Point.*
B. A., University of Wisconsin, German.
Pugsley, Anna Martin, *Chambersburg, Pa.*
B. A., Cornell University, History.
Purcell, John Daniel, *Waterloo.*
M. A., University of Wisconsin, Chemistry.

Ray, George Rankin, *Waukesha.*
B. A., University of Wisconsin, English, History, Political Economy.

Ray, Richard Johnson, *La Crosse.*
B. A., Amherst College, Political Science.

Rastall, Benjamin McKie, *Madison.*
M. A., Colorado College,

Reiss, Wallace, *Milwaukee.*
B. A., University of Wisconsin, Latin.

Roycroft, India Ellice, *Shawno.*
B. A., Milton College, German, History, Latin.

Russell, Harry Union, *West Derry, N. H.*
B. S., New Hampshire State College, History, Political Science.

Sanborn, Esther Lakin, *Boston, Mass.*
B. A., University of Michigan, English, Physical Geography, Political Economy.

Schaeuble, Sophia Marie, *Hamilton, O.*
B. A., Miami University, German.

Schafer, Joseph, *Eugene, Ore.*
M. L., University of Wisconsin, History.

Schoff, Amy Lawrence, *Cincinnati, O.*
B. L., University of Cincinnati, German.

Sharon, John Albertus, *Paris, Ky.*
Ph. B., State College of Kentucky, Physics, Romance Languages

Sharpe, Theodore Thomas, *Toronto, Can.*
Ph. B, Missouri Wesleyan University, Political Economy, Rhetoric.

Shi, Berner Leigh, *Forsyth, Ga.*
B. S. C. E., Alabama Polytechnic Institute, Mathematics, Manual Training.

Shinn, Frederick Lafayette, *Madison.*
M. A., Indiana University, Chemistry.

Sonleitner, Elizabeth Angeline, *Sheboygan.*
B. S., Dixon College, German.

Spaulding, Grace Pratt, *Edgerton.*
B. A., Milton College, History, Latin.

Spence, Bartholomew John, *Chicago, Ill.*
B. S., Northwestern University,

Steele, Harold, *South Haven, Mich.*
B. S., Albion College, Education.

Steuber, Frederick John, *St. Louis, Mo.*
Ph. B., University of Wisconsin, German.

Stevenson, Lillian Gurine, *Tacoma, Wash.*
B. A., Whitworth College, Anatomy, German.

Stoll, Charles Augustus, *Greenville, Ill.*
Ph. B., Greenville College, History.

Struggles, Eva, Ph. B. Northwestern University,	*Winnetka, Ill.* English, History, Latin.
Sullivan, Ellen Theresa, B. A., Cornell University,	*Watertown.* Anatomy, Botany, Hygiene.
Suter, Jesse Dwight, B. A., University of Wisconsin,	*Madison.* Mathematics.
Tarnutzer, Andrew David, B. S., University of Wisconsin,	*Sheboygan.* Anatomy, English, History.
Thomason, John Furman, B. A., Furnam University,	*North Augusta, S. C.* Education, History.
Titsworth, Paul Emerson, Ph. B. Alfred University,	*Alfred, N. Y.* German, Romance Languages.
Torrey, Julia Maria, B. A., Boston University,	*Cleveland, O.* Anatomy.
Urban, William, B. S., University of Wisconsin,	*Menomonie.* Anatomy, Botany, Hygiene.
Uttendorf, William Elmer, B. S., University of Wisconsin,	*Prairie du Chien.* Botany, German.
Virtue, George Olien, B. A., Harvard University,	*Winona, Minn.* History, Political Science.
Walker, Ellis Janet, Ph.. B., University of Wisconsin,	*Fond du Lac.* English, Education.
Walton, Duncan Cameron, B. A., St. Johns College,	*Annapolis, Md.*
Weinzirl, John, M. S., University of Wisconsin,	*Albuquerque, N. M.* Bacteriology, Chemistry, Hygiene.
Westcott, James Aaron, B. A., Hillsdale College,	*North Adams, Mich.* Botany, Physical Geography, Physical Training.
Westermann, William Linn, B. A., University of Nebraska,	*Minneapolis, Minn.* History, Political Economy.
Wetzel, Reinhard August, B. S., University of Minnesota,	*Madison.* Mathematics.
Whealdon, Albert D., B. A., University of Missouri,	*Superior.* Chemistry, German.
White, Marion Ballantyne, Ph. B., University of Michigan,	*Champaign, Ill.* Mathematics.
White, Melvin Johnson, B. S., New Hampshire College,	*Plymouth, N. H.* Education, History.
Wichmann, Hugo John, B. A., University of Wisconsin,	*New Holstein.* Chemistry.
Wicks, Willa Montgomery, B. A., Colege of Emporia,	*Helena, Mont.* Mathematics.
Wieland, Otto Ernst, B. A., University of Chicago,	*La Crosse.* German.

Wonders, Wallace Kirtland,	*Detroit, Mich.*
B. A., University of Michigan,	Political Economy.
Worthington, Joseph Kent,	*Baltimore, Md.*
B. A., Haverford College,	Anatomy.
Yosisaka, Heikichi,	*Kobe, Japan.*
M. A., Indiana University,	German, Rhetoric.
Young, Charles Edmund,	*Milwaukee.*
B. A., Harvard University,	

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UNDERGRADUATES AND TEACHERS

Allen, Herman Joe,	*Belleville.*
Ames, Jesse Hazen,	*Hayward.*
Ames, Merl McMain,	*Hayward.*
Anderson, Carl Tesch,	*Milwaukee.*
Anderson, Esther,	*Madison.*
Anderson, William Tait,	*Oshkosh.*
Anderson, Nils Andreas,	*Chetek.*
Anderson, Oren Joseph,	*Newark, O.*
Babcock, Calvin Guiteau,	*Dodgeville.*
Baird, Oscar,	*River Falls.*
Baker, Ella May,	*Blanchardville.*
Baker, John Syney,	*Osseo.*
Barr, Agnes Paterson,	*Evanston, Ill.*
Barth, John Herman,	*Port Washington.*
Bartelt, George,	*Fond du Lac.*
Bartlett, Ferdinand von Arlt,	*Milwaukee.*
Beach, Julia Anna,	*Des Moines, Ia.*
Beebe, Matthew Ross,	*Madison.*
Beers, Emma Mae,	*Platteville.*
Beers, Fred Albert,	*Platteville.*
Benkendorf, Gustav Henry,	*Madison.*
Bentzien, Emil William,	*Milwaukee.*
Bergum, Bessie Isabelle,	*De Forest.*
Binnie, Helen Archibald,	*Poynette.*
Birge, Raymond Thayer,	*Troy, N. Y.*
Bissell, Wayne William,	*Lodi.*
Blied, Matilda Elizabeth,	*Madison.*
Bobo, Mildred Elnora,	*Richland Center.*
Bogue, Grace Anna,	*Poynette.*
Boleng, Lee Hayes,	*Tamarack.*
Bollenbeck, William Joseph,	*Madison.*

