LIBRARIES
UNIVERSITY OF WISCONSIN–MADISON

University of Wisconsin Catalogue. 1911-1912

[Madison, Wisconsin]: [The University], 1911-1912

https://digital.library.wisc.edu/1711.dl/WTMGUPBMKA52P9C

http://rightsstatements.org/vocab/InC/1.0/

The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

When possible, we provide rights information in catalog records, finding aids, and other metadata that accompanies collections or items. However, it is always the user's obligation to evaluate copyright and rights issues in light of their own use.

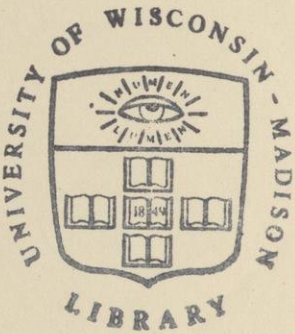
728 State Street | Madison, Wisconsin 53706 | library.wisc.edu

THE

UNIVERSITY OF WISCONSIN

CATALOGUE

1911-1912


UNIVERSITY OF WISCONSIN - MADISON
LIBRARY

1911-12

THE

UNIVERSITY OF WISCONSIN

CATALOGUE

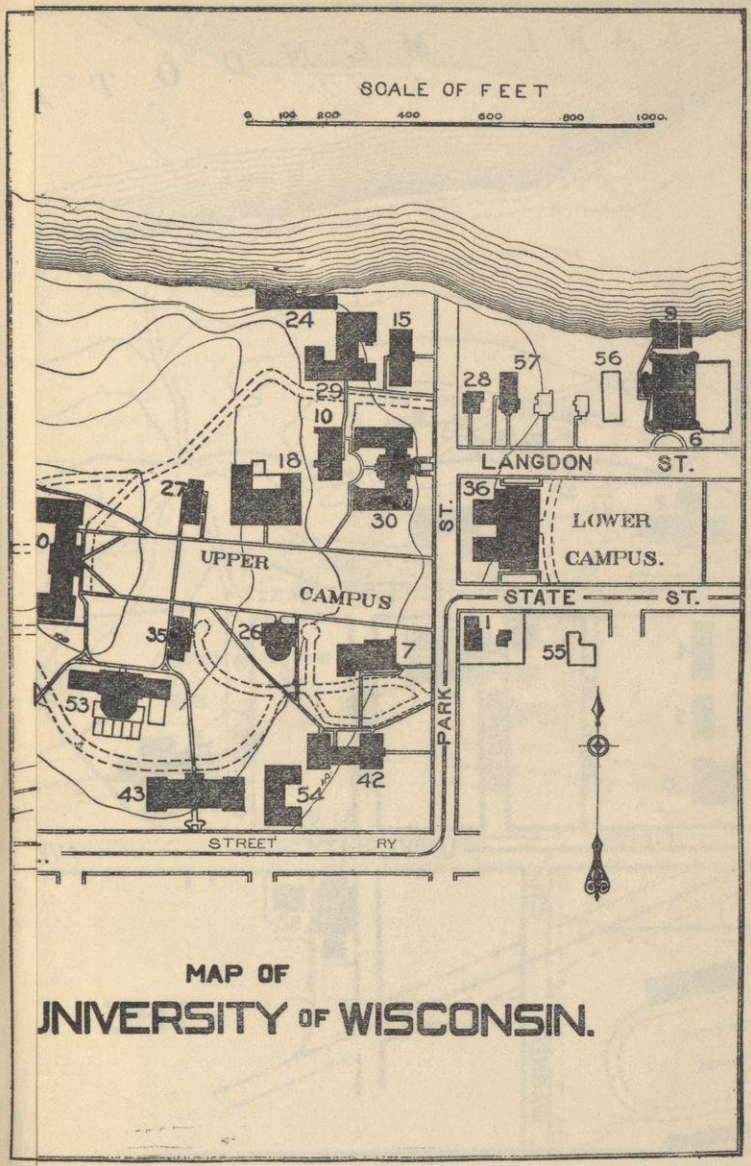
1911–1912

MADISON

1912

Entered as second class matter June 10, 1898, at the postoffice at Madison, Wisconsin, under the act of July 1, 1894

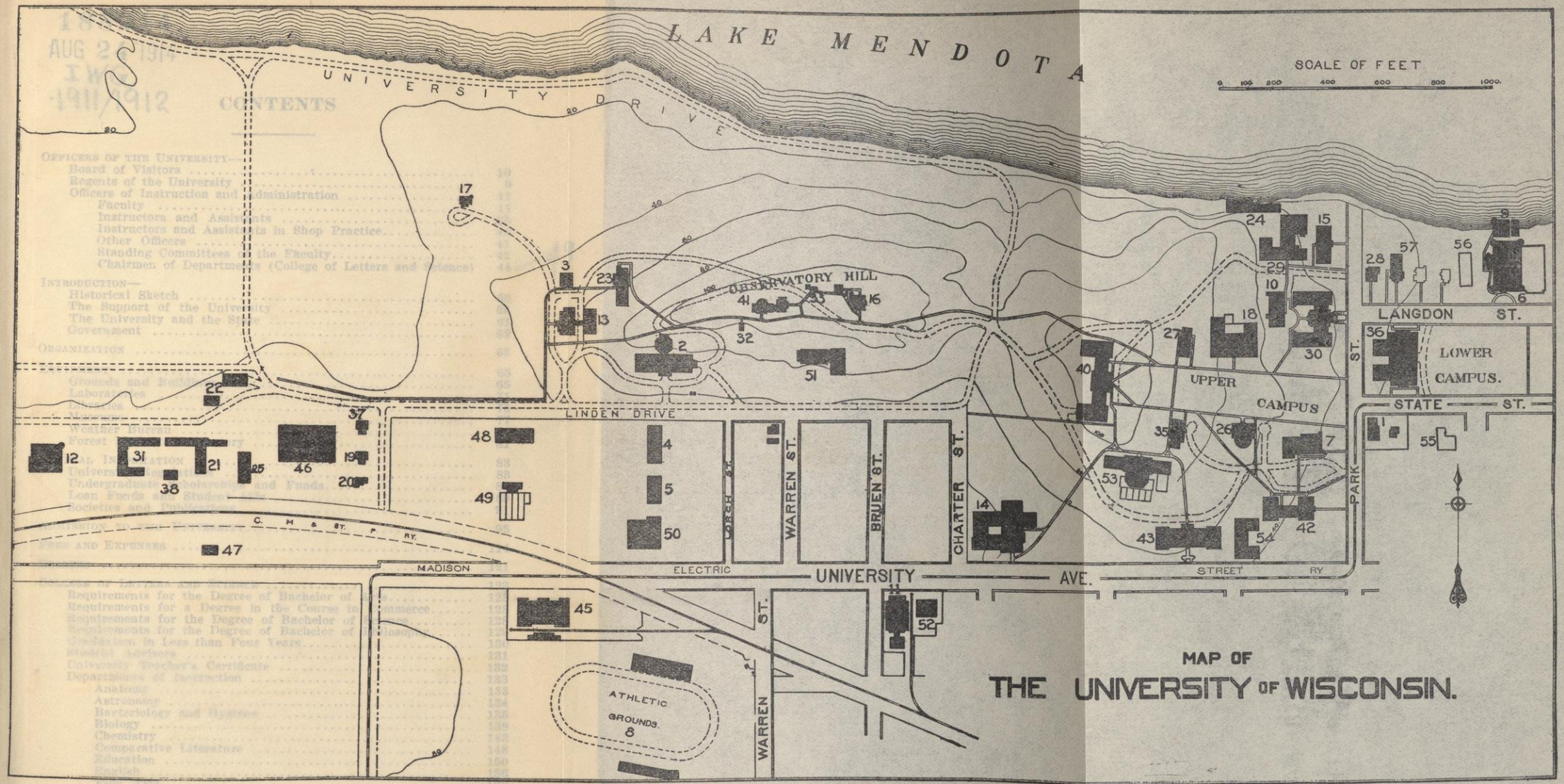
DEMOCRAT PRINTING COMPANY
MADISON, WISCONSIN



MAP OF UNIVERSITY OF WISCONSIN.

Stock Auditorium.
University Hall.
Washburn Observatory.
Chadbourne Hall.
Lathrop Hall.
Forest Products Laboratory.
Animal Husbandry and Live Stock [Pavilion.
Poultry House.
Horticulture.

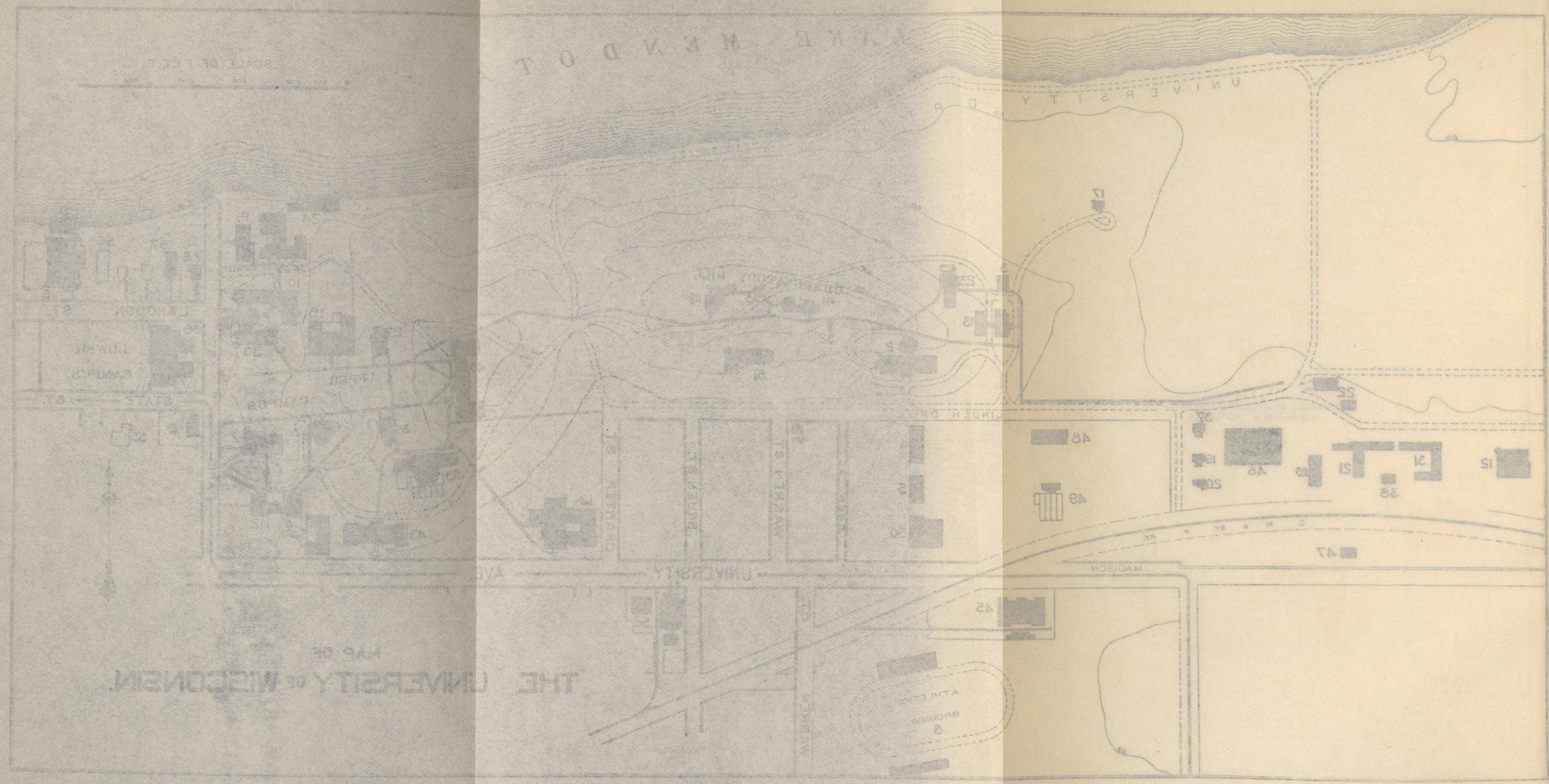
49 Potting House.
50 Agricultural Chemistry.
51 Home Economics.
52 Shop & Storehouse.
53 Biology Building.
54 Women's Dormitory.
55 University Club.
56 Y. M. C. A.
57 Clinical Building.



MAP OF

THE UNIVERSITY OF WISCONSIN.

1 Administration Building.
2 Agricultural Building.
3 Dairy Machinery Laboratory.
4 Agricultural Engineering Building.
5 Agronomy Building.
6 Armory & Gymnasium.
7 Music Hall.
8 Athletic Field—Camp Randall.
9 Boat House.
10 Mining Engineering Laboratory.
11 Central Heating Station.
12 Cow Barn
13 Dairy Building—Hiram Smith Hall.
14 Chemistry Building.
15 Chemical Engineering Building.
16 Residence of Director of Astronomy.
17 Residence of Dean of Agriculture.
18 Engineering Building.
19 Farm Dormitory.
20 Residence of Farm Superintendent.
21 Hog Barn.
22 Service Building.
23 Soil Physics Building.
24 Hydraulic Lab. & Pump House.
25 Wagon Shed.
26 Law Building.
27 North Hall.
28 President's Residence.
29 Engineering Laboratories.
30 Science Hall.
31 Sheep Barns.
32 Solar Observatory.
33 Students' Observatory.
35 South Hall.
36 State Historical Library.
37 Residence of Stock Superintendent.
38 Stock Auditorium.
40 University Hall.
41 Washburn Observatory.
42 Chadbourne Hall.
43 Lathrop Hall.
45 Forest Products Laboratory.
46 Animal Husbandry and Live Stock [Pavilion.
47 Poultry House.
48 Horticulture.
49 Potting House.
50 Agricultural Chemistry.
51 Home Economics.
52 Shop & Storehouse.
53 Biology Building.
54 Women's Dormitory.
55 University Club.
56 Y. M. C. A.
57 Clinical Building.



1 Administration Building.
2 Agricultural Building.
3 Dairy Machinery Laboratory.
4 Agricultural Engineering Building.
5 Armory Building
6 Armory & Gymnasium.
7 Music Hall.
8 Athletic Field—Camp Randall.
9 Boat House.
10 Mining Engineering Laboratory.
11 Central Heating Station.
12 Cow Barn.
13 Dairy Building—Hiram Smith Hall.
14 Chemistry Building.
15 Chemical Engineering Building.
16 Residence of Director of Astronomy.
17 Residence of Dean of Agriculture.
18 Engineering Building.

MAP OF
THE UNIVERSITY OF WISCONSIN.

DEMOCRAT PRINTING COMPANY
MADISON, WISCONSIN

188214
AUG 24 1914
IWG
·1911/1912

CONTENTS

OFFICERS OF THE UNIVERSITY— 49
Board of Visitors 10
Regents of the University 9
Officers of Instruction and Administration 11
Faculty 11
Instructors and Assistants 25
Instructors and Assistants in Shop Practice 40
Other Officers 41
Standing Committees of the Faculty 42
Chairmen of Departments (College of Letters and Science) 44

INTRODUCTION—
Historical Sketch 50
The Support of the University 58
The University and the State 61
Government 62

ORGANIZATION 63

EQUIPMENT 65
Grounds and Buildings 65
Laboratories 71
Libraries 75
Museums 77
Weather Bureau 80
Forest Products Laboratory 81

GENERAL INFORMATION 83
University Regulations 83
Undergraduate Scholarships and Funds 87
Loan Funds and Student Aids 89
Societies and Publications 91

ADMISSION TO THE UNIVERSITY 95

FEES AND EXPENSES 114

DEGREES 121

COLLEGE OF LETTERS AND SCIENCE 123
Requirements for the Degree of Bachelor of Arts 123
Requirements for a Degree in the Course in Commerce 128
Requirements for the Degree of Bachelor of Science 128
Requirements for the Degree of Bachelor of Philosophy 129
Graduation in Less than Four Years 130
Student Advisers 131
University Teacher's Certificate 132
Departments of Instruction 133
Anatomy 133
Astronomy 134
Bacteriology and Hygiene 135
Biology 138
Chemistry 143
Comparative Literature 148
Education 150
English 156
Fine Arts 168
Geology 168
German 175
Greek 189
Hebrew and Hellenistic Greek 192

History 198
Indo-European Comparative Philology 207
Journalism 208
Latin 210
Manual Arts 214
Mathematics 218
Meteorology 224
Music 225
Pathology 228
Pharmacology and Toxicology 228
Pharmacy 229
Philosophy 230
Physical Education 233, 507
Physics 233
Physiology and Physiological Chemistry 238
Political Economy 239
Political Science 250
Public Speaking 255
Romance Languages 258
French 260
Italian 265
Spanish 265
Portuguese 266
Vulgar Latin 267
Scandinavian Languages 267
Zoology 269
Course in Chemistry 274
Course in Commerce 283
Course in Pharmacy 298
Library School 304
Course for the Training of Teachers 310

COLLEGE OF ENGINEERING 328
Requirements for Admission 328
Student Advisers 330
Fees and Expenses 330
Equipment 331
Courses of Study and Degrees 336
Outline of Engineering Courses 340
Departments of Instruction 363

LAW SCHOOL 388
Admission 389
Courses of Instruction 392
Fees and Expenses 396
Summer Session 397

COLLEGE OF AGRICULTURE 399
General Information 399
Fees and Expenses 405
Courses of Instruction 414
The Long Course 406
The Middle Course 406
Course for the Training of Teachers 406
The Summer Session Courses 406
The Short Course 406
The Winter Dairy Course 406
The Summer Dairy Course 407
Extension Courses Given at the University 407
The Farmers' Course in Agriculture 407
The Women's Course in Home Economics 407
The One Week's School in Home Economics 407
The Special Dairy Course 408
The Young People's Course in Agriculture 408
Terms of Admission 408

Fellowships and Scholarships 409
Degrees 410
Certificates 410
Outline of Long Course in Agriculture 410
Outline of Middle Course in Agriculture 412
Departments of Instruction 414
The Wisconsin Agricultural Experiment Station 435
The Farmers' Institutes 436
Courses in Home Economics 436
Facilities for Instruction 437
Terms of Admission 437
Degree 437
Scope of Courses 438
Outline of Long Course in Home Economics 438
Description of Courses 441

THE MEDICAL SCHOOL 444
Admission 444
Choice of Courses 447
Departmental Announcements 454

SCHOOL OF MUSIC 461
Fees 471

THE WASHBURN OBSERVATORY 473

UNIVERSITY EXTENSION DIVISION 475
Correspondence-Study Department 476
Instruction by Lectures 490
Debating and Public Discussion 501
General Information and Welfare 503

PHYSICAL EDUCATION 507

MILITARY SCIENCE AND TACTICS 519

SUMMER SESSION 525

GRADUATE SCHOOL 547

DEGREES AND HONORS CONFERRED, COMMENCEMENT, 1911 562
Baccalaureate Degrees 562
Higher Degrees 570
Honorary Degrees 576
Honors 577

SUMMARY OF GRADUATES 578

STUDENTS 580
Graduates 580
Fellows and Scholars 580
Other Graduates 582
Undergraduates 596
College of Letters and Science 596
School of Music 641
Medical School 649
Course in Pharmacy 650
College of Engineering 651
Law School 667
College of Agriculture 670
Summer Session, 1911 687
Summer Session, Agriculture 725
Summer Session, Engineers 720
Summer Session, Law School 728
Summer Session, Music 719
Summer Dairy School 729
Summary of Students 730
Summary by States, Foreign Countries, and Sex 734

INDEX 737

1912

JANUARY.

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	..	..	..
..	..	..	..	..	..	..

FEBRUARY.

S	M	T	W	T	F	S
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	..	..
..	..	..	..	..	..	..

MARCH.

S	M	T	W	T	F	S
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	..	..	..	..	..	..

APRIL.

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	..	..	..	..
..	..	..	..	..	..	..

MAY.

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
..	..	..	..	..	..	..

JUNE.

S	M	T	W	T	F	S
..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	..	..	..	..	..	..

JULY.

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	..	..	..
..	..	..	..	..	..	..

AUGUST.

S	M	T	W	T	F	S
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
..	..	..	..	..	..	..

SEPTEMBER.

S	M	T	W	T	F	S
1	..	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	..	..	..	..	..
..	..	..	..	..	..	..

OCTOBER.

S	M	T	W	T	F	S
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
..	..	..	..	..	..	..

NOVEMBER.

S	M	T	W	T	F	S
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
..	..	..	..	..	..	..

DECEMBER.

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	..	..	..	..
..	..	..	..	..	..	..

1913

JANUARY.

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
..	..	..	..	..	..	..

FEBRUARY.

S	M	T	W	T	F	S
..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	..
..	..	..	..	..	..	..

MARCH.

S	M	T	W	T	F	S
..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31	..	..	..	..	..

APRIL.

S	M	T	W	T	F	S
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	..	..	..
..	..	..	..	..	..	..

MAY.

S	M	T	W	T	F	S
..	..	..	..	1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
..	..	..	..	..	..	..

JUNE.

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	..	..	..	..	..
..	..	..	..	..	..	..

JULY.

S	M	T	W	T	F	S
..	..	1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31	..	..
..	..	..	..	..	..	..

AUGUST.

S	M	T	W	T	F	S
..	..	..	..	..	1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31	..	..	..	..	..	..

SEPTEMBER.

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	..	..	..	..
..	..	..	..	..	..	..

OCTOBER.

S	M	T	W	T	F	S
..	..	..	1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
..	..	..	..	..	..	..

NOVEMBER.

S	M	T	W	T	F	S
..	..	..	..	..	..	1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	..	..	..	..	..	..

DECEMBER.

S	M	T	W	T	F	S
..	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31	..	..	..
..	..	..	..	..	..	..

CALENDAR

1911

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

1912

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

Commencement Week

June	16	Sunday	Baccalaureate address.
June	17	Monday	Class day exercises.
June	18	Tuesday	Alumni Day.
June	19	Wednesday	Commencement day.

Summer Session

June	24	Monday	Summer session opens.
Aug.	2	Friday	Summer session closes.

THE ACADEMIC YEAR 1912–1913

1912			
Sept.	23–24–25	Mon.–Tu.–Wed.	Registration days.
Sept.	23–24	Mon.–Tu.	Examination for admission.
Sept.	26	Thursday	Lectures and recitations begin.
Nov.	28	Thursday	Thanksgiving Day: legal holiday.
Dec.	20	Friday (noon)	Christmas recess begins.
1913			
Jan.	7	Tues. (8 a. m.)	Exercises resumed.
Jan. 27–Feb.	5	Mon.–Wed.	Final examinations, first semester.
Feb.	6–7	Thur.–Fri.	Registration days.
Feb.	10	Monday	Lectures and recitations begin.
Feb.	22	Saturday	Washington's birthday: legal holiday.
March	20–24	Thur.–Mon.	Easter recess.
May	30	Friday	Memorial Day: legal holiday.
June	7–13	Sat.–Fri.	Final examinations, second semester.
June	12–13	Thur.–Fri.	Examinations for admission.
June	15–18	Sun.–Wed.	Commencement week.

THE REGENTS

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

	TERM EXPIRES
State-at-Large—GILBERT E. SEAMAN, Milwaukee	1913
State-at-Large—D. O. MAHONEY, Viroqua	1917
First District—A. J. HORLICK, Racine	1913
Second District—T. E. BRITTINGHAM, Madison	1914
Third District—J. W. MARTIN, Gotham	1913
Fourth District—THEODORE M. HAMMOND, Wauwatosa	1916
Fifth District—JAMES F. TROTTMAN, Milwaukee	1915
Sixth District—MISS ELIZABETH F. WATERS, Fond du Lac	1915
Seventh District—EDWARD EVANS, LaCrosse	1914
Eighth District—MRS. FLORENCE G. BUCKSTAFF, Oshkosh	1913
Ninth District—ORLANDO E. CLARK, Appleton	1913
Tenth District—GRANVILLE D. JONES, Wausau	1916
Eleventh District—A. P. NELSON, Grantsburg	1917

Officers of the Regents

JAMES F. TROTTMAN, *President.*
A. P. NELSON, *Vice-President.*
A. H. DAHL, *State Treasurer, ex-officio Treasurer.*
H. C. BUMPUS, *Business Manager.*
M. E. MCCAFFREY, *Secretary.*
G. L. GILBERT, *Acting Bursar.*
C. W. FARLIN, *Asst. Purchasing Agent.*

THE BOARD OF VISITORS

1911–1912

State at Large

E. Ray Stevens, Madison.

Dr. L. E. Youmans, Mukwonago.

Congressional Districts

1st District, E. B. Belden, Racine.

2nd District, H. L. Butler, Madison.

3rd District, Richard Meyer, Jr., Lancaster.

4th District, Mrs. Lynn S. Pease, Wauwatosa

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

6th District, M. K. Reilly, Fond du Lac.

7th District, J. J. Brindley, LaCrosse.

8th District, Miss Rose C. Swart, Oshkosh.

9th District, Thomas H. Ryan, Appleton.

10th District, George P. Hambrecht, Grand Rapids.

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

THE OFFICERS OF INSTRUCTION AND ADMINISTRATION

FACULTY

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

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

PARKINSON, JOHN BARBER, M. A., Vice President of the University and Professor of Constitutional and International Law. *Emeritus.* 516 Wisconsin Ave.

ADAMS, THOMAS SEWALL, Ph. D., Professor of Political Economy. *Capitol, Tax Commission.* 303 Lathrop

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

*ALLEN, BENNET MILLS, Ph. D., Assistant Professor of Zoology. *Sc. H.* 61. 710 Conklin Pl.

ALLEN, CHARLES ELMER, Ph. D., Professor of Botany. *Sc. H.* 39. 2014 Chamberlain

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

ALVORD, KATHARINE SPRAGUE, M. A., Mistress of Chadbourne Hall. Chadbourne

---

* On leave of absence, first semester, 1911–12.

*Anderson, Lewis A., B. L., Lecturer in Political Economy. *Capitol.* 170 Summit Ave.

Babcock, Stephen Moulton, Ph. D., LL. D., Assistant Director and Chief Chemist of the Agricultural Experiment Station. Professor of Agricultural Chemistry. *A. H.* 36. 432 Lake

Ball, Collin H. (Captain, U. S. Infantry) Commandant. Professor of Military Science and Tactics. *Armory.* 1922 Jefferson

Bardeen, Charles Russell, B. A., M. D., Dean of the Medical School. Professor of Anatomy. *Sc. H. Room H.* 23 Mendota Ct.

Bassett, Harry Kendall, M. A., Assistant Professor of English. *U. H.* 118. 110 Spooner

Beatty, Arthur, Ph. D., Assistant Professor of English. *U. H.* 363 and 101. 1824 Vilas

Beebe, Murray Charles, B. S., Professor of Electrical Engineering. *E. B.* 206. 520 N. Pinckney

Benkendorf, Gustav Henry, B. S., Assistant Professor of Dairy Husbandry. *H. S. H.* 101. Hiram Smith Hall

Bennett, Edward, E. E., Associate Professor of Electrical Engineering. *Elec. Lab.* 202. 1601 Adams

Birge, Edward Asahel, Ph. D., Sc. D., LL. D., Dean of the College of Letters and Science. *S. H.* 2. 744 Langdon

Blackwelder, Eliot, B. A., Associate Professor of Geology. *Sc. H.* 35. 1632 Jefferson

Bleyer, Willard Grosvenor, Ph. D., Chairman of Course in Journalism. Associate Professor of Journalism. *U. H.* 67. 216 W. Gilman

Boesel, Frank Tilden, Ph. B., LL. B., Lecturer in Law, *L. B.* 3. Milwaukee, Wis.

Bond, Francis Marvin, B. A., B. S., Lecturer in Forestry. *F. P. L.* 620 N. Frances

Bradley, Harold Cornelius, Ph. D., Assistant Professor of Physiological Chemistry. *C. E. B.* 303. 106 Prospect Ave.

---

*Appointed March 29, 1912.

BRUNS, FRIEDRICH, Ph. D., Assistant Professor of German. *N. H.* 35. 423 N. Butler

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

BURGESS, CHARLES FREDERICK, E. E., Professor of Chemical Engineering. *C. E. B.* 103. 116 E. Gorham

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

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

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

CERF, BARRY, Ph. D., Assistant Professor of Romance Languages. *U. H.* 304. 425 Frances

CHASE, WAYLAND JOHNSON, M. A., Associate Professor of History. *U. H.* 209 and 101. 141 Summit Ave.

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

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

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

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

COLE, LEON J., Ph. D., Associate Professor of Experimental Breeding. *A. H.* 53. 1815 University Ave.

‡COMMONS, JOHN ROGERS, M. A., Professor of Political Economy. *N. H.* 52. 224 N. Murray

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

COOL, CHARLES DEAN, Ph. D., Assistant Professor of Romance Languages. *U. H.* 306. 1607 Adams

---

* On leave of absence, academic year, 1912–13.
† On leave of absence, second semester, 1911–12.
‡ On leave of absence, academic year, 1911–12.

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

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

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

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

DAVIS, JOHN JEFFERSON, B. S., M. D., Curator of the Herbarium. *Sc. H.* 51. 411 N. Murray

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

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

DENNISTON, ROLLIN HENRY, Ph. D., Assistant Professor of Botany. *Sc. H.* 51. 310 Prospect Ave.

DICKINSON, THOMAS HERBERT, Ph. D., Associate Professor of English. *U. H.* 365. 212 W. Gilman

DODGE, ROBERT ELKIN NEIL, M. A., Assistant Professor of English. *U. H.* 365. 15 W. Gorham

DOOLITTLE, FREDERICK WILLIAM, C. E., M. S., Assistant Professor of Mechanics. *E. B.* 115. 204 N. Brooks

DOWLING, LINNAEUS WAYLAND, Ph. D., Assistant Professor of Mathematics. *U. H.* 255. 2 Roby Road

DUDGEON, MATTHEW SIMPSON, M. A., LL. B., Director of the Wisconsin Library School. Instructor in Library Administration. Instructor in Political Science. *U. H.* 122. 2028 Monroe

DUDLEY, WILLIAM HENRY, B. A., Assistant Librarian. *Lib.* 1909 Regent

DUNLAP, FREDERICK, F. E., Lecturer in Forestry. *F. P. L.* 408 W. Mifflin

EHLER, GEORGE WOLF, C. E., Director of the Department of Physical Education. Professor of Physical Education. *Gym.* 636 Howard Pl.

ELLIOTT, EDWARD CHARLES, Ph. D., Director of the Course for the Training of Teachers. Professor of Education. *U. H.* 123. 137 Prospect Ave.

---

* On leave of absence, second semester, 1911–12.

ELSOM, JAMES CLAUDE, M. D., Assistant Professor of Physical Education. *Gym.* 1614 Jefferson

ELWELL, FAYETTE HERBERT, B. A., Assistant Professor of Business Administration. *E. B.* 211–214. Milwaukee, Wis.

*ELY, RICHARD THEODORE, Ph. D., LL. D., Professor of Political Economy. *S. H.* 23. 205 Prospect Ave.

EVANS, JOSEPH S., B. A., M. D., Professor of Clinical Medicine. Medical Adviser. 821 *State.* 25 Mendota Ct.

EYSTER, JOHN AUGUSTINE ENGLISH, B. S., M. D., Professor of Physiology. *C. E. B.* 214. 18 Mendota Ct.

FARRINGTON, EDWARD HOLYOKE, M. S., Professor of Dairy Husbandry. *H. S. H.* 301. 444 Charter

FISCHER, RICHARD, Ph. D., Professor of Chemistry. *C. B.* 324. 119 E. Johnson

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

FISKE, GEORGE CONVERSE, Ph. D., Associate Professor of Latin. *U. H.* 267. 625 Mendota Ct.

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

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

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

FULLER, JAMES GARFIELD, B. S., Assistant Professor of Animal Husbandry. *A. H.* 50. 1724 Hoyt

GAGE, OTIS AMSDEN, Ph. D., Assistant Professor of Physics. *Sc. H.* 23. 121 W. Gilman

‡GAY, LUCY MARIA, B. L., Assistant Professor of Romance Languages. *U. H.* 304. 216 N. Pinckney

GIESE, WILLIAM FREDERIC, M. A., Associate Professor of Romance Languages. *U. H.* 304. 1914 Madison

GILBERT, EDWARD MARTINIUS, Ph. B., Assistant Professor of Botany. *Sc. H.* 66. 305 N. Livingston

GILMAN, STEPHEN WARREN, LL. B., Professor of Political Economy. *N. H.* 53. 410 N. Livingston

---

* On leave of absence, first semester, 1911–12.
† On leave of absence, academic year, 1912–13.
‡ On leave of absence, academic year, 1911–12.