Bon Foey, Jennie,	*Milwaukee.*
Boning, Margaret,	*Basco.*
Borja, Victoriano,	*Santa Cruz, P. I*
Bowden, Garfield Arthur,	*Pepin.*
Braband, Lilla,	*Milwaukee.*
Brandel, Clarence Oliver,	*Milwaukee.*
Braun, Adolph R.,	*Milwaukee.*
Brewer, Robert Kemp,	*Mineral Point.*
Brockert, Clarence,	*Lancaster.*
Broughton, Ray,	*Evansville.*
Brown, Althea Huntington,	*Madison.*
Bruce, Milton Francis,	*Milwaukee.*
Buck, Roy Warren,	*Berlin.*
BuDahn, Louis August,	*Hortonville.*
Burns, Frank Lenoir,	*Platteville.*
Bussewitz, Walter Richard,	*Juneau.*
Caldwell, Leigh W.,	*Waupun.*
Cairns, John Hunter,	*Montello.*
Carleton, Guy Emerson,	*Colby.*
Carpenter, James William,	*Spring Green.*
Carson, Spencer,	*Monticello, Ind.*
Cary, Lucian Herbert,	*Madison.*
Casey, Edwina Mary,	*Madison.*
Cessna, Ethyl,	*Ames, Ia.*
Chaefaut, Earl Russell,	*Menomonie.*
Chandler, Ruth Farrar,	*Fond du Lac.*
Christensen, Hans Gerhard,	*La Crosse.*
Clark, Georgiana,	*Portage.*
Clark, John,	*Portage.*
Clay, Ellen Elizabeth,	*Warren.*
Cleary, John Edward,	*Antigo.*
Clifton, Archie Roy,	*New Lisbon.*
Clough, Ethel Pearl,	*Portage.*
Cocklin, Nellie Edna,	*Livingston.*
Collmann, Chester William,	*Madison.*
Cook, Charles Alva Henry,	*Milton Junction.*
Cooper, Belva Naioma,	*Rochester.*
Cramer, Emma Mary,	*Portsmouth, O.*
Crawford, Mariam,	*Madison.*
Crosby, May Lillian,	*Muscoda.*
Curtis, Raymond William,	*Waupun.*

Cudahy, Michael Francis,	*Milwaukee.*
Dahl, John,	*Strum.*
Dakan, Carl Spencer,	*Norborne, Mo.*
De Wolf, Clark Frisbie,	*Findlay, O.*
Davison, Walter Bert,	*Cedar Lake.*
Desmond, Isabella Susie,	*Madison.*
Digman, Kate,	*Milwaukee.*
Dittman, Fred August,	*La Crosse.*
Dixon, Sara,	*Nora, Ill.*
Dodd, Minnie Lee,	*Louisville, Ky.*
Dodge, Bernard Ogilvie,	*Algoma.*
Donovan, Margaret Monica,	*Madison.*
Doudna, Edgar George,	*Dodgeville.*
Doudna, Frank Isaac,	*Stoughton.*
Dow, George Litch,	*Madison.*
Drips, Della Gay,	*La Crosse.*
Drowatzky, Rosa Dena,	*Tomah.*
Eierman, Arthur Charles,	*Milwaukee.*
Eldred, Claude Henry,	*Marshall.*
Ellis, Amy Gertrude,	*Mazomanie.*
Ely, Richard Sterling,	*Madison.*
Ellsworth, Clara,	*Barron.*
Enright, John Joseph,	*Madison.*
Epstein, Dorothea Frederica Louise,	*Portage.*
Erwin, Edith Josephine,	*Milwaukee.*
Essick, Charles Rhein,	*Reading, Pa.*
Fass, Hugo William,	*Milwaukee.*
Fernald, Sydney Wentworth,	*St. Paul, Minn.*
Feuerhak, Martin George,	*La Crosse.*
Field, Albert Martin,	*McFarland.*
Flick, Ernest Clinton,	*Augusta.*
Ford, Annie Gordon,	*La Crosse.*
Fries, Scott Winters,	*Richland Center.*
Fromm, William Henry,	*Milwaukee.*
Fulton, Philip Randall,	*Hudson.*
Gapen, Mildred,	*Madison.*
Garrison, Eleanor,	*Fayette, Ia.*
Geissendorfer, John Theodore,	*Sheffield, Ia.*
Gilbert, Edward Martinius,	*Blair.*
Gilbert, Laura,	*Marengo, Ill.*
Glasspoole, James Edward,	*Mondovi.*

Gleason, Edward Peck,	*Ashland.*
Gomez, José,	*Jaro, Ilo-ilo, P. I.*
Goodenough, Jessie Eunice,	*Tomah.*
Greenfield, Benjamin,	*Madison.*
Gruetzmacher, Clarence,	*Milwaukee.*
Gruhl, Edwin Frederick,	*Milwaukee.*
Gunderson, Nicholas,	*Ixonia.*
Hacker, Emil Frederick,	*Arcadia.*
Haessler, Betty,	*Milwaukee.*
Hall, William Oscar,	*Richland Center.*
Hammond, Mary Anna,	*Boscobel.*
Hansen, Frederick Alexander,	*Waupaca.*
Hansen, Herbert Conrad,	*Chicago, Ill.*
Hanson, Josephine,	*Stoughton.*
Hanson, Mary Ann,	*New Lisbon.*
Hanten, John Henry,	*Watertown, S. D.*
Hargrave, Mary,	*Wilton.*
Hastings, Rolland Thomas Rankin,	*Chicago, Ill.*
Hatch, Ethel Sumner,	*Grantsburg.*
Hatch, Kirk Lester,	*Waterloo.*
Head, Helen Louise,	*Albion.*
Helmholz, Vogel Herbert,	*Nashota.*
Herfordt, Hilda,	*Wahoo, Neb.*
Higgins, Mary,	*Sturgeon Bay.*
Hill, Lydia Alice,	*Lake Geneva.*
Holben, Marvin,	*Norcatur, Kan.*
Holum, Ruth Caroline,	*De Forest.*
Holty, Marvin Nuell,	*Madison.*
Hospes, Richard,	*St. Louis, Mo.*
Houghton, Haram Cole, Jr.,	*Red Oak, Ia.*
Howlett, Irving Richard,	*Oshkosh.*
Hoyt, Howard, Jr.,	*Evanston, Ill.*
Irving, Frances Reynolds,	*Appleton.*
Ives, George,	*Ft. Atkinson.*
Jackson, Elizabeth Brigham,	*Stoughton.*
Jackson, Ethel Hattie,	*Eleva.*
James, Alice,	*Grand Rapids.*
Johnson, Albert Aaron,	*McFarland.*
Johnson, Carl William,	*Racine.*
Jolliffe, Ethel May,	*Randolph.*
Jones, Myrtle Estelle,	*Seattle, Wash.*