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

GODDARD, ARTHUR LAURENCE, B. S., Superintendent of Shops. Assistant Professor of Mechanical Practice. *M. S.* 1717 Monroe

GOODNIGHT, SCOTT HOLLAND, Ph. D., Assistant Professor of German. Director of the Summer Session. *N. H.* 37. 2130 W. Lawn Ave.

GRIFFITH, EDWARD MERRIAM, State Forester. Lecturer in Forestry. *Capitol*, East Wing. 205 S. Hamilton

GUYER, MICHAEL F., Ph. D., Professor of Zoology. *Sc. H.* 62. 212 Howard Pl.

HADLEY, FREDERICK BROWN, D. V. M., Associate Professor of Veterinary Science. *Stock Pavilion.* 421 Lake

HAERTEL, MARTIN HENRY, Ph. D., Assistant Professor of German. *N. H.* 33. 1927 W. Lawn Ave.

HALL, ARNOLD BENNETT, B. A., J. D., Assistant Professor of Political Science. *U. H.* 321. 310 Murray

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

HALPIN, JAMES GARFIELD, B. S., Associate Professor of Poultry Husbandry. *A. H.* 48. R. F. D. No. 7

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

HART, WALTER WILSON, B. A., Assistant Professor of Mathematics. *U. H.* 253. 2010 Monroe

HASTINGS, EDWIN GEORGE, M. S., Associate Professor of Agricultural Bacteriology. *A. H.* 35. 1906 W. Lawn Ave.

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

HAVARD, FRANCIS THOMPSON, E. M., Associate Professor of Mining and Metallurgy. *E. B.* 211. 1811 Kendall Ave.

HAWLEY, LEE FRED, Ph. D., Lecturer in Forestry. *F. P. L.* 23. 420 Charter

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

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

HESS, RALPH HENRY, Ph. D., Assistant Professor of Political Economy. *N. H.* 80. 237 Langdon

HETHERINGTON, CLARK WILSON, B. A., Lecturer, Department of Physical Education. *Gym.* 803 State

HOFFMANN, CONRAD, B. S., Assistant Professor of Agricultural Bacteriology. *A. H.* 35. 1708 Jefferson

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

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

HOLMES, SAMUEL JACKSON, Ph. D., Assistant Professor of Zoology. *Sc. H.* 57. 1615 Summit Ave.

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

HUBBARD, FRANK GAYLORD, Ph. D., Professor of the English Language. *U. H.* 355. 425 Sterling Ct.

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

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

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

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

*JASTROW, JOSEPH, Ph. D., Professor of Psychology. *U. H.* 12. 237 Langdon

JONES, BURR W., M. A., LL. B., Professor of Law. *L. B.* 112 Langdon

JONES, EDWARD RICHARD, M. S., Assistant Professor of Soils. *S. B.* 208. 1727 Madison

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

---

* On leave of absence, second semester, 1912–13.

*Juday, Chancey, M. A., Lecturer in Zoology. *Sc. H.* 43. 35 Lathrop

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

Kelly, Frederick Thomas, Ph. D., Assistant Professor of Hebrew and Hellenistic Greek. *S. H.* 7. 224 N. Brooks

Keown, Robert McArdle, B. S., Assistant Professor of Machine Design. *E. B.* 227. 118 Spooner

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

Kind, John Louis, Ph. D., Assistant Professor of German. Secretary of the Department. *N. H.* 27. 425 Sterling Ct.

Kinne, William Spaulding, B. S., Assistant Professor of Structural Engineering. *E. B.* 311. 271 Langdon

Kowalke, Otto Louis, Ch. E., Assistant Professor of Chemical Engineering. *C. E. B.* 111. 808 Oakland Ave.

Krauskopf, Francis Craig, Ph. D., Assistant Professor of Chemistry. *C. B.* 107. 1915 W. Lawn Ave.

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

Laird, Arthur Gordon, Ph. D., Associate Professor of Greek and Comparative Philology. *U. H.* 263. 21 Mendota Ct.

Lathrop, Henry Burrowes, B. A., Associate Professor of English. *U. H.* 355. 209 S. Henry

Lee, Carl Emil, M. S., Assistant Professor of Dairy Husbandry. *H. S. H.* 104. 1615 Jefferson

Leith, Charles Kenneth, Ph. D., Professor of Geology. *Sc. H.* 32. 240 Langdon

Lenher, Victor, Ph. D., Professor of Chemistry. *C. B.* 203. 158 Summit Ave.

---

* On leave of absence, second semester, 1911–12.

*Leonard, William Ellery, Ph. D., Assistant Professor of English. *U. H.* 366. 22 Prospect Ave.

Lighty, William Henry, Ph. D., Secretary, Correspondence-Study Department, University Extension. *U. H.* 154. 2006 Monroe

Lloyd-Jones, Chester, Ph. D., Associate Professor of Political Science. *U. H.* 319. 412 N. Carroll

Locke, Arthur Ware, B. A., Assistant Professor of Music. *M. H.* 5. 625 Mendota Ct.

Loevenhart, Arthur Solomon, M. S., M. D., Professor of Pharmacology and Toxicology. *C. E. B.* 300. 1633 Jefferson

Lorenzen, Ernest Gustav, Ph. B., LL. B., J. U. D. Professor of Law. *L. B.* 124 Breese Terrace

Ludy, Llewellyn V., M. E., Acting Professor of Steam and Gas Engineering. *E. B.* 223. 271 Langdon

Luening, Eugene, Associate Professor of Music. *M. H.* 16. 1606 Madison

†Lyman, Rollo Lu Verne, B. A., Associate Professor of Rhetoric and Oratory. *U. H.* 204.

McBain, Howard Lee, Ph. D., Associate Professor of Political Science. *U. H.* 319. 308 N. Carroll

McCarthy, Charles, Ph. D., Lecturer in Political Science. *Capitol* 417. 321 W. Wilson

McCollum, Elmer Verner, Ph. D., Associate Professor of Agricultural Chemistry. *A. H.* 59. 1910 Adams

McGilvary, Evander Bradley, Ph. D., Professor of Philosophy. *U. H.* 108. 1902 Arlington Pl.

McKerrow, George, Superintendent of Farmers' Institutes. *A. H.* 22. 107 S. Butler

Mack, John Givan Davis, M. E., Professor of Machine Design. *E. B.* 225. 110 E. Johnson

March, Herman William, Ph. D., Assistant Professor of Mathematics. *U. H.* 65. 625 Langdon

Marlatt, Abby Lillian, M. S., Professor of Home Economics. *Lathrop.* 212 Howard Pl.

Marshall, William Stanley, Ph. D., Associate Professor of Entomology. *Sc. H.* 58. 139 E. Gilman

---

* On leave of absence, first semester, 1911–12.
† On leave of absence, academic year, 1911–12.

MARTIN, LAWRENCE, M. A., Assistant Professor of Physiography and Geography. *Sc. H.* 26. 135 W. Gilman

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

MATHEWS, JOSEPH HOWARD, Ph. D., Assistant Professor of Chemistry. *C. B.* 317. 237 Langdon

MATHEWS, LOIS KIMBALL, Ph. D., Dean of Women. Associate Professor of History. *Lathrop.* 212 Howard Pl.

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

MAYHEW, ABBY SHAW, Assistant Professor of Physical Education. *Lathrop.* 310 N. Brooks

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

MEAD, WARREN JUDSON, M. A., Assistant Professor of Geology. *Sc. H.* 27A. 922 Van Buren

MEANWELL, WALTER ERNEST, M. D., Assistant Professor of Physical Education. *Gym.* 502 N. Henry

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

MENDENHALL, CHARLES ELWOOD, Ph. D., Professor of Physics. *Sc. H.* 17. 510 N. Carroll

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

MILLER, ERIC REXFORD, Local Forecaster, U. S. Weather Bureau. Lecturer in Meteorology. *N. H.* 84. 1120 W. Johnson

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

MILWARD, JAMES GARFIELD, M. S., Assistant Professor of Horticulture. *H. B.* 118. 1818 Madison

MOORE, JAMES GARFIELD, M. S., Associate Professor of Horticulture. *H. B.* 106. 809 Grant

MOORE, RANSOM ASA, Professor of Agronomy. *Agron. B.* 28. 201 S. Warren

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

---

* On leave of absence, second semester, 1911–12.

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

NEYSTROM, PAUL HENRY, Ph. M., Assistant Professor of Political Economy, Extension Division. District Representative. *Castle-Pierce Bldg., Oshkosh.* 27 High St., Oshkosh

NEWLIN, JOHN A., B. S., Lecturer in Forestry. *F. P. L.* 1027 Drake

NORGORD, CHRISTIAN PERCIVAL, B. S., Assistant fessor of Agronomy. *Agron. B.* 24. 1212 W. Johnson

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

OCOCK, CHARLES ALBERT, B. S., Assistant Professor of Agricultural Engineering *A. E. B.* 108. R. F. D. No. 6.

OLSON, JULIUS EMIL, B. L., Professor of Scandinavian Languages and Literature. *U. H.* 60. 1012 E. Gorham

O'SHEA, M. VINCENT, B. L., Professor of Education. U. H. 120. 140 Langdon

OTIS, DANIEL HENRY, M. S., Assistant Dean, College of Agriculture. Professor of Farm Management. *A. H.* 31. 1716 Jefferson

OVERTON, JAMES BERTRAM, Ph. D., Assistant Professor of Botany. *Sc. H.* 44. 512 Wisconsin Ave.

OWEN, EDWARD THOMAS, Ph. D., Professor of French and Linguistics. *U. H.* 307. 614 State

PARKER, FLETCHER ANDREW, Professor of Music, *Emeritus. M. H.* 4. 14 W. Gilman

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

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

PETERSON, PETER POWELL, Ph D., Assistant Professor of Soils. *S. B.* 305. 932 Clymer Pl.

PETTIJOHN, JOHN J., Secretary, Department of Instruction by Lectures, University Extension. *U. H.* 101. 1712 Jefferson

PHILLIPS, JAMES DAVID, B. S., Assistant Dean, College of Engineering. Professor of Drawing. *E. B.* 303. 1925 W. Lawn Ave.

PRICE, JOHN REESE, B. S., Assistant Professor of Electrical Engineering. *Elec. Lab.* 1818 Chadbourne Ave.

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

PURIN, CHARLES MALTADOR, M. A., Assistant Professor of German. *N. H.* 33. 1609 Monroe

PYRE, JAMES FRANCIS AUGUSTINE, Ph. D., Associate Professor of English. *U. H.* 367. 1918 W. Lawn Ave.

*RASTALL, BENJAMIN MCKEE, Ph. D., Associate Professor of Business Administration. 204 N. Brooks

RAVENEL, MAZYCK PORCHER, M. D., Director of the State Hygienic Laboratory. Professor of Bacteriology. *S. H.* 21 and 48. *A. H.* 35 419 Sterling Ct.

REBER, LOUIS EHRHART, M. S., Sc. D., Dean, University Extension Division. *U. H.* 157. 419 Sterling Ct.

REED, FRANK OTIS, Ph. D., Assistant Professor of Romance Languages. *U. H.* 306. 1910 Jefferson

REINHARD, EUGENE, Ph. D., LL. D., Assistant Professor of German. *U. H.* 104. 446 N. Charter

*REINSCH, PAUL SAMUEL, Ph. D., Professor of Political Science. *Lib.* 121. 423 Wisconsin Ave.

RICHARDS, HARRY SANGER, LL. B., LL. D., Dean of the Law School. Professor of Law. *L. B.* 640 Frances

RICHARDS, JOHN R., B. L., Assistant Professor of Physical Education. *Gym.* 627 Mendota Ct.

ROE, FREDERICK WILLIAM, Ph. D., Assistant Professor of English. Chairman of Freshman Advisers. *U. H.* 107. 218 W. Gilman

ROEDDER, EDWIN CARL LOTHAR CLEMENS, Ph. D., Associate Professor of German Philology. *N. H.* 26. 1627 Jefferson

ROOT, WINFRED TREXLER, Ph. D., Assistant Professor of History. *Lib.* 123. 423 Wisconsin Ave.

ROSEMAN, WILLIAM PACKARD, District University Extension Representative. *Longfellow Bldg.*, La Crosse. 403 Madison Ct, La Crosse

---

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

ROSS, EDWARD ALSWORTH, Ph. D., LL. D., Professor of Sociology. *S. H.* 24. 1941 Arlington Pl.

RUSSELL, HARRY LUMAN, Ph. D., Dean of the College of Agriculture. Director of the Agricultural Experiment Station. *A. H.* 30. University Farm

SAMMIS, JOHN LANGLEY, Ph. D., Assistant Professor of Dairy Husbandry. *H. S. H.* 303A. 234 Breese Terrace

SANBORN, JOHN BELL, Ph. D., Lecturer in Law. 1010 Grant

SANDERS, JAMES GLOSSBRENNER, M. A., Associate Professor of Economic Entomology. State Entomologist and Nursery Inspector. *Dairy Annex.* 212 Howard Pl.

SCHLATTER, EDWARD BUNKER, Ph. D., Assistant Professor of Romance Languages. *U. H.* 307. 1619 Jefferson

†SCOTT, WILLIAM AMASA, Ph. D., LL. D., Director of the Course in Commerce. Professor of Political Economy. *N. H.* 53. 222 Spooner

SELLERY, GEORGE CLARKE, Ph. D., Professor of History. *U. H.* 209. Van Hise and Prospect

SHARP, FRANK CHAPMAN, Ph. D., Professor of Philosophy. *U. H.* 106. 27 Mendota Ct.

SHEALY, EDWARD MARVIN, B. S., Assistant Professor of Steam Engineering. *U. H.* 403. 1934 Monroe

SHOWERMAN, GRANT, Ph. D., Professor of Latin. *U. H.* 266. 410 N. Butler

SHUSTER, JOHN WESLEY, B. S., Assistant Professor of Electrical Engineering. *E. B.* 203. 102 Spooner

SKINNER, ERNEST BROWN, Ph. D., Associate Professor of Mathematics. *U. H.* 255. 210 Lathrop

SLAUGHTER, MOSES STEPHEN, Ph. D., Professor of Latin. *U. H.* 267. 633 Frances

SLICHTER, CHARLES SUMNER, M. S., Professor of Applied Mathematics. *U. H.* 254. 636 Frances

SMITH, CHARLES FORSTER, Ph. D., LL. D., Professor of Greek and Classical Philology. *U. H.* 263. 1715 Kendall Ave.

---

† On leave of absence, second semester, 1911–12.

*Smith, Howard Leslie, B. A., LL. B., Professor of Law.

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

Smith, Kenneth Gardner, B. A., B. S., Assistant Professor of Mechanical Engineering. District University Extension Representative. *E. B.* 301–303, Milwaukee. 133 Second St., Milwaukee

Smith, Leonard Sewall, C. E., Associate Professor of Topographic and Geodetic Engineering. *E. B.* 107. 939 University Ave.

Smith, Walter McMynn, B. A., Librarian. *Lib.* 222. 131 W. Gilman

Snow, Benjamin Warner, Ph. D., Professor of Physics. *Sc. H.* 17. 221 Langdon

Steidtmann, Edward, Ph. D., Assistant Professor of Geology. *Sc. H.* 27C. 1610 Madison

Sterling, Susan Adelaide, M. L., Assistant Professor of German. *N. H.* 31. 109 W. Washington Ave.

Stone, Alden Lescombe, Assistant Professor of Agronomy. *Agron. B.* 29. 1614 Hoyt

Surface, Henry E., Ch. E., Lecturer in Forestry. *F. P. L.* 425 N. Park

Taylor, Henry Charles, Ph. D., Professor of Agricultural Economics. *A. H.* 51A. R. F. D. No. 5

Terry, Earle Melvin, Ph. D., Assistant Professor of Physics. *Sc. H.* 9. 1127 Bowen Ct.

*Thomas, Carl Clapp, M. E., Professor of Steam Engineering.

Thorkelson, Halsten Joseph Berford, M. E., Associate Professor of Steam Engineering. *E. B.* 224. 1526 W. Washington Ave.

Thwaites, Reuben Gold, LL. D., Lecturer in History. *Lib.* 205. R. F. D. 4 [Turvill Wood]

Tiemann, Harry Donald, M. E., M. F., Lecturer in Forestry. *F. P. L.* 135 Prospect Ave.