Jones, Jennie Adelle,	*Mineral Point.*
Kavanagh, Cecilia Olive,	*Madison.*
Keller, Marie Victoria,	*Milwaukee.*
Killen, Sherman John,	*Cato.*
Kimball, Chester Albert,	*Briggsville.*
Kleinpell, Karl Lessing,	*Cassville.*
Kuehmsted, Arthur Odin,	*Appleton.*
Kuehnast, Ida Emilia,	*Stevens Point.*
Kuykendall, Alfred,	*Twin Bluffs.*
La Reau, Eva Marie,	*Helena, Mont.*
Larson, Lewis P.,	*Whitehall.*
Laws, Alexandrina,	*Milwaukee.*
Leaper, Warren Eugene,	*Green Bay.*
Le Febvre, Clarence Charles,	*Green Bay.*
Leicht, George,	*Menomonee Falls.*
Lerom, Bertha,	*Buxton, N. D.*
Lerom, Hattie Lucene,	*Buxton, N. D.*
Leslie, John Woodworth,	*Chicago, Ill.*
Letzig, Emma,	*Saint Louis, Mo.*
Lewis, Kate,	*Superior.*
Lewis, Sadie,	*Marinette.*
Libby, Caroline Gail,	*Madison.*
Losse, Herbert Alfred,	*Milwaukee.*
Lovett, Kate Agnes,	*Greencastle, Ind.*
Lovett, Nellie Aurelia,	*Greencastle, Ind.*
Lundberg, Emma Octavia,	*Rockford, Ill.*
Lupinski, Oswald,	*Milwaukee.*
Manning, Florence Edna,	*Belvidere, Ill.*
Marshall, Edith Mary,	*Rensselaer, Ind.*
Marvin, Adeline,	*Oshkosh.*
Maurer, Heinrich,	*Willsbach, Germany.*
McClatchie, Lela Annette,	*Augusta.*
McCormick, Charles James,	*Trempeauleau.*
McCormick, Edith Trafton,	*Sparta.*
McLeod, Robert Henry,	*Milwaukee.*
McIntosh, Frances Mary,	*Madison.*
Melby, Elizabeth,	*Merrillan.*
Mills, John McCuen,	*Milwaukee.*
Minsart, Anton,	*Green Bay.*
Moodie, Julia Edith Strickland,	*Winnipeg, Man., Can.*
Moran, Esther,	*Superior.*

Morell, Gertrude,	*Milwaukee.*
Morse, Byrrd Pearl,	*Madison.*
Moudy, Maude,	*Indianapolis, Ind.*
Mueller, George John,	*Pheasant Branch.*
Muench, Joseph Frederick,	*Buffalo.*
Murray, Roy,	*Lawrence, Kan.*
Neeson, James Seymour,	*Port Washington.*
Nelson, Ernest Benjamin,	*Iron River.*
Nelson, Nealie Amanda,	*River Falls.*
Neprud, Martha,	*Westby.*
Neprud, Nora,	*Westby.*
Oakey, Samuel Frederic,	*Osceola.*
Ochsner, Emma Mathilda,	*Prairie du Sac.*
Oldenburg, Frederick William,	*Oshkosh.*
O'Melia, James Henry,	*Rhinelander.*
Owen, Mary Elizabeth Hodges,	*Chicago, Ill.*
Patterson, Percival,	*Darlington.*
Pengelly, Ray Leo,	*Madison.*
Pengelly, Ruby Viola,	*Madison.*
Pettijohn, John J.,	*Menomonee Falls.*
Phelps, Mary Eleanor,	*Aurora, Ill.*
Powell, Fred,	*Nickerson, Kan.*
Preston, Charles Herbert,	*Madison.*
Purin, Charles Maltador,	*Madison.*
Purtell, Claudien,	*Madison.*
Pynch, Jenner Alfred,	*Madison.*
Raettig, Meta Bernadine,	*Milwaukee.*
Rakow, Bertha Marie,	*Madison.*
Rankin, Carrie Adela,	*Waukesha.*
Rankin, Walter Lowrie,	*Waukesha.*
Reinking, Ella,	*Milwaukee.*
Rice, Felix George,	*Milwaukee.*
Ricker, Margaret Tracy,	*Portsmouth, O.*
Rickerman, Jay Edgar,	*Sullivan.*
Riddle, Mertis Lawson,	*Lodi.*
Riemschneider, Albert,	*Milwaukee.*
Riggs, Lucia Melvina,	*Crandon.*
Riley, Lotta Katheryne,	*Mt. Horeb.*
Roberts, Eck Crippen,	*Cresco, Ia.*
Rosencrans, Blanche Louise,	*Kansas City, Mo.*
Roy, Robert McGregor,	*Milwaukee.*

Ruble, Jesse Jones,	*Platteville.*
Runge, Alma Matilda,	*Madison.*
Ryder, Gana Gustavus,	*Fond du Lac.*
Ryman, Arthur Ernest,	*Richland Center.*
Ryman, Eugene,	*Mauston.*
Samuela, Sister Mary,	*Milwaukee.*
Schaeuble, Clara,	*Hamilton, O.*
Schaffreth, William,	*Milwaukee.*
Scherpe, Louise,	*St. Louis, Mo.*
Schlafer, Adeline Louisa,	*Menomonee Falls.*
Schrup, Henrietta Marie,	*Dubuque, Ia.*
Schuette, Henry August,	*Green Bay.*
Schuster, Clara,	*Platteville.*
Schwartz, Marie Therese,	*Freeport, Ill.*
Schwerdt, Matilde,	*Cripple Creek, Col.*
Scott, Almere Louise,	*Appleton.*
Scott, Alice Lillian,	*Petersboro.*
Scott, Genevieve Allen,	*Lake Geneva.*
Severin, Harry Charles Paul,	*Milwaukee.*
Siebecker, Karl La Follette,	*Madison.*
Simon, Edmond Montefiore,	*Pueblo, Col.*
Sloanaker, Sarah Elizabeth,	*Milwaukee.*
Smith, Maud Emily,	*Madison.*
Smith, William Don,	*Des Plaines, Ill.*
Sparks, Loron Darius,	*Stevens Point.*
Steal, William Nicholas,	*Belleville.*
Stearns, Edward Wording,	*Madison.*
Steenbock, Helen Christine,	*Madison.*
Stempfel, Theodore Charles,	*Indianapolis, Ind.*
Steve, William Frederick,	*Middleton.*
Stevens, Bessie Maude,	*Madison.*
Stewart, Walter William,	*Burnamwood.*
Stiehm, Herman William,	*Johnson Creek.*
Storie, Agnes Groves,	*Lodi.*
Stout, Claude De Ora,	*Edgerton.*
Stout, Arlou Burdette,	*Edgerton.*
St. Sure, Jeannette Linsfield,	*Madison.*
Suzuki, Ewazo,	*Fayette, Mo.*
Swenson, Henry Edward,	*Racine.*
Swetland, William Delbert,	*Kalispel, Mont.*
Swint, Katherine Marie,	*Madison.*

Tarrell, Arch Leroy,	*Platteville.*
Taylor, Florence Wills,	*Linden.*
Ternes, Louise Catherine,	*Mineral Point.*
Thickens, John Herman,	*Appleton.*
Thiel, Richard Benjamin,	*Wausaukee.*
Thomas, Ethel May,	*Superior.*
Thomas, Nellie,	*Sheboygan Falls.*
Thrasher, Sarah Ellen,	*Kewaunee, Ill.*
Tighe, Benjamin Bennett,	*Clinton.*
Tobenkin, Joseph,	*Madison.*
Tower, Irving,	*Evanston, Ill.*
Uglow, Clara Wilmot,	*Palmyra.*
Ulbright, Lydia Agnes,	*Milwaukee.*
Upson, Lent Layton,	*Rockford, Ill.*
Van Auken, Clarice Lillian,	*Madison.*
Van Buren, Frederick Cheney,	*Beaver, Utah.*
Van Hise, Olive May,	*Demorest, Ga.*
Van Natta, Jesse Allan,	*Platteville.*
Vaughan, Lulu,	*Wauzeka.*
Vetting, Ida Fredericka,	*Rhinelander.*
Villas, Ester Vilhelmine,	*Milwaukee.*
Volkmann, Hilda Caroline,	*Watertown.*
Wadleigh, Judith May,	*Stevens Point.*
Wahl, Harry Boswell,	*Stratford.*
Walker, William Bohler, ,	*Mason, Ga.*
Waller, Frank Laird,	*Menomonie.*
Washburn, Martha Lucile,	*Sturgeon Bay.*
Waters, Elizabeth Agnes,	*Fond du Lac.*
Wehausen, Edna Grace,	*Madison.*
Wells, Earl Harold,	*Madison.*
Weschcke, Herta,	*New Ulm, Minn.*
Whitney, Elizabeth Day,	*Madison.*
Wightman, Nellie Maude,	*Richland Center.*
Wile, Raymond Samuel,	*Evansville, Ind.*
Williams, Arthur James,	*Evansville.*
Willis, Nina Augusta,	*Rewey.*
Winger, Reinhard Conrad,	*Martell.*
Winter, Coila, Maria,	*Darlington.*
Woffenden, Adah Annastasia,	*Madison.*
Woolworth, Walter Wallace,	*Dodgeville.*
Wright, Donald Bassett,	*Berlin.*

Zeidler, Richard, *Madison.*
Zellhoefer, Marilla, *Wausau.*
Zentner, Wilfred Rudolph, *Fall Creek.*

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SUMMER SESSION FOR APPRENTICES AND ARTISANS

Graduates

Carpenter, Randle, Churchill, *Starkville, Miss.*
B. S., Mississippi Agricultural and Mechanics College,
Engines and Boilers, Applied Electricity, Machine Design, Fuels and Lubricants.

Finch, Stanley Phister, *Austin, Tex.*
C. E., University of Texas,
Engines and Boilers, Materials of Construction.

Fullan, Michael Thomas, *Auburn, Ala.*
M. E., Alabama Polytechnic Institute,
Machine Design, Manual Training.

Harnden, Floid Leland, *Barrington, Ill.*
B. S., Northwestern University,
Education, Applied Electrochemistry, Manual Training, Machine Design,

Lanier, Alexander Carturgh, *Cincinnati, O.*
M. E., University of Tennessee,
Applied Electrochemistry.

Lehman, Daniel Acker, *Scotland, Pa.*
M. A., Western Reserve University,
Manual Training, Mathematics.

Plagge, Herbert John, *Barrington, Ill.*
B. S., Northwestern University,

Powers, John Francis, *Poynette.*
B. L., Northwestern University,
Botany, Manual Training,

Rathjen, Edwin Frederick, *Milwaukee*
M. A., University of Wisconsin,
Engines and Boilers, Shop Work, Manual Training.

Rosenstengel, Rudolph, *Madison.*
B. S., University of Wisconsin,
Applied Electrochemistry.

Smythe, Edwin Willis, *Madison.*
B. A., University of Wisconsin,
Electrochemistry, Rhetoric and Oratory.

Wilmore, John Jenkins, *Auburn, Ala.*
M. E., Purdue University,
Engines and Boilers, Materials of Construction, Fuels and Lubricants.

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Undergraduates

Bachman, Edward Leslie,	*Columbus, O.*
Bechlem, Alford William,	*Plymouth.*
Bechman, Arnold Standley,	*Madison.*
Birkett, Miles Wren,	*Madison.*
Blackburn, Guy Wilcox,	*Elgin, Ill.*
Blankenhorn, George Stevens,	*Milwaukee.*
Braun, Rudolf,	*Milwaukee.*
Broecker, Henry John,	*Racine.*
Brown, Harold,	*Evansville.*
Clotfelter, Carrie,	*Cherryvale, Kan.*
Colladay, Edgar Bergman,	*Madison.*
Cronin, William Leo,	*Milwaukee.*
Cross, Claude Henry,	*Harvey, Ill.*
Dornholdt, Oliver George,	*New Glarus.*
Ellingham, William Joseph,	*Racine.*
Faber, Merle Everitt,	*Mendota, Ill.*
Falk, Harold Sands	*Milwaukee.*
Farris, Jerry Baker,	*Santa Fee, N. M.*
Fragante, Vicente,	*Vigan, Ilocos Sur, P. I.*
Friebel, Ernest,	*Fredonia.*
Gilbert, Frank Bardwell, Jr.,	*Big Springs, Tex.*
Greene, Arthur Nathanael,	*Madison.*
Grinde, John Larson,	*Madison.*
Guilford, Charles Carroll,	*Platteville.*
Halliday, Malcolm John,	*Riverside, Ill.*
Hart, Simeon Thompson,	*Madison.*
Haskell, Sidney Cleveland,	*Cobourg, Ont., Can.*
Hass, Clarence Frederick,	*Fond du Lac.*
Havens, Fred,	*Chicago, Ill.*
Heitkamp, Joe William,	*Reedsburg.*
Hidalgo, Marceliano,	*Binalonan, Pang., P. I.*
Hill, Decker Abraham,	*Mt. Carmel, Ill.*
Houston, Gray Jones,	*San Antonio, Tex.*
Huntington, Edward Estabrook,	*Platteville.*
Jessup, John Mercator,	*Chicago, Ill.*
Johns, Edward Francis,	*Madison.*
Johnson, Chester Nels,	*Chicago, Ill.*
Kehr, Carl Merriman,	*Sterling, Ill.*
Kennedy, Frank M.,	*Hinckley, Ill.*
Küstermann, Walter Wolleben,	*Madison.*

Langridge, William John,	*Toronto, Can.*
Larsen, Albert Martin,	*Racine.*
Larson, Rollo Stanley,	*Madison.*
Litchfield, Frank Earl,	*Macomb, Ill.*
Lloyd, Emrys J.,	*Cambria.*
Lyford, Walter,	*Madison.*
Lyndon, Francis Alfred,	*Madison.*
Mandersheid, John Godfred,	*Fond du Lac.*
McComb, Harvey Godfrey,	*Milton.*
Meriam, Chester Robert,	*Cleveland, O.*
Messmer, John,	*Milwaukee.*
Miller, Edward Bartlett,	*Arlington, Neb.*
Miller, Adam Richard,	*Arlington, Neb.*
Mott, Archie,	*Oconto.*
Nuti, Charles Bennett,	*Glen Haven.*
Opp, George Wilson,	*Hughesville, Pa.*
Orton, Merritt Kasper,	*Bangor, Mich.*
Pedley, Chester Arthur,	*Etna.*
Powell, David Alva,	*Madison.*
Quackenbush, Conrad John,	*Niagra Falls, N. Y.*
Rea, Russell,	*Merton.*
Rehfeld, Grover George,	*Milwaukee.*
Rice, Clarence J.,	*Milwaukee.*
Riddle, Charles Robert,	*Phillipsburg, N. J.*
Rogers, Sumner Barnes,	*Milwaukee.*
Scherpe, Amy,	*St. Louis, Mo.*
Schoonorer, Addison Emmet,	*Fond du Lac.*
Semrad, Charles Albert,	*Madison.*
Shapiro, Joe,	*Antigo.*
Shepherd, Claude Harold,	*Texarkana, Ark.*
Slack, Jennie Elizabeth,	*Chicago, Ill.*
Smith, Clarence Joy,	*Wichita, Kan.*
Smith, Glen,	*Madison.*
Smith, Nellie Montfort,	*Wichita, Kan.*
Strebel, John,	*Madison.*
Swoyer, Clarence Albert,	*Columbus, O.*
Vater, Frederick,	*Madison.*
Walmsley, Stephen Marston,	*Eau Claire.*
Whelan, Thomas C.,	*Chippewa Falls.*
Williams, Mark Levius,	*Fox Lake.*
Winter, Albert Henry,	*Chicago, Ill.*
Wohlrab, Syvan William,	*Milwaukee.* —82