---

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

*Tottingham, William Edward, M. S., Assistant Professor of Agricultural Chemistry. *A. H.* 6A. 414 N. Henry

Tressler, Albert Willis, B. A., Inspector of Schools. *U. H.* 119. 2 W. Gorham

†Turneaure, Frederick Eugene, C. E., Dean of the College of Engineering. *E. B.* 112. 166 Prospect Ave.

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

Van Hagan, Leslie Flanders, B. S., Assistant Professor of Railway Engineering. *E. B.* 304. 1629 Jefferson

Van Valzah, Robert, B. A., M. D., Assistant Professor of Clinical Medicine. 821 *State.* 21 Mendota Ct.

Van Vleck, Edward Burr, Ph. D., LL. D., Professor of Mathematics. *U. H.* 254. 519 N. Pinckney

Voss, Ernst Karl Johann Heinrich, Ph. D., Professor of German Philology. *N. H.* 26. 446 N. Charter

Wagner, George, M. A., Assistant Professor of Zoology. *Sc. H.* 50. 1901 Jefferson

Walton, James Henry, Jr., Ph. D., Associate Professor of Chemistry. *C. B.* 108. 419 Sterling Ct.

Ward, Edward Joshua, M. A., Adviser, Bureau of Civic and Social Center Development, University Extension. *U. H.* 101. 144 Breese Terrace

Watson, James Webster, B. S., Assistant Professor of Electrical Engineering. *E. B.* 202. 612 Howard Pl.

Watts, Oliver Patterson, Ph. D., Assistant Professor of Applied Electrochemistry. *C. E. B.* 204. 418 S. Mills

Weiss, Howard Frederick, Ph. B., Assistant Director of the Forest Products Laboratory. Lecturer in Forestry. *F. P. L.* 3. 803 State

Westermann, William Linn, Ph. D., Associate Professor of History. *U. H.* 207. 21 Mendota Ct.

Whitbeck, Ray Hughes, B. A., Associate Professor of Physiography and Geography. *Sc. H.* 38. 108 Spooner

---

* On leave of absence, academic year, 1912–13.
† On leave of absence, first semester, 1912–13.

WHITSON, ANDREW ROBISON, B. S., Professor of Soils. *S. B.* 205. R. F. D. 7

WILCE, JOHN WOODWORTH, B. A., Manager of Athletics. Assistant Professor of Physical Education. *Gym.* 217 N. Carroll

WILLIAMS, WILLIAM HOLME, B. A., Professor of Hebrew and Hellenistic Greek. *S. H.* 8. 15 W. Dayton

WINCHELL, ALEXANDER NEWTON, D. Sc., Professor of Mineralogy and Petrology. *Sc. H.* 31. 218 N. Park

WINSLOW, CARLILE P., Ph. B., Lecturer in Forestry. *F. P. L.* 803 State

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

WOLFENSON, LOUIS BERNARD, Ph. D., Assistant Professor of Hebrew and Hellenistic Greek. *S. H.* 7. 1620 Madison

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

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

*WOOLLEY, EDWIN CAMPBELL, Ph. D., Assistant Professor of English. *U. H.* 351. 1716 Hoyt

†YOUNG, KARL, Ph. D., Associate Professor of English. *U. H.* 354. 616 N. Carroll

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

INSTRUCTORS AND ASSISTANTS

ADAMS, ALBERT P., Assistant in Music. *M. H.* 7. Delafield, Wis.

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

ALLEN, FLORENCE ELIZA, Ph. D., Instructor in Mathematics. *U. H.* 253. 219 Lathrop

---

* On leave of absence, second semester, 1911–12.
† On leave of absence, first semester, 1911–12.

ANDRESSOHN, JOHN CARL, M. A., Assistant in German. *N. H.* 36. 301 N. Bruen

ARMSTRONG, VERMILLION ALBERTIE, Assistant in Bacteriology. *S. H.* 22. 1124 W. Johnson

ARON, ALBERT WILLIAM, M. A., Instructor in German. *N. H.* 36. 1713 Adams

ASHMUN, MARGARET ELIZA, M. A., Instructor in English. *U. H.* 361. 625 Mendota Ct.

ASTON, JAMES, Ch. E., Instructor in Chemical Engineering. *C. E. B.* 103. 138 Prospect Ave.

ATKINS, WILLIAM GARRETT, Battalion Sergeant Major, U. S. Army, Retired. Assistant to Commandant and Armorer. *Armory* 11. 1227 Mound

AVERILL, GEORGE B., JR., B. A., Instructor in Business Administration. *E. B.* 301–303. 133 Second St., Milwaukee, Wis.

AYER, MARY LUCILE, B. A., Assistant in Physical Education. *Lathrop.* 230 N. Brooks

BACHMAN, FREDA MARIE, M. A., Assistant in Botany and Plant Pathology. *Sc. H.* 54. 310 N. Bruen

BAER, ARTHUR CHRISTOPHER, B. S., Assistant in Dairy Husbandry. *Dairy Annex.* 420 N. Charter

BAILEY, GEORGE DAVIS, Student Assistant in Business Administration. *N. H.* 82. 521 N. Henry

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

BAKER, ROSS ALLEN, M. A., Assistant in Chemistry. *C. B.* 105. 1104 W. Johnson

BALCH, LELAND RELLA, C. E., Research Assistant in Hydraulics. *Hyd. Lab.* 708 Langdon

BANNING, BERNICE THORNTON, M. A., Assistant in Greek. *U. H.* 263. 625 Mendota Ct.

BARNEBEY, OSCAR LEONARD, M. A., Instructor in Chemistry. *C. B.* 209. 408 N. Frances

BARTHOLOMEW, ELBERT T., B. A., Instructor in Botany. *Sc. H.* 65. 542 W. Johnson

BASCOM, LELIA, M. A., Instructor in English. *U. H.* 361 and 101. 237 Langdon

BAUMGARTNER, EDWIN A., M. A., Instructor in Anatomy. *Sc. H.* Room C. 707 State

BEACH, BURR A., D. V. M., Instructor in Agricultural Bacteriology. *A. H.* 37. 202 N. Brooks

BEAN, ERNEST F., M. A., Instructor in Geology. *Sc. H.* 27. 133 N. Lake

BEATY, JOHN YOCUM, Agricultural Editor. Instructor in Agricultural Journalism. *A. H.* 26. 211 Highland Ave.

*BECK, CARL, Assistant and Field Organizer. 145 W. Gilman

BEECHER, BENJAMIN SANFORD, M. A., Assistant in Political Economy. *S. H.* 28. 230 W. Gilman

BELL, HERBERT CLIFFORD, Ph. D., Instructor in History. *U. H.* 206. 803 State

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

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

BERGMAN, MINNIE LOUISE, Instructor in Music. *M. H.* 6. 208 N. Few

†BERNSTEIN, ISAAC, Trainer, Department of Physical Education.

BIRD, FRANCIS HENRY, M. A., Assistant in Political Economy. *Lib.* 118. 150 Langdon

BIRGE, RAYMOND THAYER, M. A., Assistant in Physics. *Sc. H.* 13. 610 Lake

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

BOHANNAN, CHARLES D., B. A., Assistant in Education. *U. H.* 120. 2034 Rusk

BONNELL, JOHN KESTER, M. A., Instructor in English. *U. H.* 366. 212 Howard Pl.

BRIDGHAM, JOHN MERRILL, M. A., Assistant in Latin. *U. H.* 267. 308 Breese Terrace

BUCHEN, GUSTAVE WILLIAM, B. A., Instructor in Public Speaking. *U. H.* 204. 625 Frances

BURCHARD, CHARLES WINFIELD, M. A., Assistant in Chemistry. *C. B.* 105. 1029 University Ave.

BURDETT, HARRY HECTOR, Instructor in Physical Education. *Gym.* 2318 Jackson

---

* Appointed March 13, 1912.
† Resigned December 1, 1911.

BURGESS, HORACE THOMAS, Ph. D., Instructor in Mathematics. *U. H.* 65. 812 W. Dayton

BURGESS, KENNETH FARWELL, B. A., Assistant in Business Administration. 116 E. Gorham

BURRILL, ALFRED CUMMINGS, B. S., Instructor in Economic Entomology. Deputy Nursery and Orchard Inspector. *Dairy Annex.* 2120 W. Lawn Ave.

BURRITT, CHARLES GLENN, B. S., Instructor in Railway Engineering. *E. B.* 220. 419 Sterling Ct.

BURTON, ANNA LIVINGSTON, B. S., Assistant in Botany. *Sc. H.* 47. 539 W. Main

BUTLER, ORMOND ROURKE, Ph. D., Instructor in Horticulture. *H. B.* 107. 419 Sterling Ct.

BYARS, LUTHER PARRIS, B. S., Assistant in Botany. *Sc. H.* 49. 316 N. Park

CAMPBELL, LILY BESS, M. A., Instructor in English. *U. H.* 351. 419 Sterling Ct.

CAMPBELL, OSCAR JAMES, JR., Ph. D., Instructor in English. *U. H.* 367. 205 Prospect Ave.

CARLETON, PAUL WHITTIER, Ph. D., Instructor in Chemistry. *C. B.* 214. 413 E. Johnson

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

CARR, MURIEL BOTHWELL, M. A., Instructor in English. *U. H.* 363. 616 Lake

CARSON, WILLIAM WALLACE, M. A., Assistant in History. *U. H.* 210. 740 Langdon

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

CAST, GOTTLOB C., M. A., Assistant in German. *N. H.* 36. 452 W. Johnson

CATTELL, JAMES LLEWELLYN, B. A., Instructor in Romance Languages. *U. H.* 308. 271 Langdon

CLEARY, GEORGE EDWARD, B. A., Assistant in Business Administration. *N. H.* 82. 625 Frances

CLEMENTS, GUY ROGER, M. A., Instructor in Mathematics. *U. H.* 253. 15 S. Bassett

COPP, WAYLAND JOHN, B. S., Instructor in Machine Design. *E. B.* 227. 118 Spooner

COTTON, WILLIAM JACOBS, B. A., Assistant in Chemistry. *C. B.* 105. 215 N. Bruen

COUSINS, CLARENCE EDWIN, M. A., Assistant in Romance Languages. *U. H.* 324. 1814 Madison

CRAIGO, RALPH THURMAN, B. S., Instructor in Mathematics. *U. H.* 101. 627 Lake

CURTIS, ROY EMERSON, M. A., Assistant in Political Science. *U. H.* 324. 306 Breese Terrace

CUSHMAN, WILLIAM HOWENSTINE, B. A., Assistant in Mathematics. *U. H.* 65. 627 Mendota Ct.

CUTLER, JOSEPH ALBERT, B. S. Instructor in Topographic Engineering. *E. B.* 53. 419 Sterling Ct.

DAHM, THOMAS MATTHEW, M. A., Assistant in Physics. *Sc. H.* 11. 431 W. Johnson

DAVID, CHARLES WENDELL, B. A., Assistant in History. *Lib.* 123. *U. H.* 210. 424 N. Pinckney

DE BRA, WALTER BROWN, B. S., Assistant in Physics. *Sc. H.* 23. 608 W. Dayton

DEIHL, JOSEPH DWIGHT, B. A., Instructor in German. *N. H.* 36. 2137 Keyes Ave.

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

DENNY, GRACE GOLDENA, B. A., Instructor in Home Economics. *Lathrop* 407. 444 N. Warren

DIETRICHSON, GERHARD, B. A., B. S., Assistant in Chemistry. *C. B.* 105. 901 University Ave.

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

*DOLL, EDGAR A., B. A., Assistant in Philosophy. *U. H.* 18. 248 Langdon

DONDO, MATHURIN MARIUS, M. A., Instructor in Romance Languages. *U. H.* 304. 617 State

DONNELLY, WILL, Assistant in Physical Education. *Gym.* 1109 University Ave.

†DONOVAN, KATHERINE, M. S., Assistant in Home Economics. *Lathrop.* 339 W. Washington Ave.

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

---

* Appointed December 29, 1911.
† Appointed February 24, 1912.

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

EASTMAN, IRENE BELLE, Mus. B., Instructor in Music. *M. H.* 4. 419 Sterling Ct.

EATON, EPHRAIM LLEWELLYN, D. D., Instructor in Astronomy. 420 Lake

EDWARDS, RICHARD HENRY, M. A., Editor, Studies in Social Problems. 422 N. Murray

ELLINGSON, EMIL OSCAR, M. A., Instructor in Chemistry. *C. B.* 106. 1204 W. Washington Ave.

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

ERNST, FREDERIC, M. A., Assistant in Romance Languages. *U. H.* 324. 617 State

EVANS, FRANK CARADOC, M. A., Assistant in Chemistry. *C. B.* 105. 271 Langdon

FABER, DANIEL CLEVELAND, E. E., Instructor in Electrical Engineering. *Longfellow Bldg., La Crosse.* 816 Cass St., La Crosse, Wis.

FASTEN, NATHAN, B. S., Assistant in Zoology. *Sc. H.* 104 Lathrop

FEISE, RICHARD ERNST. Ph. D., Instructor in German. *N. H.* 36. 1011 Edgewood Ave.

FIFIELD, RUTH ALDEN, M. A., Assistant in English. *U. H.* 361. 419 Sterling Ct.

FINCH, VERNOR CLIFFORD, B. S., Assistant in Geology. *Sc. H.* 27A. 108 Spooner

FINLEY, LOVETTE ROWLAND, Instructor in Physical Education. *Gym.* 406 Murray

FINNER, EWALD REINHARD, B. S., Assistant in Soils. *S. B.* 105. Soils Building

FOERSTER, NORMAN, B. A., Instructor in English. *U. H.* 351. 847 Prospect Pl.

FORSYTHE, WILLIAM ELMER, Ph. D., Instructor in Physics. *Sc. H.* 9A. 445 W. Dayton

FOX, EDGAR WILSON, Assistant in Dairy Husbandry. *Dairy Barn.* University Farm

FOX, LEONARD PETER, B. A., Assistant in History. *U. H.* 210. 210 N. Brooks

Fox, Lucy Wells, B. A., Assistant in Bacteriology. *S. H.* 22. 250 Langdon

*Frazer, George Enfield, B. A., Instructor in Business Administration. *U. H.* 320. 615 Lake

Frey, Benjamin, Assistant in Mechanical Engineering. *E. B.* 301–303. 133 Second St., Milwaukee, Wis.

Fulcher, Gordon Scott, Ph. D., Instructor in Physics. *Sc. H.* 13. 616 Lake

Fuller, William John, B. A., Assistant in Structural Engineering. *U. H.* 101. 541 W. Main

Galland, Joseph Stanislaus, M. A., Instructor in Romance Languages. *U. H.* 101. 216 N. Brooks

Galpin, Charles Josiah, M. A., Lecturer on Country Life. *A. H.* 51. 209 W. Gilman

Gardner, Edward Hall, M. A., Instructor in English. *U. H.* 204. 1924 Kendall Ave.

Garner, Harrison Levi, C. E., Instructor in Hydraulic and Sanitary Engineering. *E. B.* 219. 211 N. Murray

Gasser, Herbert Spencer, M. A., Assistant in Physiology. *C. E. B.* 211. 226 W. Gilman

von Geltch, Waldemar, Mus. B., Instructor in Music. *M. H.* 7. 18 W. Gilman

Gillett, Orson Clarke, B. A., University Editor. *U. H.* 61. 1615 Summit Ave.

Gilman, Joseph Charles, Assistant in Plant Pathology. *A. H.* 45B. 723 University Ave.

Glaettli, John, Jr., B. S., Instructor in Structural Engineering. *E. B.* 309. 207 N. Mills

†Glascock, Hardin Roads, B. A., Assistant in Zoology. *Sc. H.* 63. 403 N. Murray

Glover, Louis Earle, B. S., Research Assistant in Electrical Engineering. *E. B.* 207. 345 W. Washington Ave.

Graber, Laurence Frederick, B. S., Assistant in Agronomy. *Agron. B.* 31. 417 Sterling Ct.

Grady, Julia Ricketts, Assistant in Home Economics. *Lathrop* 408. 810 E. Gorham

---

* On leave of absence, second semester, 1911–12.
† Appointed January 27, 1912.