SUMMER DAIRY SCHOOL

Carow, Herman August,	*Star Prairie.*
Frank, John Lewis,	*Freeport, Ill.*
Frechtling, Carl Henry,	*Beloit.*
Glaus, Gottfried,	*Fond du Lac.*
Guardia, Herman de la,	*Panama, Panama.*
Kempfer, Emil,	*Lamont.*
Klein, William John,	*Cedar Lake, Ind.*
Le June, Joseph Francis,	*Rice Lake.*
Lopez, Rodolfo Bibiana,	*Coronda, Arg. Rep.*
Mendez, Armulfo Epitacio,	*Hidalgo, Mex.*
Miller, Walter Charles,	*Manawa.*
Peterson, Louis Ole,	*Strum.*
Sanborn, Eugene Hiram,	*Madison.*
Severson, Martin,	*Galesville.*
Swenson, Arthur,	*Racine.*
Thiede, Arthur John,	*Abrams.*
Thomas, William Abram,	*Randolph.*
Tullock, George Albert,	*Rockford.*
Zaske, Joseph August,	*Harrisville.*

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SCHOOL OF MUSIC

Graduates

Anderson, Anna Louise,	*Madison.*
Buehler, Elizabeth,	*Madison.*
McLean, Marguerite Louise,	*Menomonie.*
Renk, Katherine Mary,	*Sun Prairie.*
Toepfer, Mathilda Rose,	*Madison.*

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Collegiate

FOURTH YEAR

Allyn, Horace William,	*Madison.*
Anderson, Vinnie Bertine,	*Stoughton.*
Ballard, Katherine Marie,	*Madison.*
Breitenbach, Mabel,	*Madison.*
Buchanan, Iva Luella,	*Rio.*
Byrne, Agnes,	*Madison.*
Ehlman, Walter Warren,	*Milwaukee.*
Fairchild, Laura,	*Madison.*
Grow, Grace Lillian,	*Neillsville.*

Johnson, Margaret Isabel,	*Sheridan.*
Lang, Bertha Alice,	*Madison.*
Maurer, Erna Edna,	*Arcadia.*
Norsman, Cora Miriam,	*Madison.*
Norton, Sadie Evalyn,	*Poynette.*
Perkins, Florence Edna,	*Waukesha.*
Samuels, Grace Marguerite,	*Darlington.*
Sanders, Otilda Helen,	*Mount Horeb.*
Sanderson, Katherine,	*Madison.*
Teisberg, Julia,	*Stoughton.*
Theobald, Almina Mae,	*Madison.*
Waller, Frank Laird,	*Menomonie.*
Webber, Jessie Myrtle,	*Poynette.*

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THIRD YEAR

Alford, Hazel Viola,	*Madison.*
Bergen, Lillian Kathryn,	*Madison.*
Brandt, Fredolia Eugenia,	*Watertown.*
Brunk, Vena,	*Chicago, Ill.*
Churchill, Ethel Elizabeth,	*Monroe.*
Collin, Daisy,	*Madison.*
Comfort, Lucile, Grace,	*Madison.*
Dahle, Marie Genevieve,	*Mount Horeb.*
Farnum, Isabel Monica,	*Madison.*
Fisher, Bertha Miriam,	*Madison.*
Gilman, Flora Mosely,	*Madison.*
Glen, Mary Alice,	*Madison.*
Nebel, Elizabeth Katherine,	*Madison.*
Otterson, Andrew,	*Madison.*
Richmond, Fannie Ruth,	*Morrison, Ia.*
Ross, Maybelle Emmeline,	*Belleville.*
Rueth, Anna Petronilla,	*Sun Prairie.*
Starks, Lula,	*Madison.*
Stoehr, Joseph,	*Lynxville.*
Turneaure, Florence,	*Madison.*
Waterman, Justine,	*Madison.*
Whitelaw, Edith Mabel,	*Lodi.*
Whyte, Effie Margaret,	*Watertown.*
Wynn, Carrie,	*Madison.*

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SECOND YEAR

Aldrich, Loyal Blaine,	*Milwaukee.*
Anderson, Adelia Eugenia,	*Stoughton.*
Bates, Warren Carver,	*Madison.*
Bewick, Mary Louise,	*Nevada, Mo.*
Birge, Raymond Thrayer,	*Troy, N. Y.*
Bridge, Ethel Murray,	*Monroe.*
Brown, Florence Mary,	*Spring Green.*
Burnham, Dorothy Marie,	*Madison.*
Chynoweth, Emily Ellen,	*Madison.*
Confer, Edna Lorena,	*Madison.*
Coon, Winifred Pansy,	*Edgerton.*
Dahl, Eleanor Ingoborg,	*Westby.*
Elliot, Edith,	*Madison.*
Gallagher, Sarah Ellen,	*Madison.*
Gilfillan, Ella Barbara,	*West Salem.*
Gleason, Mary Peck,	*Madison.*
Green, Maud Edna,	*Broadhead.*
Greverus, Jenos,	*Appleton.*
Holty, Martin Noel,	*Madison.*
Hutson, Harriet Mae,	*Madison.*
Jennings, Helen,	*Sparta.*
Kasiska, Mabel Josephine,	*Pocatello, Idaho.*
Kleinfelter, Barbara Hazel,	*Madison.*
Lewis, Margaret Elizabeth,	*Madison.*
Main, Della,	*Oregon.*
Melaas, Alva Jeanette,	*Stoughton.*
Memhard, Ella Lucia,	*Madison.*
Mills, Genevieve,	*Madison.*
Moore, Grace Mark,	*Madison.*
Moore, Herbert Fisher,	*Madison.*
Morgan, Sarah Blanche,	*Madison.*
Moss, Ruth Elizabeth,	*Milwaukee.*
Mueller, Erma Voshardt,	*Two Rivers.*
Mulcay, Joseph,	*Madison.*
Nelson, Mabel Bellisa,	*South Wayne.*
O'Grady, Elizabeth Cecelia,	*Madison.*
Olson, Mollie,	*Madison.*
Ottum, Anette Helena,	*Mac Farland.*
Patterson, Zenia,	*Cambridge.*
Pease, Clifford Coleman,	*Madison.*