GRAY, FRANK, B. S., Assistant in Physics. *Sc. H.* 23. 1316 W. Dayton

GRAY, LEWIS CECIL, Ph. D., Instructor in Political Economy. *N. H.* 80. 395 Lakeside

GRIFFIN, GRACE MARGARET, B. A., Instructor in Physical Education. *Lathrop.* 411 Lake

GRUHL, EDWIN, B. A., Assistant in Political Economy. *Washington Bldg.* 419 Sterling Ct.

GUTSCH, MILTON RIETOW, M. A., Assistant in History. *Lib.* 123. *U. H.* 210. 541 W. Mifflin

*HAESSLER, HERBERT FERDINAND, Student Assistant in Zoology. 311 N. Murray

HANSON, JAMES, Ph. G., Asst. in Pharmacy. *C. B.* 310. 411 W. Gorham

HARGRAVE, RUSSELL WILLIAM, B. S., Instructor in Mechanical Engineering 406 Johns St., Appleton, Wis.

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

HAY, EARL DOWNING, B. S., Instructor in Drawing. *E. B.* 405. 724 W. Johnson

HAYES, JOHN ROBERT, M. A., Instructor in Business Administration. *N. H.* 82. 21 E. Johnson

HAZELTINE, MARY EMOGENE, B. S., Preceptor of Library School. Instructor in Reference Work and Bibliography. *Free Lib. Bldg.* 515 N. Carroll

H'DOUBLER, MARGARET NEWELL, B. A., Instructor in Physical Education. *Lathrop.* 221 N. Brooks

HEISE, GEORGE WILLIAM, B. S., Assistant in Chemistry. *C. B.* 105. 901 University Ave.

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

HENDERSON, MARTIN PERRY, B. A., Assistant in Botany. *Sc. H.* 47. 133 N. Butler

HEPLER, JESSE RAYMOND, B. S., Instructor in Horticulture. *H. B.* 103. 815 W. Johnson

HERREN, WALTER, Student Assistant in Botany. *Sc. H.* 48–49. 740 Langdon

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

---

* Appointed February 24, 1912.

HIGSON, CHARLES ROY, B. S., Instructor in Electrical Engineering. *Elec. Lab.* 205. 508 W. Mifflin

HILL, JOHN, M. A., Assistant in Romance Languages. *U. H.* 324. 1910 Jefferson

HILLS, RALPH WINCHESTER, Assistant in Mechanical Drawing. *U. H.* 403. 408 N. Frances

HOLLANDER, LEE M., Ph. D., Instructor in German. *N. H.* 36. 312 Prospect Ave.

HOPE, LEONA, Instructor in Home Economics. *Lathrop* 408. 444 N. Warren

HOPPER, WALTER EVERETT, M. A., Instructor in Geology. *Sc. H.* 27. 1726 Van Hise

*HOPPERT, MARTIN JOHN, Student Assistant in Agricultural Bacteriology. *A. H.* 20. 740 Langdon

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

HYATT, CHAUNCEY ADELBERT, Instructor in Physical Education. *Gym.* 31. 302 Lake

HYDE, GRANT MILNOR, B. A., Instructor in Journalism. *U. H.* 66. 415 Park

IMHOFF, ONA MARY, B. A., Lecturer on Public Documents in Library School. *Legis. Ref. Lib.* 310 N. Murray

†INGALLS, GEORGE R., B. A., County Representative, College of Agriculture, for Eau Claire County. Instructor in Agricultural Education. Eau Claire, Wis.

JENSEN, CARL GEORGE, Student Assistant in Business Administration. 441 Lake

JESSUP, WALTER EDGAR, B. A., Assistant in Railway Engineering. *E. B.* 304. 419 Sterling Ct.

JOHNSON, AARON GUY, M. S., Assistant in Botany. Research Assistant in Plant Pathology. *A. H.* 45B. 924 Clymer Pl.

JOHNSON, ELBE HERBERT, B. A., Assistant in Physics. *Sc. H.* 23. 15 E. Dayton

JOHNSON, GERTRUDE ELIZABETH, B. A., Instructor in Public Speaking. *U. H.* 204. 113 W. Gorham

---

* Appointed February 24, 1912.
† Appointed January 17, 1912.

JOHNSON, HUGH CHRISTIAN, B. S., Assistant in Agricultural Engineering. *A. E. B.* 109. 1108 W. Johnson

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

JOHNSON, JAMES, M. S., Instructor in Horticulture. *H. B.* 108. 824 W. Dayton

JOHNSON, SIDNEY EGBERT, B. S., Instructor in Mechanics. *E. B.* 66. 2134 W. Lawn Ave.

JONES, ALFRED P., B. A., M. D., Instructor in Pathology. *S. H.* 43. 415 Park

JONES, DAVID BREESE, Ph. D., Instructor in Chemistry. *C. B.* 309. 1416 Chandler

JONES, EDWARD HUNTING, B. A., Assistant in Zoology. *Sc. H.* 61. 310 Johnson Ct.

JUDD, ROY CLAIR, Ph. B., Assistant in Chemistry. *C. B.* 105. 412 N. Murray

KALLEN, HORACE MEYER, Ph. D., Instructor in Philosophy. *U. H.* 106. 1715 Kendall Ave

KARTAK, FRANZ AUGUST, E. E., Instructor in Electrical Engineering. *Elec. Lab.* 203. 124 W. Dayton

KEFFER, RALPH, B. A., Assistant in Mathematics. *U. H.* 65. 938 W. Johnson

KELLAR, HERBERT ANTHONY, B. A., Assistant in History. *Lib.* 123. 227 Langdon

KELLER, WILLIAM JACOB, M. A., Instructor in German. *N. H.* 36. 809 W. Dayton

KELLEY, FRANCIS JAMES, B. S., Assistant in Experimental Breeding. *A. H.* 53A. 436 N. Bruen

KELLY, CHRISTMAS, B. S., Assistant in Home Economics. *Lathrop.* 1118 W. Johnson

KELSEY, RACHEL MARJORIE, M. L., Assistant in English. *U. H.* 351. 450 Charter

KENNEDY, FRANK A., B. S., Instructor in Mining Engineering. *Min. Bld.* 605 Spooner

KERSCHENSTEINER, MARK JOSEPH, B. A., Assistant in Business Administration. *N. H.* 82. 703 State

KILLEBREW, CINCINNATUS DECATUR, M. S., Assistant in Physics. *Sc. H.* 23. 740 Langdon

KING, WILLFORD ISBELL, M. A., Assistant in Political Economy. *S. H.* 23a. 218 N. Mills

KLEIN, DAVID, Ph. D., Instructor in Chemistry. *C. B.* 107. 1814 Kendall Ave.

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

KOENIG, ALFRED EDWARD, M. A., Instructor in Chemistry. *C. B.* 106. 318 S. Henry

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

KOMMERS, JESSE BENJAMIN, B. S., Instructor in Mechanics. *E. B.* 62. 2114 W. Lawn Ave.

KUECHLE, BENNO ERNST, Student Assistant in Business Administration. *N. H.* 78. 116 N. Henry

KUHLMANN, OTTO, (Prussian Exchange Teacher). Assistant in German. *N. H.* 36. 420 N. Carroll

†LACY, HENRY VEERE, B. S., Assistant in Zoology. *Sc. H.* 63. 725 University Ave.

LANGENHAN, HENRY AUGUST, Ph. C., Instructor in Pharmacy. *C. B.* 216. 415 N. Park

LAWSON, ALFRED WILLIAM, E. E., Instructor in Electrical Engineering. *E. B.* 301–303. 133 2nd St., Milwaukee, Wis.

LEARNED, GRACE LATHROP, Instructor in Physical Education. *Lathrop.* 1019 University Ave.

LEHMANN, HERBERT JAMES, Assistant in Applied Elementary Mathematics. *U. H.* 453. 308 Murray

LEITH, BENJAMIN DONALD, B. S., Instructor in Agronomy. *Agron. B.* 31. 140 Breese Terrace

‡LEWIS, GORDON, Instructor in Physical Education. *Gym.* 218 N. Pinckney

LEWIS, HOWARD THOMPSON, M. A., Assistant in Political Economy. *S. H.* 25B. 407 W. Washington Ave.

LIBBY, BARNEM, B. S., Assistant in Physics. *Sc. H.* 210 Bernard Ct.

LLOYD, ORSON GUNNELL, B. S., Assistant in Agricultural Economics. *A. H.* 51b. 218 N. Mills

LLOYD-JONES, ORREN, M. S., Assistant in Agricultural Chemistry. *A. H.* 53A. 1019 W. Johnson

---

* Appointed December 13, 1911.
† Resigned January 1, 1912.
‡ Appointed February 24, 1912.

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

LONG, WALTER STERRETT, M. A., Assistant in Chemistry. *C. B.* 105. 413 Lake

LOOMIS, ALICE MARIE, M. A., Instructor in Home Economics. *Lathrop* 401. 425 Sterling Ct.

LOOMIS, MILTON EARLY, B. A., Assistant in Political Science. *U. H.* 319. 1205 W. Johnson

LOWRIE, SELDEN GALE, M. A., Instructor in Political Science. *Capitol*, 417. 419 Sterling Ct.

LUSSKY, GEORGE FREDERIC, B. A., Assistant in German. *N. H.* 36. 307 N. Frances

LUTHER, ERNEST LEONARD, County Representative, College of Agriculture, for Oneida County. Rhinelander, Wis.

LYNN, ELDIN VERNE, M. A., Instructor in Pharmacy. *C. B.* 310. 926 Clymer Pl.

MCCARTHY, TIMOTHY JAMES, M. S., Instructor in Horticulture. *H. B.* 103. 919 University Ave.

MCCHESNEY, HARLAN D., Instructor in Physical Education. *Gym.* 315 Johnson Ct.

MCCULLOUGH, ETHEL FARQUHAR, Ph. B., B. L. S., Instructor in Book Selection and Library Administration in Library School. *Free Lib. Bldg.* 121 E. Wilson

MACDONALD, PHILIP WALTER, M. A., Assistant in History. *U. H.* 210, *Lib.* 123. 29 E. Dayton

MCDONALD, VANETTA, Herbarium Assistant. *Sc. H.* 52. 535 State

MACGILL, CAROLINE ELIZABETH, B. A., Instructor in Political Economy. *U. H.* 101. 919 W. Johnson

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

MCKEE, MARY ROSE, B. A., Instructor in Physical Education. *Lathrop.* 343 W. Main

MACLIN, EDWARD SILVER, Instructor in Drawing. *E. B.* 405. 9 S. Broom

MALDE, OLE GUSTAV, Assistant in Charge of Cranberry Investigation. Grand Rapids, Wis.

MANCHESTER, FREDERICK ALEXANDER, Ph. D., Instructor in English. *U. H.* 351. 221 S. Mills

MANN, CHARLES AUGUST, M. S., Instructor in Chemical Engineering. Assistant in Music. *C. E. B.* 104, *M. H.* 19. 924 Clymer Pl

*MARSHALL, ROY R., B. S., Instructor in Soils. *S. B.* Soils Building

MARTY, GOTTLIEB, Assistant in Dairy Husbandry. *H. S. H.* 151. 104 Lathrop

MEGGERS, WILLIAM FREDERICK, B. A., Assistant in Physics. *Sc. H.* 23. 613 Frances

MELHUS, IRVING E., B. S., Assistant in Plant Pathology. *Pathologium.* 927 Drake

MELOCHE, CLIFFORD CYRILLE, M. A., Assistant in Chemistry. *C. B.* 206. 1205 W. Washington Ave.

MEREDITH, ROY BRODHEAD, B. S., Instructor in Mechanical Engineering. 27 High St., Oshkosh

MICHELL, ROBERT BELL, Ph. D., Instructor in Romance Languages. *U. H.* 308. 450 Charter

MILLER, ANDREW HOWARD, B. A., Assistant in Physics. *Sc. H.* 23. 1127 Bowen Ct.

MILLER, ARTHUR HERBERT, M. E., Instructor in Mechanics. *E. B.* 62. 419 Sterling Ct.

MILLER, BERT E., B. S., Assistant in Electrical Engineering. *Elec. Lab.* 205. 1015 W. Johnson

MILLER, PAUL GERARD, M. A., Instructor in Romance Languages. *U. H.* 308. 1910 Jefferson

MORGAN, BAYARD QUINCY, Ph. D., Instructor in German. *N. H.* 37. 1021 W. Johnson

MORGAN, LUCY LOVISA, Reviser in Library School. *Free Lib. Bldg.* 120 W. Wilson

†MORRIS, GEORGE CHARLES, Assistant in Agricultural Journalism. *A. H.* 26. 722 W. Johnson

MORRIS, SARA I., M. D., Medical Examiner for Women. 821 *State.* 233 Langdon

MORRISON, FRANK BARRON, B. S., Assistant to Dean of College of Agriculture. Assistant in Agricultural Chemistry. *A. H.* 30. 719 University Ave.

MÜELLER, HERMAN CARL PAUL, B. A., Assistant in German. *U. H.* 104. 301 N. Bruen

---

*Appointed March 29, 1912.
† Appointed December 29, 1911.

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

NELSON, CASPER IRVING, Student Assistant in Bacteriology. *S. H.* 36. 441 W. Mifflin

NEUMANN, JOHN XAVIER, B. S., Instructor in Bacteriology. *S. H.* 33a. 615 Lake

NYBERG, JOSEPH ANTONIUS, M. S., Assistant in Mathematics. *U. H.* 65. 812 W. Johnson

ODEGARD, SIGURD LOUIS, B. A., Assistant in Political Economy. *S. H.* 23a. 314 N. Bassett

OOSTERHUIS, ALVIN CECIL, M. S., Instructor in Animal Husbandry. *A. H.* 50. 226 Brooks

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

*OTTO, MAX CHARLES, Ph. D., Instructor in Philosophy. *U. H.* 106. 310 N. Brooks

OWEN, RALPH WOODLAND, M. A., Instructor in English. *U. H.* 351. 627 Mendota Ct.

OWEN, RAY SPRAGUE, B. S., Instructor in Topographical Engineering. *E. B.* 104. 2120 Monroe

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

PARRY, JAMES WILLIAM, B. S., Instructor in Mechanical Engineering. *U. H.* 403 and 101. 626 Langdon

PETERSEN, MARIUS SMITH, B. S., Instructor in Physiology. *C. E. B.* 211. 226 W. Gilman

PETERSON, WILLIAM HAROLD, M. A., Instructor in Agricultural Chemistry. *A. H.* 59. 116 W. Washington Ave.

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

†PRIMM, ROY LEE, M. A., Assistant in Agricultural Bacteriology. *A. H.* 20. 123 N. Bruen

PULLING, HOWARD EDWARD, B. S., Assistant in Botany. *Sc. H.* 45. 28 E. Gilman

PULVER, HARRY E., B. S., Research Assistant in Mechanics. *E. B.* 114. 230 W. Gilman

READ, BENJAMIN KELLEY, B. S., Instructor in Machine Design. *E. B.* 226. 308 Breese Terrace

---

* On leave of absence, first semester, 1911–12.
† Appointed January 17, 1912.

*Regan, Alice, Instructor in Music.
Roads, Samuel Hardin, B. S., Assistant in Physics. *Sc. H.* 23. 1814 Madison
Roebuck, John Ransom, Ph. D., Instructor in Physics. *Sc. H.* 3. 1226 Mound
Roos, Christopher, Assistant in Clinical Medicine. 821 *State.* 821 State
Rowse, William Crapo, M. E., Instructor in Steam and Gas Engineering. *E. B.* 72. 302 Breese Terrace
Rundell, Oliver Samuel, LL. B., Instructor in Law. *L. B.* 327 W. Washington Ave.
Runzler, William Theodore, M. A., Assistant in German. *N. H.* 36. 419 Lake
Ryan, Marion Eva, B. A., Assistant in English. *U. H.* 351. 434 Sterling Ct.
Ryan, Will Carson, Jr., B. A., Instructor in German. *N. H.* 36. 919 University Ave.
Sandberg, Inga G., Mus. B., Instructor in Music. *M. H.* 3. 208 N. Few
†Sanders, Salome Wingate, Assistant in Music. *M. H.* 11. 618 Howard Pl.
Sanford, Herbert Brooks, B. S., Instructor in Electrical Engineering. *Elec. Lab.* 205. 2259 Regent
Saugstad, Jesse, Assistant in Music. *M. H.* 7. Portage, Wis.
Schindler, Jessie Gertrude, M. A., Assistant in Public Speaking. *U. H.* 351. 615 N. Henry
‡Schoenfeld, William Alfred, Student Assistant in Agricultural Economics. *A. H.* 51A. 112 N. Bruen
Schuette, Henry August, B. S., Assistant in Chemistry. *C. B.* 322. 924 Clymer Pl.
Schwartz, Lewis Herbert, B. S., Instructor in Poultry Husbandry. *Poultry Bld.* University Ave.
Scott, Almere Louise, Assistant, Department of Debating and Public Discussion. Instructor in Library Work. *U. H.* 151. 422 W. Dayton
Shumacker, Leopold, Ph. B., M. D., Instructor in Clinical Medicine. 821 *State.* 821 State

---

* On leave of absence, academic year, 1911–12.
† Appointed February 24, 1912.
‡ Appointed January 27, 1912.