Rietow, Rhoda Henryetta,	*Sheboygan.*
Ryan, Winifred Martha Ellen,	*Merrill.*
Sammis, Flora Elizabeth,	*Madison.*
Schlueter, Elsa Georgiana,	*Morrisonville.*
Schubring, Selma Langeham,	*Madison.*
Shields, Caroline Jane,	*Punxsutawney, Pa.*
Spilde, Edna Lovisa,	*Lodi.*
Stevens, Anna,	*Madison.*
Stock, Ida,	*Madison.*
Taylor, Jennie Mabel,	*Madison.*
Toepfer, Selma,	*Madison.*
Verbeck, Vivian Edith,	*Lodi.*
Volkman, Alice,	*Louisville, Ky.*
Wyman, Grace,	*Madison.*
Zimmerman, Nell,	*Madison.*

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FIRST YEAR

Andreson, Selina Elizabeth,	*Racine.*
Angell, Nellie Nadine,	*Sun Prairie.*
Baker, Sarah Alice,	*Eagle.*
Becker, Katherine Christiana,	*Watertown.*
Borgman, Elizabeth Vera,	*Kewaunee.*
Boyce, Nellie Antoinette,	*Madison.*
Bredin, Honta Smalley,	*Madison.*
Carey, Loretta Helen,	*Sioux City, Iowa.*
Carter, Fannie Walbridge,	*Hinsdale.*
Chrisler, Lola Vee,	*West Point.*
Colburn, Guy Blandin,	*Nashua, N. H.*
Coleman, Chester William,	*Madison.*
Cooley, Ida	*Madison.*
Cornell, Harold Edward,	*South Kaukauna.*
Dahle, Gertrude Agnes,	*Sun Prairie.*
Egre, Ella Johanna,	*Cambridge.*
Epstein, Louisa Dorothea,	*Portage.*
Fehlandt, Elsie Louisa,	*Madison.*
Ferguson, Martha Luella,	*Milwaukee.*
Findeisen, Florence Susan,	*Berwyn, Ill.*
Gilliland, Carl Glen,	*Leon.*
Gilmore, Marian,	*Madison.*
Gross, Lyda Leah,	*Madison.*
Grover, Alice Mary,	*Madison.*

Gugler, Ralph Edward,	*Milwaukee.*
Hall, Margaret Spencer,	*Madison.*
Hatch, F. Winifred,	*Waupaca.*
Hayden, Florence Rosina,	*Sun Prairie.*
Hayes, May Estelle,	*Janesville.*
Homuth, Erwin Silas,	*Madison.*
Horstmeier, Franklin Frederick,	*Madison.*
Hyland, Nona Mary,	*Edgerton.*
Jamieson, Mary Lucy,	*Poynette.*
Jeglum, Alma Pauline,	*Blanchardville.*
Kassler, Harry,	*Dubuque, Iowa.*
Kathan, Harriet Florence,	*Madison.*
LeRoy, Elizabeth Laura,	*Marinette.*
Lewellin, Bessie Eleanor,	*Waterloo.*
Lindas, Carrie Henrietta,	*Marshall.*
Lohmaier, Grace Edna,	*Cambridge.*
Lopez, Blossom Law,	*Madison.*
Maine, George Edward,	*La Crosse.*
Manhart, Clarence Eugene,	*Hillsboro.*
Marsh, Nora Edna,	*Neillsville.*
Matson, Vera,	*Madison.*
McLeod, Florence Genevieve,	*Chippewa Falls.*
McMillan, Florence Edith,	*Fort Atkinson.*
McRae, Mary Ethel,	*Rhinelander.*
Meuer, Alma Helen,	*Madison.*
Meyer, Alice Carlton,	*Madison.*
Moore, Bessie Anna Louise,	*Winona, Minn.*
Morgan, Cora Alya,	*Evansville.*
Morris, George Charles,	*Ridgeway.*
Morse, Earle Laurence,	*Madison.*
Negus, Laura Alice,	*Cottage Grove.*
Noon, Etta,	*Sumner, Iowa.*
Ofstie, Esther Charlotte,	*Eau Claire.*
Payton, Elizabeth,	*Madison.*
Polley, Grace Irma,	*Madison.*
Rankin, Mildred Rose,	*Morrisonville, Ill.*
Riley, Katherine Elizabeth,	*Darlington.*
Riley, Martha Kenkrick,	*Darlington.*
Rood, Grace May,	*Sun Prairie.*
Sanders, Belinda Maria,	*Madison.*
Segestrom, Signe,	*Rhinelander.*

Starks, Irene,	*Madison.*
Stevens, Elinor,	*Chicago, Ill.*
Stough, Charlotte,	*Minneapolis, Minn.*
Sullivan, Helen,	*Madison.*
Terry, Eleanor Rebbecca,	*Madison.*
Thrasher, Sarah Ellen,	*Kewaunee, Ill.*
Titzlaff, Bessie,	*Madison.*
Trainor, Frankie,	*Madison.*
Vangen, Sena,	*Rio.*
Van Patten, Lulu May,	*Evansville.*
Vaughan, Lulu,	*Waukesha.*
Weaver, Paul John,	*Madison.*
Webb, Alice Lindsey,	*Madison.*
Wilkins, Alma Lee,	*Viroqua.*
Wilkinson, Pearl Augusta,	*Beeton.*
Williams, Mabel Elizabeth,	*Cobb.*
Winsor, Herbert Munsel,	*Mauston.*
Wohlenberg, Erma Louise,	*Holstein, Iowa*
Woll, Margaret,	*Madison.*
Wright, Mollie Florence,	*Madison.*

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SUMMARY OF STUDENTS

GRADUATE SCHOOL—180.

Fellows	22
Scholars	19
Other Graduate Students	139

COLLEGE OF LETTERS AND SCIENCE—1579.

Graduate Students	160
Senior Class	313
Junior Class	293
Sophomore Class	336
Freshman Class	375
Adult Special Students	75
Two-Year Pharmacy Students	27

Included in the above are the following:

Course in Commerce—200.

Senior Class	30
Junior Class	35
Sophomore Class	61
Freshman Class	68
Adult Special Students	6

Course in Philosophy—65.

Senior Class	29
Junior Class	36

Course in Pharmacy—37.

Graduate Students		2
Four Years' Course.	Seniors	2
	Juniors	2
	Sophomore	1
	Freshmen	3
Two Years' Course...	Second Year	12
	First Year	15

COLLEGE OF ENGINEERING—799.

Graduate Students		12
Senior Class—132.		
Civil Engineering Course		27
Mechanical Engineering Course		33
Electrical Engineering Course		41
General Engineering Course		26
Chemical Engineering Course		5
Junior Class—154.		
Civil Engineering Course		49
Mechanical Engineering Course		24
Electrical Engineering Course		57
General Engineering Course		17
Chemical Engineering Course		7
Sophomore Class—225.		
Civil Engineering Course		90
Mechanical Engineering Course		33
Electrical Engineering Course		69
General Engineering Course		18
Chemical Engineering Course		15
Freshman Class		238
Adult Special Students		38

COLLEGE OF AGRICULTURE—622.