*Sievers, Frederick John, B. S., Instructor in Soils. *H. P. B.* 206. 310 Breese Terrace

Simpson, Thomas Marshall, M. A., Instructor in Mathematics. *U. H.* 253. 416 N. Frances

Smith, Charles Augustus, M. A., Instructor in History. *U. H.* 210. 321 N. Brooks

Smith, Elizabeth Anita, B. A., Assistant in Zoology. *Sc. H.* 59. 514 Lake

Smith, Gilbert Morgan, B. S., Assistant in Botany. *Sc. H.* 72. 419 Sterling Ct.

Smith, Karl Waller, M. D., Bacteriologist, State Hygienic Laboratory. Instructor in Medical Bacteriology. *S. H.* 48. 226 N. Brooks

†Smith, William Fletcher, B. A., Assistant in Latin, *U. H.* 267. 413 N. Lake

‡Souther, Mary Genevieve, B. A., Assistant in Latin. *U. H.* 267. 929 University Ave.

Speare, Morris Edmund, M. A., Instructor in English. *U. H.* 366. 1715 Kendall Ave.

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

Steenbock, Harry, M. S., Instructor in Agricultural Chemistry. *A. H.* 59. 424 S. Mills

Steil, William Nicholas, Ph. B., Instructor in Botany. *Sc. H.* 65. 212 Walnut

Steve, William Frederick, M. A., Instructor in Physics. *Sc. H.* 23. 1216 W. Johnson

Stevenson, John Alford, B. A., Assistant in Education. *U. H.* 123. 308 N. Mills

Stewart, Alban, Ph. D., Instructor in Botany. *Sc. H.* 54. 2014 Monroe

Stoekle, Erwin R., B. S., Assistant in Physics. *Sc. H.* 23. 1113 W. Dayton

Stothart, Herbert P., Assistant in Musical Dramatics. *M. H.* 16. 531 State

Tarrell, Arch LeRoy, B. A., Assistant in Physics. *Sc. H.* 23. 430 Frances

---

* Resigned March 29, 1912.
† Resigned January 17, 1912.
‡ Appointed February 24, 1912.

TATUM, ARTHUR LAWRIE, M. S., Instructor in Pharmacology and Toxicology. *C. E. B.* 302. 523 W. Mifflin

TAYLOR, EUGENE, M. A. Instructor in Mathematics. *U. H.* 65. 208 N. Murray

TAYLOR, WARNER, M. A., Instructor in English. *U. H.* 363. 415 Park

THIESSEN, FRANK CARLTON, B. S., Assistant in Drawing. *U. H.* 101. 1124 W. Johnson

THOMAS, CHARLES W., B. S., Instructor in Drawing. *E. B.* 405. 140 Breese Terrace

THWAITES, FREDRIK TURVILLE, M. A., Curator of the Geological Museum. *Sc. H.* 27. R. F. D. 4

TORBET, ALBERT WILLIAM, Student Assistant in Business Administration. *N. H.* 76. 602 W. Dayton

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

*TOWNSEND, DEWAYNE, Student Assistant in Zoology. 515 Frances

TRUMBOWER, HENRY ROSCOE, M. A., Assistant in Political Economy. *S. H.* 23A. 421 Lake

TRUOG, EMIL, B. S., Assistant in Soils. *S. B.* 102. Soils Bldg.

TURNER, ANNABELL, B. S., Assistant in Home Economics. *Lathrop* 407. 112 S. Mills

TURVILL, HELEN, B. A., Instructor in Cataloguing and Classification and Library Economy in Library School. *Free Lib. Bldg.* R. F. D. 4

ULLSPERGER, HERMAN WENZL, Assistant in Soils. *S. B.* 303. 210 N. Brooks

VAIL, HARRY E., Instructor in Physical Education. *Gym.* 812 W. Dayton

VALENTINE, JAMES ALDEN, B. A., Assistant in Agricultural Economics. *A. H.* 56. 210 Irving

VAN BUREN, MAUD, Instructor in Library Economy and Children's Work in Library School. *Free Lib. Bldg.* 127 Langdon

VAN DUSEN, SARA HEIMDAL, B. S., Instructor in English. (Registration Clerk, Correspondence-Study Department). *U. H.* 154. 340 W. Mifflin

---

*Appointed February 24, 1912.

VAUGHN, RICHARD ENGLISH, B. S., Assistant in Plant Pathology. *Pathologium.* 133 N. Charter

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

WADE, THOMAS HENRY, M. A., Instructor in English. *U. H.* 365. 404 N. Henry

WALSTER, HARLOW LESLIE, B. S., Instructor in Soils. *S. B.* 105. 417 Sterling Ct.

WARD, HARRY BARNES, M. A., Assistant in Latin. *U. H.* 267. 144 Breese Terrace

WATT, HOMER ANDREW, Ph. D., Instructor in English. *U. H.* 361. 1017 W. Johnson

WEGEL, RAYMOND LESTER, B. A., Assistant in Physics. *Sc. H.* 23. 613 Frances

*WEHRWEIN, GEORGE SIMON, Student Assistant in Agricultural Economics. *A. H.* 51A. 619 W. Johnson

WEIDNER, CARL ROBERT, C. E., Instructor in Hydraulic Engineering. *Hyd. Lab.* 422 N. Henry

WEIR, WILBERT WALTER, B. S., Assistant in Soils. *S. B.* 208. 712 Harrison

WELLS, GUY FRED, B. S., M. A., Instructor in Education. *U. H.* 118. 110 Spooner

WERNLI, JACOB AUGUSTUS, B. A., Assistant in Romance Languages. *U. H.* 324. 211 N. Mills

WHITE, EARL ARCHIBALD, B. S., Assistant in Physical Education. *Gym.* 417 Sterling Ct.

WHITE, FRANK M., B. S., Instructor in Agricultural Engineering. *A. E. B.* 108. 417 Sterling Ct.

WILLIAMS, FRANK ERNST, B. A., Instructor in Geology. *Sc. H.* 27. 615 Lake

WILSON, CHARLES HARRIS, Instructor in Physical Education. *Gym.* 29 W. Doty

WING, HERBERT, JR., M. A., Assistant in History. *U. H.* 207. 816 W. Johnson

WINNING, ROBERT K., B. S., Instructor in Mechanical Engineering. *U. H.* 403. 17 S. Hancock

WITTE, EDWIN EMIL, B. A., Assistant in Political Economy. *Lib.* 118. 430 W. Gorham

---

* Appointed January 27, 1912.

WOLLIN, ANDREW ALBERT, Student Assistant in Chemistry. *C. B.* 102. 219 State
WOOLLEY, JOSEPH W., B. S., Instructor in Mechanical Drawing. *U. H.* 403. 235 W. Gilman
WRIGHT, WILLIAM HARMON, M. S., Instructor in Agricultural Bacteriology. *A. H.* 20. 1812 Ray
*WRIGHT, WILLIAM KELLEY, Ph. D., Instructor in Philosophy. *U. H.* 108. 248 Langdon

INSTRUCTORS AND ASSISTANTS IN SHOP PRACTICE

CHISHOLM, WALTER, Instructor in Pattern-Making. *M. S.* 1007 E. Johnson
DABNEY, WILLIAM LYLE, Instructor in Mechanical Practice. *M. S.* 910 Oakland Ave.
DORRANS, JAMES MORGAN, Instructor in Manual Arts. *M. S.* 1020 East Johnson
SCHUMANN, ROBERT N., Instructor in Forge Work. *M. S.* 1109 West Dayton
SLADKY, PAUL, Instructor in Mechanical Practice. *M. S.* 701 West Dayton
ZURIAN, GEORGE, Assistant in Forge Shop. *M. S.* 912 Aaron

LIBRARY STAFF

SMITH, WALTER MCMYNN, B. A., Librarian. *Lib.* 222. 131 W. Gilman
DUDLEY, WILLIAM HENRY, B. A., Assistant Librarian. 1909 Regent
ABBOTT, EVELINE PATIENCE, B. A., Library Assistant. 125 E. Gorham
BURKE, LAURANCE CHARLES, B. L., Library Assistant. 426 N. Charter
CODDINGTON, HESTER, Head Cataloguer. 935 University Ave.
DAVIDSON, FLORA NEIL, B. L., Library Assistant. 714 State
GROVER, ARLENE, B. L., Library Assistant. 1802 Monroe

* On leave of absence, second semester, 1911–12.

McCULLOCH, ISABELLA JANE, B. L., B. L. S., Library Assistant. 935 W. Johnson
MINER, RUTH PAULINE, B. A., Library Assistant. 217 S. Hamilton
MINER, SARAH HELEN, Library Assistant. 1113 University Ave.
PYRE, AMELIA FRANCE, B. L., Library Assistant. R. F. D. 5
SANFORD, DELIA C., B. L. S., Library Assistant. 915 University Ave.
STEINKE, LAURA ANNA, B. A., Library Assistant. 901 W. Johnson
BRIGGS, SOPHIA M., B. L., Librarian of the Law Library. *L. B.* 134 W. Gorham
HEAN, CLARENCE SCOTT, B. A., Librarian of the Agricultural Library. *A. H.* 435 N. Warren
VOLK, FRED EUGENE, B. A., B. S., Librarian of the Engineering Library. *E. B.* 421 S. Mills

INSTRUCTIONAL CORPS, UNIVERSITY DEMONSTRATION SCHOOL

RICHMOND, CHARLOTTE ELIZABETH, Principal, University Demonstration School. 211 N. Few
*BARNES, VOLNEY GOODRICH, Ph. B., Teacher of Science. 712 W. Dayton
BARTHE, DE LA, JEANNE SAVOTE, Teacher of French. 412 Murray
†BLOOD, EMMA BELLE, Teacher of English. 410 N. Henry
BURR, FRANCES K., B. A., Teacher of German. 214 S. Henry
‡FOLEY, MARCELLA D., Ph. B., Teacher of English. 210 Bernard Ct.
**FULLER, WILLIAM DAVID, Ph. B., Teacher of Science. 14 N. Henry
HAMILTON, MAUD, B. A., Teacher of Latin. 425 Sterling Ct.
KELLER, GRACE HARRIS, M. A., Teacher of English. 809 W. Dayton
ROLLER, JULIANN ANNA, B. A., Teacher of German. 318 N. Murray
††SKINNER, MARGARET MIRON, Teacher of Mathematics. 134 W. Gorham
††STEWART, WALTER WILLIAM, Teacher of Mathematics. 612 Howard Pl.

---

* Resigned January 17, 1912.
† Appointed March 13, 1912.
‡ Resigned March 13, 1912.
** Appointed January 17, 1912.
†† Appointed February 24, 1912.

WOLFERT, CLARKE KRYN, Teacher in Chemistry. 901 University Ave.

WRABETZ, VOYTA, B. A., LL. B., Teacher of Mathematics. 2254 Monroe

ASSISTANTS IN STATE HYGIENIC LABORATORY AND FEED AND FERTILIZER INSPECTION

BRERETON, GILBERT ELLIOTT, B. S., Laboratory Assistant in State Hygienic Laboratory. *S. H.* 48. 424 N. Charter

BRESEE, EMILY MAY, B. A., Assistant Chemist, Feed and Fertilizer Inspection. *A. H.* 43. 626 Langdon

GEIDEL, CARL DIEDRICH, B. S., Assistant Chemist, State Hygienic Laboratory. *S. H.* 48. 312 Clemons Ave.

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

JURRJENS, JOHN CHRISTIAN, B. S., Assistant Chemist, Feed and Fertilizer Inspection. *A. H.* 40. 422 N. Henry

TULLY, EDWARD JOSEPH, B. S., Chemist, State Hygienic Laboratory. *S. H.* 48. 1317 Spring

OTHER OFFICERS

BUMPUS, HERMON C., Ph. D., Business Manager. *Adm. B.* Spooner Apt., Henry St.

MCCAFFREY, MAURICE ERVE, Secretary of the Regents. *Adm. B.* 1904 Jefferson

HIESTAND, WILLIAM DIXON, University Registrar and Secretary of the Faculty. *U. H.* 158. 16 West Gorham

MCCONNELL, ALBERT WILSON, Superintendent of Buildings and Grounds. *Adm. B.* 2012 Jefferson

PEABODY, ARTHUR, B. S., Supervising Architect. *Adm. B.* 502 North Henry

GILBERT, GLENN L., Acting Bursar. *Adm. B.* 940 Spaight

TAYLOR, ROWENA HARMON, Matron of Chadbourne Hall. *C. H.* Chadbourne Hall

CAMP, ELIZABETH FRANCES, B. A., Matron of Lathrop Hall. *Lathrop.* 422 N. Murray

LOCHNER, LOUIS P., B. A., Alumni Recorder. *U. H.* 162. 612 S. Brearly

STANDING COMMITTEES OF THE UNIVERSITY FACULTY

Accredited Schools and Appointments—Professor E. C. Elliott, chairman; Professor Tressler, secretary; Professors Bassett, Chase, Crawshaw, Fiske, Hatch, Phillips, Purin, Skinner, Whitbeck.

Athletic Council—Professor Ehler, chairman; Professors Beebe, Bunting, Mason, Sanders.

Board of Editors of the Bulletin—Professor W. M. Smith, chairman; Professor Bleyer, secretary; Mr. Gillett, editor; Professors Dodge, Lighty, Marshall, Mead, Root, Urdahl.

Censor of Student Publications—Professor Dickinson.

Discipline—Professor Hubbard, chairman; the deans and advisers of students concerned, ex-officio; Professors Holden, Lorenzen, Ross, Sammis, and Miss Alvord in all cases relating to women.

Dishonesty in University Work—Professor Winchell, chairman; the deans, *ex-officio;* Professors Beatty, McCollum, Walton, Watts, and Miss Alvord in all cases relating to women.

Freshman—Chairman of freshmen advisers in each college, ex-officio; Professor Roe, chairman; Professors Otis, Phillips.

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

Honorary Degrees—Professor C. F. Smith, chairman; the deans and the director of the graduate school, *ex-officio;* Professor Jastrow, Slichter, Snow.

Lathrop Hall—Mrs. Mathews, chairman; Professors Fish, Marlatt, Mayhew, Miss Alvord, and Miss Camp.

Lecture—Professor Jastrow, chairman; Professor Lathrop, secretary; Professors C. E. Allen, Birge, J. G. Moore, Roedder, Sellery.

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

Loans and Undergraduate Scholarships—Professor Olson, chairman; Professor Dowling, Mathews, Marlatt, Sterling.

Press Bulletin—Professor Bleyer.

Public Functions—Professor Olson, chairman; Professors Bleyer, Burgess, Goodnight, W. U. Moore, and Mr. Beaty.

Rooms and Time Tables—Professor Zdanowicz, chairman; Professors Coerne, Denniston, Fischer, Frost, Fuller, Haertel, Keown, Young.

Student Interests—Professor Fish, chairman; Mrs. Mathews, *ex-officio;* Professor Cerf, secretary; Professors Lloyd-Jones, Mack, Mason, Martin. (The director of physical education, the commandant, the chairman of the course in journalism, the university medical adviser, the director of the school of music, and the chairman of the department of public speaking, *ex officio*, whenever their respective fields are concerned.)

Training of Teachers—Professor E. C. Elliott, chairman; Professors Bassett, Birge, Crawshaw, Hatch, Lenher, O'Shea, Paxson, Purin, Sharp, Whitbeck.

University Hygiene—Professor Ravenel, chairman; Professors Elsom, Evans, Meanwell, Thorkelson.

CHAIRMEN OF DEPARTMENTS

College of Letters and Science

Anatomy,	Professor Bardeen.
Astronomy,	Professor Comstock.
Bacteriology,	Professor Ravenel.
Botany,	Professor C. E. Allen.
Chemistry,	Professor Kahlenberg.
Education,	Professor O'Shea.
English,	Professor Cunliffe.
Geology,	Professor Leith.
German,	Professor Hohlfeld.
Greek,	Professor C. F. Smith.
Hebrew and Hellenistic Greek,	Professor Williams.
History,	Professor Munro.
Journalism,	Associate Professor Bleyer.
Latin,	Professor Slaughter.
Manual Arts,	Professor Crawshaw.
Mathematics,	Professor Slichter.
Music,	Professor Coerne.
Pathology,	Professor Bunting.
Pharmacology,	Professor Loevenhart.
Pharmacy,	Professor Kremers.
Philosophy,	Professor McGilvary.
Physical Education,	Professor Ehler.
Physics,	Professor Snow.
Physiology,	Professor Eyster.
Political Economy,	Professor Urdahl.
Political Science,	Associate Professor McBain.
Public Speaking,	Associate Professor Lyman.
Romance Languages,	Professor H. A. Smith.
Scandinavian Languages,	Professor Olson.
Zoology,	Professor Guyer.

THE UNIVERSITY OF WISCONSIN

INTRODUCTION

HISTORICAL SKETCH

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

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

Madison had been selected as the capital of the territory at the first session of the legislature, but pending the erection of the

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

lic school system of the state as a basis for university growth, but ill health caused his resignation in 1860.

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

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

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

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

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

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

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

President Bascom was succeeded by President Chamberlin of the United States Geological Survey, a graduate of Beloit College. He gave the University a strong impulse toward graduate study by the emphasis which he laid on research. Courses of study

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

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

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

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

THE SUPPORT OF THE UNIVERSITY

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

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

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

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

pletion of the central heating plant. In addition to this $50,000 per annum was appropriated for two years for books, apparatus, furniture, and equipment.

The legislature of 1911, in lieu of the two sevenths of a mill tax plus $100,000 per annum for support, substituted a three eighths of a mill tax, the change making a considerable increase in income. The appropriation for general extension was increased to $100,000 for the current year and to $125,000 for the year 1912–13. The appropriation for agricultural extension was increased to $40,000 a year for two years. The appropriation for permanent improvements and for books, apparatus, furniture, and equipment, was increased to $300,000 a year for two years; in addition an appropriation of $75,000 a year for two years was made for a woman's dormitory. From this permanent improvement fund the following structures have already been begun: a woman's dormitory, additional wings to the general chemistry building, a combined home-economics and extension building, and an agricultural chemistry building. Also with the authority of the legislature of 1911 the regents have authorized the construction of a demonstration school building to complete the development of the course for the training of teachers.

The legislature also appropriated $162,000 to add the north wing to the historical library building; this is of much consequence to the University, since in this wing are to be located the university bookstacks. Another appropriation by the legislature of 1911 was that of $47,000 per annum for five years for the purchase of land. With this money about 185 acres of land have been acquired, so that the university grounds, with the exception of one tract of about 158 acres, extend continuously from Park Street to Eagle Heights, a distance of more than three miles along the shore of Lake Mendota. With reference to the growth of the university through centuries to come, this land is of very great importance.

Another important legislative action was the making of the state library school, established some years ago, a part of the University so that the same became the University Library School in the College of Letters and Science.

Of the gifts that have come to the University from individuals before the present year, that of Dane County for the purchase of lands for the University farm, that of the late Governor C. C.

Washburn for the founding of the Washburn Observatory, that of the late Judge Mortimer M. Jackson for the establishment of the Mortimer M. Jackson Professorship of Law, that of the late Dr. C. K. Adams and Mrs. Adams for the foundation of fellowships, and that of Mrs. Fannie P. Lewis for the foundation of scholarships for women, have been the most considerable and important.

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

The citizens and alumni of the state have contributed somewhat more than $30,000 for the Carl Schurz Memorial Professorship. This gift is of special significance, since it is the first endowment of a chair from private sources through general interest in the University. It is hoped to use the income of this fund to bring to the University of Wisconsin from time to time eminent German scholars.

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 will go forward to the University. But the school system of the State has been so arranged as to make the passage from one grade to another as easy and natural

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

GOVERNMENT

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

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

ORGANIZATION

The University embraces—

- The College of Letters and Scienc
- The College of Engineering.
- The Law School.
- The College of Agriculture.
- The Medical School.
- The Graduate School.
- The Extension Division.
- The Summer Session.

The College of Letters and Science embraces—

- General Courses in Liberal Arts.
- Special Courses, which include:
  - Chemistry.
  - Commerce.
  - Journalism.
  - Library Training Courses.
  - Music.
  - Pharmacy.
  - Training of Teachers.

The College of Engineering embraces—

- The Civil Engineering Course.
- The Mechanical Engineering Course.
- The Electrical Engineering Course.
- The Chemical Engineering Course.
- The Mining Engineering Course.

The College of Agriculture embraces—

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

The Law School embraces—
A Three Years' Course.

The Medical School embraces—
The First Two Years of a Medical Course.

The Extension Division Embraces—
The Department of Instruction by Lectures.
The Department of Correspondence-Study.
The Department of General Information and Welfare.
The Department of Debating and Public Discussion.

The Summer Session embraces—
Courses in the Various Colleges and Schools of the University.

EQUIPMENT

GROUNDS AND BUILDINGS

The University of Wisconsin is located at Madison, the capital of the State. The University grounds comprise 926 acres, being on the south side of Lake Mendota and extending for several miles along the shore. At the eastern end of the grounds the land rises abruptly into two hills. The highest and most easterly of these, University Hill, has an elevation of about 100 feet above the lake and on it are nearly all the buildings of the College of Letters and Science, the College of Engineering, the Law School, and the Medical School. A short distance to the west is Observatory Hill on which are located Washburn Observatory, the Solar Observatory and the residence of the Director of Astronomy. Just east of University Hill is the lower campus. At the west end of this stands the State Historical Library building in which are housed the libraries of the University and of the State Historical Society. The rest of the lower campus is used for sports and as a parade ground.

Just west of Observatory Hill is a level tract of land which is occupied by the buildings and gardens of the College of Agriculture. Just south of this, across University Avenue, is Camp Randall, the University athletic field, comprising about 42 acres, which was purchased by provision of the legislature of 1893. The Forest Products Laboratory is also located on this tract.

Directly to the west of the grounds of the College of Agriculture is the experimental farm, comprising about 300 acres. Southwest of Eagle Heights, on the Sauk Road, is the "Hill Farm," of about 290 acres, which is used by the College of Agriculture for instructional and research purposes. The most recent acquisitions to the University grounds are the "Olin" and "Raymer" farms which were purchased with funds appropriated by the legislature of 1911. These properties comprise about 156 acres and extend from the west side of the Park and Pleasure Drive to the west side of Eagle Heights and from Lake Men-

dota southward an average distance of about half a mile. They will, for the present, be placed under the direction of and utilized for the purposes of the College of Agriculture.

In addition the University owns a number of pieces of property adjacent to the main grounds, some of which are already occupied by buildings while the others will be used as necessity demands.

The buildings of the University that are used for instructional purposes are twenty-six in number. The oldest three of these, North Hall, South Hall, and University Hall, stand on and near the crest of University Hill. As originally erected these buildings were paid for out of the money derived from the sale of lands granted by the United States Government. North Hall, on the north side of the hill, just below the crest, was the first University building to be built. It was finished in 1851 and opened for instructional purposes on September 17th of that year. At present it is occupied by the Course in Commerce and the Department of German. South Hall, directly opposite, was erected in 1855. In it are the office of the Dean of the College of Letters and Science, offices, lecture rooms, and laboratories for the Departments of Bacteriology, Pathology, Political Economy, and Hebrew and Hellenistic Greek, also the offices of the Wisconsin Geological and Natural History Survey. University Hall is on the summit of the hill. Its construction was authorized by the legislature in 1857 and the building finished in 1859. In 1897–99 a large wing was added to the south end and a new portico and dome were constructed. In 1905–06 a wing was added to the north end. This building contains the offices, class rooms, and lecture rooms of most of the Departments of Language and Literature, Mathematics, History and Philosophy. On the first floor of the south wing are the offices of the President, the Registrar and the Director of the Graduate School. The University Extension Division also has quarters in this building at present.

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 women. It was built in 1870 and remodeled and enlarged in 1896.

North of Chadbourne Hall stands Music Hall, completed in 1879. The rear part, occupied by the University Library until the summer of 1900, has been remodeled for the School of Music.

Still farther north is Science Hall, the most costly of the University buildings, completed in 1887. In it are the lecture rooms, laboratories, and museums of the Departments of Physics, Geology, Anatomy, and Biology, though the Department of Biology will, during the present year, be transferred to the new Biology building on the south slope of University Hill. Next to Lake Mendota is the old Chemical Laboratory, built in 1885, and now occupied by the Departments of Chemical Engineering, Physiology and Pharmacology. To the rear of this are the shops and the old Central Heating Plant, both erected in 1885. The old heating plant has been remodeled and is now used by the Department of Mining Engineering for the work in Metallurgy, Assaying, etc. To the north of the shops, abutting the lake, is the Hydraulic Laboratory, completed in 1905.

To the west of Science Hall, on the north side of the campus, is the Engineering Building, erected in 1900. In 1910–11 a four story addition was added to the Engineering Building, which has materially added to the facilities of the College. The addition contains class rooms, drafting rooms, offices, and also space for the engineering library, and a number of seminary rooms. Opposite this, on the south side of the campus, is the Law Building, erected in 1893, which contains the library, lecture rooms, and offices of the Law School.

Directly west of Chadbourne Hall, facing University Avenue, is Lathrop Hall, for the use of the women of the University, which was completed in 1910. This building combines all the features of a union and a gymnasium. It is a four story structure 65 by 240 feet in size. The union comprises a reception room, rooms for social events and literary societies, a dining room and a cafeteria. The gymnasium occupies the entire second floor and part of the third and fourth floors. The main gymnasium is 60 by 118 feet and to the west is a smaller room, 42 by 73 feet. In the basement is the swimming pool, 33 by 58 feet, and the bowling alleys. There is ample space for lockers and showers and the equipment of the gymnasium is complete in every respect affording the women students complete facilities for physical training. In addition to the above, the building provides offices for the Dean of Women and for the instructors in Physical Education. Also, the Department of Home Economics is temporarily located in Lathrop Hall.

South of University Hall, at the corner of University Avenue and Charter Street, is the Chemical Building, completed in 1905. A new wing is being added to the west side of this building and it is expected that it will be ready for occupancy by the opening of the school year 1912–13. The addition is to be 142 by 108 feet in size and its completion will mean an entire readjustment of the work of the Department of Chemistry, adding greatly to its facilities and efficiency.

Southeast of University Hall, just below the crest of the hill, is the new Biology Building, finished during the present year. The extreme length of this building is 240 feet, the width through the centre portion 96 feet and through the east and west wings 40 feet. This is a four story building with two basements, made possible by the slope of the hillside, and will be devoted entirely to the use of the Department of Biology. South of the central portion is an octangular auditorium 50 feet in diameter and to the south of this are the greenhouses attached to the laboratories under the auditorium. For the department of zoology a vivarium has been constructed near the southeast corner of the building and is connected by a passageway with an outdoor garden and a pool for obtaining natural conditions for aquatic creatures.

One block west of the Chemistry Building is the new University heating plant. The plant contains at present 9 water tube boilers of 350 H. P. each, and is provided with conveyors for conveniently filling the bins above the boilers with coal and for removing ash from the stokers. The stokers are mechanically operated and because of this two men can look after the fires and the water in the boilers. The bins above the boilers have capacity for 4,000 tons of coal and additional storage room is provided for 2,000 tons more. The chimney is 250 feet high by 14 feet inside diameter. It is designed to be large enough for the plant when it is filled with 12 350 H. P. boilers and also when an addition for eight more boilers of the same capacity is built south of the chimney. The steam is generated at 115 pounds pressure and distributed to the various buildings through tunnels and conduits. The high pressure is required for the water works station which has steam driven pumps. For heating purposes the pressure is reduced as the steam enters the buildings.

Directly east of the heating station is a new four-story storehouse and shop building. It is 75 feet wide by 60 feet deep and is for general storage purposes and for the use of University workmen. The first floor, with the exception of the office, is devoted to the storage of cement. The second and third floors are used for work shops and the fourth floor is used for the storage of miscellaneous University supplies.

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

Between the lower campus and the lake stands the Armory and Gymnasium, authorized by the legislature in 1891, and back of this, on the lake shore, is the University boat house. During the present year a one story annex was erected on the east side of the gymnasium. This is 222 feet long by 84 feet wide and contains a running track and baseball cage.

Just west of University Hill on Observatory Hill, stands Washburn Observatory, erected in 1878 through the munificence of the late Gov. C. C. Washburn. Near it are the Students' Observatory and the residence of the director. On the western slope of Observatory Hill are the Hiram Smith Hall (the Dairy department), constructed in 1891, the Horticulture-Soils Building, begun in 1893 and completed in 1896, and the new central Agricultural College Building, first occupied in 1904, which are described in that part of the catalogue devoted to the College of Agriculture. The dairy laboratory, 40 by 80 feet, adjoining Hiram Smith Hall on the east, was completed in 1911. It includes offices, class rooms, and large laboratories for instruction in dairying. South of Agricultural Hall are the Farm Engineering Building and the Agronomy Building, which were occupied for the first time in the autumn of 1907. Further west are located the Live Stock Pavilion containing an amphitheatre capable of seating 2,000, the barns of the Experimental Farm and the residence for the Dean of the College of Agriculture.

The Horticultural Building, completed in 1911, stands west of the Agricultural Engineering Building, facing north on Mag-

nolia Drive. This building provides quarters for the departments of Horticulture and Plant Pathology. South of the Horticultural Building are located the Potting Houses and four green houses completed in 1911.

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

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

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

Aside from the additions which have already been mentioned there are three new buildings in process of construction. Just east of Lathrop Hall is being erected a new dormitory for women students. It will be connected with both Lathrop and Chadbourne Halls by covered passageways. It will be four stories high and will accommodate 150 students. The first story will contain the general parlors, administration offices, and dormitory rooms. The dining rooms will be located in the basement facing to the east and south. It is intended to construct a building to the north of the dormitory to be used as a common kitchen for Lathrop Hall, Chadbourne Hall, and the dormitory.

East of Agricultural Hall and north of Linden Drive a building is being erected to be used by the Department of Home Economics in the Agricultural College and by the University Extension Division. It will consist of the main portion with wings to the right and left, the east wing only to be constructed at present. The centre portion of the building will be occupied for the present by the University Extension Division and will be divided into offices and work rooms. The east wing and portion of the central part will be assigned to Home Economics, the laboratories being located in the wing. The upper stories

of the building will be occupied by the Department of Art and Design.

The Agricultural Chemistry Building is in process of construction north of the Forest Products Laboratory and west of the drive leading to Agricultural Hall. It is to be a two-story building, constructed of brick with tile roof in general harmony with the other Agricultural buildings. The basement will contain the general laboratory for Agricultural Chemistry and a secondary laboratory for special work. The other parts of the basement will be occupied by small laboratories and store rooms, animal rooms, etc. The first story will contain the administration offices, the auditorium, seating 400, and small laboratories for special work. The second story will be occupied by laboratories for the different heads of departments and for research.

Plans are also under way for a building for the use of the Demonstration School, which will be erected during the coming year.

LABORATORIES

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

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

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

BOTANICAL LABORATORIES.—The laboratories for advanced work in botany are fitted up with the apparatus and reagents necessary for advanced courses in vegetable morphology, histology, physiology, and cytology. A greenhouse and a laboratory, also under a glass roof, occupy the fourth floor of the south wing of Science Hall, and have been especially equipped for work on the

development and physiology of the lower plants. A considerable amount of apparatus for work on the special physiology of the flowering plants is also provided. A special laboratory is devoted to work in general physiology, and all necessary reagents, ovens, paraffin baths and microtomes are provided for histological and cytological work on cell structure and the phenomena of cell division, fertilization, chromosome reduction, etc. Provision is also made for work on the metabolism of cells and their reactions to physical stimuli. The equipment includes apparatus for the study of the effects of various thermal light and gravitational stimuli on protoplasmic activities, a photometer, and a set of electrical measuring instruments, such as delicate d'Arsonval galvanometer, milammeter, resistance measuring instruments, etc., for the study of electro-physiological problems.