Graduate Students			8
Long Course	Seniors	18	
	Juniors	37	
	Sophomores	40	
	Freshmen	36	
	Special Student	1	
	Adult Special Students	10	142
Short Course	Second Year	116	
	First Year	211	327
Dairy Course			145

COLLEGE OF LAW—165.

Senior Class	38
Middle Class	40
Junior Class	53
Seniors in Letters and Science Electing Law Studies	26
Unclassified Students	8

SCHOOL OF MUSIC—191.

Collegiate..	Graduate Students	5	
	Fourth Year	22	
	Third Year	24	
	Second Year	55	
	First Year	85	—191
Deduct students enrolled in other colleges		68	123

SUMMER SESSION OF 1906.

Letters and Science—		
Graduate Students	134	
Undergraduates and teachers	321	
Apprentices and Artisans—		
Graduate Students	12	
Undergraduates and teachers	82	
Dairy School	19	—568
Deduct students now attending the University	170	— 398
Total number of students		3686
Twice enumerated 27, leaving as actual number		3659

In the enumeration of special students above, the classification by courses is as follows: Letters and Science, fourth year 1; third year 9; second year 19; first year 43; Civil Engineering, second year 3; Mechanical Engineering, fourth year 1; second year 2; Electrical Engineering, third year 1; second year 7; General Engineering, third year 1; Chemical Engineering, second year 1; first year students in Engineering 22.

APPENDIX

BULLETIN OF THE UNIVERSITY OF WISCONSIN

The Bulletin of the University of Wisconsin is published bimonthly at Madison. For postal purposes, all issues in all series of the Bulletin are included in one consecutive numbering as published, a numbering which has no relation whatsoever to the arrangement in series and volumes.

Under the heading General series are included the annual University catalogue, announcements of the various colleges and courses of the University, etc. The numbers in the General series are of varying size and are not designed to form volumes with title-pages and indexes. To date, the following serial numbers of the Bulletin are issues in the General series, viz., Nos. 24, 27, 29, 34, 35, 37, 44-46, 48, 52, 53, 56-61, 64-77, 80-82, 84-95, 97, 98, 104, 105, 107, 109-114, 116-118, 120-137, 139-141, 144, 146-147, 150-153.

The Economics and Political Science series, the History series, the Philology and Literature series, the Science series, and the Engineering series contain original papers by persons connected with the University. The series formerly issued as the Economics, Political Science, and History series was discontinued with the completion of the second volume, and has been replaced by the Economics and Political Science series and the History series.

The Committee of Publication of the five above-named series consists of:

WALTER M. SMITH, *Chairman.*

WILLARD G. BLEYER, *Secretary.*

THOMAS S. ADAMS, *Editor of the Economics and Political Science Series.*

VICTOR COFFIN, *Editor of the History Series.*

EDWARD KREMERS, *Editor of the Science Series.*

DANIEL W. MEAD, *Editor of the Engineering Series.*

EDWARD T. OWEN, *Editor of the Philology and Literature Series.*

A. Economics, Political Science, and History Series

VOLUME I

(Complete in three numbers, with title-page, table of contents, and index.)

No. 1. The geographical distribution of the vote of the thirteen states on the Federal Constitution, 1787-8, by Orin Grant Libby. 1894. 8+116 p. 2 pl. 75 cents. *Out of print.*

No. 2. The finances of the United States, from 1775 to 1789, with especial reference to the budget, by Charles Jesse Bullock. 1895. 8+158 p. 75 cents.

No. 3. The Province of Quebec and the early American revolution. A study in English-American colonial history, by Victor Coffin. 1896. 17+288 p. 75 cents.

VOLUME II

(Complete in four numbers, with title-page, table of contents, and index.)

No. 1. New governments west of the Alleghanies before 1780, by George Henry Alden. 1897. 7+74 p. 50 cents.

No. 2. Municipal history and present organization of the city of Chicago, by Samuel Edwin Sparling. 1898. 188 p. 75 cents.

F. Engineering Series

VOLUME I

(Complete in ten numbers, with title-page, table of contents, and index.)

No. 1. Track, by Leonor Fresnel Loree. 1894. 24 p. 25 cents. *Out of print.*

No. 2. Some practical hints in dynamo design, by Gilbert Wilkes. 1894. 16 p. 25 cents. *Out of print.*

No. 3. The steel construction of buildings, by Corydon Tyler Purdy. 1894. 28 p. 25 cents. *Out of print.*

No. 4. The evolution of a switchboard, by Arthur Vaughan Abbott. 1894. 32 p. 4 pl. 35 cents. *Out of print.*

No. 5. An experimental study of field methods which will insure to stadia measurements greatly increased accuracy, by Leonard Sewell Smith. 1895. 46 p. 1 pl. 35 cents. *Out of print.*

No. 6. Railway signaling, by William McCollough Grafton. 1895. 38 p. 35 cents.

No. 7. Emergencies in railroad work, by Leonor Fresnel Loree. 1895. 42 p. 35 cents.

No. 8. Electrical engineering in modern central stations, by Louis Aloysius Ferguson. 1896. 34 p. 35 cents.

No. 9. The problem of economical heat, light, and power supply for building blocks, school houses, dwellings, etc., by Gerdt Adolph Gerdtzen. 1896. 70 p. 45 cents.

No. 10. Topographical surveys, their methods and value, by John Lane Van Ornum. 1896. 40 p. 35 cents.

VOLUME II

(Complete in ten numbers, with title-page, table of contents, and index.)

No. 1. A complete test of modern American transformers of moderate capacities, by Arthur Hillyer Ford. 1896. 88 p. 35 cents.

No. 2. A comparative test of steam injectors, by George Henry Trautmann. 1897. 34 p. 25 cents.

No. 3. The superintendent of bridges and buildings, by Onward Bates. 1898. 30 p. 25 cents.

No. 4. Some unrecognized functions of our state universities, by John Butler Johnson. 1899. 20 p. 25 cents. *Out of print.*

No. 5. The transcontinental triangulation along the thirty-ninth parallel, by John Fillmore Hayford. 1900. 22 p. 6 pl. 25 cents.

No. 6. The chemical engineer, by Magnus Swenson. 1900. 14 p. 25 cents.

No. 7. Recently improved methods of sewage disposal, by John Butler Johnson. 1900. 20 p. 25 cents.

No. 8. An experimental study of the corrosion of iron under different conditions, by Carl Hambuechen. 1900. 48 p. 19 pl. 30 cents.

No. 9. The progress of the ceramic industry, by Edward Orton, Jr. 1903. 24 p. 25 cents.

No. 10. The effect of frequency on the steadiness of light emitted from an incandescent lamp, by Harold Seaman. 1904. 48 p. 25 cents.

VOLUME III

No. 1. An investigation of rotations produced by current from a single-phase alternator, by Arthur Curtis Scott. 1904. 162 p. 50 cents.

No. 2. The sources of water supply in Wisconsin, by William Gray Kirchoffer. 1905. 88 p. 50 cents.

No. 3. An investigation of the borides and silicides, by Oliver Patterson Watts. 1906. 68 p. 30 cents.

No. 4. Tests on re-inforced concrete beams, by Ernest Anthony Moritz. 1906. 76 p. 30 cents.

IN PREPARATION

The effect of frequency on the light of Nernst glowers, by Frederick William Huels.

An investigation of centrifugal pumps, by Clinton Brown Stewart.

Tests in plain and reinforced concrete, series of 1906, by Morton Owen Withey.

Persons who reside in the state of Wisconsin may obtain copies of the Bulletin free by applying to the Secretary of the Regents and paying the cost of transportation. Certain numbers, as indicated in the preceding list, are out of print and can no longer be furnished. Bulletins issued since May 1, 1898, are entered as second-class mail matter and no charge is required by the University to cover cost of postage. The postage required for such of the earlier numbers as can now be furnished is as follows: Econ. ser., Vol. 1, No. 2, 8c; No. 3, 13c; Vol. 2, No. 1, 4c; Phil. ser., Vol. 1, No. 1, 5c; Sci ser., Vol. 1, No. 1, 2c; No. 2, 2c; No. 3, 3c; No. 4, 3c; No. 5, 10c; Vol. 2, No. 1, 2c; Eng. ser., Vol. 1, No. 6, 2c; No. 7, 3c; No. 8, 2c; No. 9, 4c; No. 10, 3c; Vol. 2, No. 1, 4c; No. 2, 2c.

Any number of the Bulletin now in print will be sent postpaid to non-residents from the office of the Secretary of the Regents on receipt of the price given in the list printed above. Title-pages, tables of contents, and indexes to completed volumes will be furnished without cost on application to the University Librarian. Communications having reference to an exchange of publications should be addressed to the Librarian of the University of Wisconsin, Madison, Wis.

PUBLICATIONS OF THE WASHBURN OBSERVATORY

From the Washburn Observatory have been issued the publications of the Washburn Observatory, Vols. 1-11 (1882-1902). Correspondence regarding these publications should be addressed to the Director of the Washburn Observatory, Madison, Wis.

PUBLICATIONS OF THE AGRICULTURAL EXPERIMENT STATION

The Agricultural Experiment Station has issued Annual Reports, Nos. 1-23 (1883-1906), and Bulletins, Nos. 1-150 (1883-1907). Many of these publications are now out of print, but such annual reports and bulletins as are now available are sent free to all residents of the state upon request. A list of issues to date of the bulletins may be obtained from the Director of the Agricultural Experiment Station, Madison, Wisconsin, to whom all correspondence regarding these publications should be addressed.

BULLETIN OF THE WISCONSIN FARMERS' INSTITUTES

From the office of Farmers' Institutes has been issued the Wisconsin Farmers' Institutes Bulletin, Nos. 1-20 (1887-1906). Correspondence regarding these publications should be addressed to the Superintendent of Agricultural Institutes, Madison, Wisconsin.

Ph. D. THESES OF THE UNIVERSITY OF WISCONSIN

(List of theses printed since the publication of the Catalogue for 1905-06.)

Anderson, William Ballantyne, Ph. D., 1906.
A spectroscopic study of the spark spectrum in various gases at high pressure. Reprinted from the Astrophysical Journal, Vol. 24, p. 221-254. Madison, 1906.

Haussmann, John Fred, Ph. D., 1905.
Untersuchungen über Sprache und Stil des jungen Herder. 12+114 p. Borna-Leipzig, 1906.

Sammis, John Langley, Ph. D., 1906.
On the relation of chemical activity to electrolytic conductivity. Reprinted from the Journal of Physical Chemistry, Vol. 10, p. 593-625. Madison, 1906.

Shinn, Frederick Lafayette, Ph. D., 1906.
On the optical rotatory power of salts in dilute solutions. Reprinted from the Journal of Physical Chemistry, Vol. 11, p. 201-224. Madison, 1906.

Smiley, Charles Newton, Ph. D., 1905.
Latinitas and Hellenismos: the influence of the Stoic theory of style as shown in the writings of Dionysius, Quintilian, Pliny the Younger, Tacitus, Fronto, Aulus Gellius, and Sextus Empriricus. Reprinted from the Bulletin of the University of Wisconsin, Philology and Literature series, Vol. 3, p. 205-272. Madison, 1906.

Watts, Oliver Patterson, Ph. D., 1905.
An investigation of the borides and the silicides. Reprinted from the Bulletin of the University of Wisconsin, Engineering series, Vol. 3, p. 251-318. Madison, 1906.

No. 3. Congressional grants of land in aid of railways, by John Bell Sanborn. 1899. 130 p. 50 cents.

No. 4. English common law in the early American colonies, by Paul Samuel Reinsch. 1899. 64 p. 50 cents.

B. Economics and Political Science Series

VOLUME I

No. 1. The decline of landowning farmers in England, by Henry Charles Taylor. 1904. 66 p. 25 cents.

No. 2. History of agriculture in Dane County, Wisconsin, by Benjamin Horace Hibbard. 1904. 148 p. 75 cents.

No. 3. A history of the Northern Securities case, by Balthasar Henry Meyer. 1906. 136 p. 60 cents.

IN PREPARATION

The essential machinery of the central executive government of Wisconsin, 1836 to 1904, by James Duff Barnett.

Financial history of Kansas, by James Ernest Boyle.

Economic influences upon educational progress in the United States, 1820 to 1850, by Frank Tracy Carlton.

A congressional history of railways to 1850, by Lewis Henry Haney.

The extension of French laws to the colonies, by Henry Lorenzo Janes.

A financial and administrative history of Milwaukee, by Laurence Marcellus Larson.

The financial history of Wisconsin, by Raymond Vincent Phelan.

The labor history of the Cripple Creek district: a study in industrial evolution, by Benjamin McKie Rastall.

Collective bargaining in the United States by Margaret Anna Schaffner.

C. History Series

VOLUME I

No. 1. The origin of the system of land grants for education, by Joseph Schafer. 1902. 54 p. 35 cents.

No. 2. The king's household in England before the Norman conquest, by Laurence Marcellus Larson. 1904. 158 p. 50 cents.

No. 3. Lincoln's suspension of habeas corpus as viewed by Congress, by George Clarke Sellery. 1907. 74 p. 35 cents.

D. Philology and Literature Series

VOLUME I

(Complete in four numbers, with title-page, table of contents, and index.)

No. 1. On the development of American literature from 1815 to 1833, by William B. Cairns. 1898. 4+88 p. 35 cents.

No. 2. The treatment of nature in the poetry of the Roman Republic, by Katharine Allen. 1899. 132 p. 50 cents.

No. 3. The Great Mother of the gods, by Grant Showerman. 1901. 114 p. 4 pl. 45 cents.

No. 4. Wortlehre des Adjectivs im Altsächsischen, by Edwin Carl Roedder. 1901. 82 p. 35 cents.

VOLUME II

(Complete in three numbers, with title-page, table of contents, and index.)

No. 1. The time elements of the Orestean trilogy, by Jonathan Bailey Browder. 1902. 76 p. 35 cents. *Out of print.*

No. 2. Schillers Einfluss auf Grillparzer, eine litterarhistorische Studie, by Otto Edward Lessing. 1902. 128 p. 50 cents.

No. 3. The philosophy of Ernest Renan, by Herman Gustav Adolph Brauer. 1903. 176 p. 50 cents. *Out of print.*

VOLUME III

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