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

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

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

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

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

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

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

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

The physical laboratories are located on the first floor and in the basement of Science Hall, and are commodious and well equipped. Besides the lecture room and the large apparatus room the first floor contains the general physical laboratory,

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

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

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

The State Hygienic Laboratory is located on the second floor of Agricultural Hall and the abundant material here furnished for diagnostic purposes is also utilized for class room and research work.

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

LIBRARIES

The libraries at Madison, all of which are at the service of members of the University, are five in number, viz., the Library of the University of Wisconsin, the Library of the State Historical Society of Wisconsin, the Library of the Wisconsin Academy of Sciences, Arts, and Letters, the State Law Library, and the Madison Free Library. These libraries duplicate books only to supply exceptional demands, and have an effective strength approximately equal to the total number of volumes possessed by them. The total number of bound volumes in all the libraries is about 440,000 and the number of pamphlets exceeds 215,000.

The first three libraries above named are all housed in the library building of the State Historical Society on the lower campus of the University. This building, erected by the State of Wisconsin, affords most convenient accommodations for students. In the planning of the building, the special needs of the University were consulted.

In the south half of the first floor are located four department libraries of the Historical Society, viz., documents, newspaper files, patents, and maps and manuscripts. In the north end of this floor is a series of six seminary rooms, 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 rooms are shelved several thousand reference and "reserved" books. To these, as well as to the large collection of general periodicals in the periodical room, all readers have direct access. The main portion of both libraries is stored in the stack wing adjoining the delivery room on the west. Officers of the University have direct access to the shelves in all parts of the library, and students engaged in advanced work, upon recommendation of their instructors, are allowed access to those parts of the collection dealing with their special subjects.

The administrative rooms of the Historical Society and of the University library are situated at the south and north ends of

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

Work has been started on a new wing to the library building, which, when completed, will materially add to the library facilities.

The library of the University of Wisconsin, including its branches, contains about 185,000 volumes and 41,000 pamphlets. The catalogue is the usual dictionary card catalogue of authors, subjects, and titles in one alphabetical arrangement. Subject to certain restrictions, books may be drawn by all members of the University. Students are required to make a guarantee deposit of $2.00 with the bursar of the Regents before borrowing books from the library. This amount is refunded on presenting to the bursar the library deposit card endorsed by the librarian.

The Law School has a special library of 18,500 volumes; and the Washburn Observatory is provided with the Woodman astronomical library, now containing 2,600 books and 2,700 pamphlets. The agricultural library of about 11,500 volumes is located on the first floor of Agricultural Hall. The engineering library is located on the first floor of the Engineering Building.

The library of the State Historical Society contains over 172,000 volumes and 174,000 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 52,000 volumes. Students are allowed to draw books from the Madison Free Library, a well selected collection of over 25,000 volumes.

MUSEUMS

Officers.

CHARLES R. VAN HISE, Ph. D., LL. D., President of the University.
J. J. DAVIS, M. D., Curator for Botany.
WILLIAM S. MARSHALL, Ph. D., Associate Professor of Entomology, Curator for Zoology.
WILLIAM S. MILLER, Ph. D., Associate Professor of Vertebrate Anatomy, Curator for Vertebrate Anatomy.
F. T. THWAITES, Curator of Geological Museum.
ROLLIN H. DENNISTON, Ph. D., Curator for Pharmaceutical Collections.

The university museums comprise the Anatomical Museum, the Geological and Mineralogical Museum, the Biological Museum, the Herbarium, and the Drug Cabinet, which occupy respectively rooms on the second, third, and fourth floors of Science Hall. The collections in the College of Engineering and the College of Agriculture are described in later pages.

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

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

THE CHEMICAL COLLECTION.—The collection here described is located in the new Chemistry Building. Through the liberality of the United Alkali Company of England, some fifty specimens of their products in various stages of manufacture were obtained. Dr. William Simon, of Baltimore, has contributed a series of specimens illustrating the manufacture of bichromate and ferrocyanide of potassium. Fries Bros. of New York have donated a number of synthetics used in perfumery. A similar collection has recently been received from the Herbene Chemical Co. of New York. A cabinet for volatile oils contains fine collections from Schimmel & Co., of Leipzig, Germany; Roure Bertrand Fils, of Grasse, France; Dodge & Olcott, New York; Lautier Fils of Grasse, France; H. Haensel of Pirna, Germany, and others. A

cabinet for dye-stuffs contains about 1,000 samples of artificial dye-stuffs from the Farbenfabriken of Eberfeld & Co. of New York, Farbwerke vorm. Meister Lucius and Bruening of Hoechst; Casella Color Company, New York; Badische Company, New York; Barret Mfg. Co., Philadelphia. These collections are supplemented by numerous volumes of richly illustrated descriptive matter, to which additions are being constantly received. Large and valuable collections of modern synthetic new remedies have been received from Schering and Glatz, from the Farbenfabriken of the Eberfeld Company, Merck & Co., Boehringer & Soehne, Bischoff & Co. and from Heyden Chemical Works, all of New York; also from Parke, Davis & Co., Detroit; Actiengesellschaft fuer Anilin Fabrikation, Berlin, and others.

THE DRUG COLLECTION.—At present this collection contains about 4,500 sample specimens of drugs for purely illustrative purposes. Each year additions come to it as contributions from various sources. Among the larger contributors are Schimmel & Co., of Leipzig, Germany; Lehn & Fink, Parke, Davis & Co., and Gilpin, Langdon & Co. The collection is well supplied with drugs of Asiatic origin. Notable among them are a collection of fifty Ceylon drugs and medicines and a collection of more than one hundred Malay medicines.

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

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

A number of additional collections are at present stored in the lecture rooms, laboratories and offices, and are accessible to students interested. These include a collection of 40,000 specimens and 20,000 thin sections, belonging to the Pre-Cambrian and Metamorphic Division of the United States Geological Survey, one

of the largest of its kind in the world; a large collection of New England rocks belonging to the same survey; the collections of the old Wisconsin Geological Survey; and the Hobbs collection, mainly of European rocks, supplied with over 1,000 thin sections.

THE HERBARIUM of the University (rooms 41 and 51, Science Hall) includes the Lapham collection, chiefly of flowering plants, purchased by the State from the estate of I. A. Lapham, of Milwaukee. This collection, which contains about 8,000 species, has been mounted and arranged and is accessible for study. The Wisconsin plants have been separated from the rest and it is the intention to make them the nucleus of a complete representation of the Wisconsin flora. Large additions have been made to this herbarium by Professors L. S. Cheney and H. L. Russell. Mr. Lapham's collection also included a considerable number of algæ, lichens, and mosses. The collection of mosses has been very greatly extended by gifts, purchases, exchanges, and collections acquired, so that it includes almost all of the species known to North America, besides a large number of those from other countries. Many valuable types and sets of exsiccati are included. The collection of algæ and parasitic fungi contains the principal North American exsiccati as well as large local collections. There is also a large and rapidly growing collection of alcoholic and dried specimens of the fleshy fungi of the State.

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

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

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

lection of specimens of wood and of the fleshy woody fungi of the State. The Owen collection of Lepidoptera, comprising 5,000 species, and over 20,000 specimens, is deposited in Science Hall.

LOCAL OFFICE, U. S. WEATHER BUREAU

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

The functions of the local office of the Weather Bureau are (1) to observe the meteorological elements twice daily and to exchange the results by telegraph with other stations for use in forecasting the weather; (2) to prepare and distribute to the public the daily weather map, and forecasts, and other weather information; and (3) to maintain in operation a set of automatically recording instruments and to tabulate therefrom data for use in climatology.

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

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

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

full series of lantern slides illustrating meteorological phenomena.

FOREST PRODUCTS LABORATORY

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

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

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

This section has to do mainly with the design of machines for utilizing wood waste among the industries which employ it as a material.

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

GENERAL INFORMATION

UNIVERSITY REGULATIONS

THE UNIVERSITY YEAR

The regular University year opens on the last Wednesday in September. There are two semesters in each year. The first semester ends on the Friday following the twentieth Wednesday of the college year. The second semester begins on the succeeding Monday, and ends with the annual Commencement, on the thirty-ninth Wednesday of the University year.

The limits of the Christmas vacation vary with the day of the week on which Christmas falls. The following table shows the arrangement:

If Christmas falls on	Vacation opens, noon	Recitations begin 8 a. m.
Sunday	Thursday, Dec. 22.	Wednesday, Jan. 4.
Monday	Thursday, Dec. 21.	Thursday, Jan. 4.
Tuesday	Thursday, Dec. 20.	Thursday, Jan. 3.
Wednesday	Friday, Dec. 20.	Tuesday, Jan. 7.
Thursday	Tuesday, Dec. 23.	Tuesday, Jan. 6.
Friday	Tuesday, Dec. 22.	Tuesday, Jan. 5.
Saturday	Wednesday, Dec. 22.	Tuesday, Jan. 4.

The Easter recess begins on Thursday morning before Easter Sunday, and closes on the morning of the following Tuesday.

STUDENT ADVISERS

In the College of Letters and Science, the College of Engineering, and the College of Agriculture, each student is placed under the immediate charge of a member of the faculty, who acts as his adviser in matters pertaining to University work. The stu-

dent must consult his adviser in choosing studies, and obtain his approval before classes can be entered.

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

INFORMATION FOR WOMEN STUDENTS

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

For the benefit of those who are not accommodated in Chadbourne Hall (see Index) she has prepared a list of addresses where rooms for young women may be obtained. Each house on the list has been inspected by her, and while responsibility for them cannot be assumed by the University, they are believed to be suitable homes for women students.

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

Lathrop Hall, a commodious building, for the use of the women of the University provides, in addition to a finely equipped gymnasium, restaurant and rest room, a meeting place for student organizations, and a center for the social life of the University.

Mrs. Lois Kimball Mathews, the Dean of Women, invites correspondence with parents and guardians, and gladly cooperates with them regarding the welfare of students.

STUDENT HEALTH

The Department of Clinical Medicine has general supervision of the health of the students. It aims to determine the medical

fitness of each student entering the University, to study the intricate problems of the relation of health to higher education and to prevent disease among the students by attempting to correct proved errors in present educational practices and in the life of the individual.

MEDICAL EXAMINATIONS.—Students entering the University for the first time are required to undergo a careful medical examination in order to determine their fitness to carry on University work. An appointment card is given the student at the time of registration and it is necessary that each report promptly. Records of the results of these examinations are kept in the office of the respective deans and of the Department of Clinical Medicine for future reference in the supervision of the mental and physical development of the student. Recommendations are made to the deans relative to the apparent general efficiency and in the case of those required to take physical education, to the Department of Physical Education relative to the physical efficiency of the student.

In addition to this routine medical examination, which includes an examination of the heart, lungs, and other vital organs together with tests for vision and hearing, freshmen and those entering the sophomore class are required to undergo the physical efficiency tests conducted by the Department of Physical Education.

MEDICAL ADVISER'S OFFICE.—821 State St., until the fall semester 1912, then 762 Langdon St., Telephone, Univ. 240.

This office is established for the general supervision of students needing medical attention. It is earnestly desired that all cases of student illness be promptly reported to this office whether or not professional service is desired. At the same time it is hoped that students should feel free to seek advice concerning the care of their health. A careful examination is made of the physical condition and the functional activity of those who consult the members of the staff and where it seems advisable the family physician is notified for future advice and consultation.

Minor illnesses and conditions affecting the general welfare of the University community are treated by the members of the staff, but students requiring care along special lines (diseases of the eye, ear, major surgery, etc.) are referred to specialists.

At least one call is made on request of students confined to the house by illness. Personal care of students confined to the house by protracted illness can be given, however, only in exceptional cases. In cases of prolonged illness the services of a local physician should be secured, or, when practicable, the student should be removed to his home and placed in the care of the family physician.

Trained nurses reside at Chadbourne Hall (Telephone Univ. 222) where infirmary space for four patients is maintained. The services of the nurses are free to resident and other women students who notify the Medical Adviser's Office.

Arrangement for students needing hospital care has been made with the Madison General Hospital Association, which has set aside two wards furnished by student contributions. It has been possible to establish one free bed owing to the generosity of a member of the board of regents. Needy students requiring free hospital care must make arrangements with the Hospital Association through the office of the Medical Adviser.

Under the auspices of the University Committee on Hygiene a series of lectures on public and personal hygiene by eminent authorities is offered each year.

HONORS

Honors are given at graduation for special work of a 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. For honors in the College of Letters and Science, see page 132.

PRIZES

Lewis Prize

James T. Lewis, of Columbus, formerly Governor of the State, in 1865 gave to the University $100, and in 1866 added a further gift of $100, to constitute a fund the annual income of which should be expended to purchase a medal to be given as a prize for superior scholarship. In 1873 it was decided, with the consent of the donor, that the income should be presented as a prize to the undergraduate student producing the best written essay. By 1905 the fund had grown, through accumulated interest, to something over $300. In that year the Regents of the University decided that, in recognition of this having been the first gift to the University as a permanent endowment, henceforth the "Lewis Prize" should consist of $25 annually, and any deficiency in the income for any year shall be paid from the general account of the University. The prize is awarded to the undergraduate student who shall produce, during the collegiate year, pursuant to regulations prescribed by the President and Faculty, the best written essay.

Bryan Prize Fund

In 1899 William Jennings Bryan presented to the University the sum of $250, the annual income of which is used as a prize for the best essay on "The Science of Government."

UNDERGRADUATE SCHOLARSHIPS AND FUNDS

SCHOLARSHIPS FOR UNDERGRADUATES

The Amelia H. Doyon Scholarships

The will of Mrs. Amelia H. Doyon, late of Madison, provided for a gift to the University of $5,000 to be known as the Amelia H. Doyon Fund. The income from this fund is divided into two equal parts, designated as the Amelia H. Doyon Scholarships, which are to be given to young women in attendance at the Uni-

versity, to be selected by the faculty. In making this selection the scholarship or standing of the persons selected and their need of financial help are both taken into consideration. Neither of these scholarships is to be bestowed on any young woman who has not been in attendance as a student at the University of Wisconsin for at least one year.

The Fannie P. Lewis Scholarship Fund

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

The Christian R. Stein Scholarship

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

The Henry Gund Scholarship in German

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

The Mortar Board Scholarship

Mortar Board, a society composed of senior women, maintains an annual scholarship of $100 which is awarded to a woman student, the award being made on the basis of scholarship and need of financial assistance.

The Gamma Phi Beta Scholarship

The Gamma Phi Beta sorority, in 1911, established an annual scholarship of $100 for women students, to be awarded on the basis of scholarship and need of financial assistance.

For honors in the College of Letters and Science, see page 132.

LOAN FUNDS AND STUDENT AIDS

The John A. Johnson Fund

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

The Alexander H. Rogers Loan Fund

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

The Graduating Class Fund

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

The Secretary's Fund

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

Emery Loan Fund

In 1900 a fund was started by Miss Annie Crosby Emery, formerly Dean of Women, which is loaned to needy women students on recommendation of the Committee on Loans.

Engineers Loan Fund

The Engineers Loan Fund, was started in 1901 by members of the faculty of the College of Engineering. It has been added to at various times until it now amounts to about $800. It is used for the assistance of needy students in the College of Engineering.

Self Government Association Loan Fund

The Self Government Association has established a loan fund for the assistance of women students in need of financial assistance. This fund now amounts to about $500.

The Athletic Association Fund

The Women's Athletic Association, in 1912, gave to the University $100 as the nucleus of a loan fund, to which annual additions are to be made, for the benefit of deserving women students.

The Geneva Loan Fund

This fund of $450 was provided in December, 1903, by Mrs E. P. Allis and Mr. Louis Allis, of Milwaukee, and by Mr. Frank W. Allis (member of the Short Course class of 1897), proprietor of Monona Farm, Madison. In February, 1905, F. W. Allis gave $150 additional, and in October of the same year Louis Allis contributed another $150 so that the fund amounts to $750. It is available to needy members of the Short Course classes of the College of Agriculture only, in small amounts. Loans from this fund may be made through the Dean of the College of Agriculture.

Agricultural Students' Loan Fund

In 1911 Albert B. Kuppenheimer of Chicago, donated to the University the sum of $750 to be used as a loan fund for the assistance of students in the College of Agriculture. Loans from this fund are on the recommendation of the Dean of the College of Agriculture.

Employment Bureau

The Young Men's Christian Association of the University conducts an employment bureau for the benefit of those students

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

SOCIETIES AND PUBLICATIONS

LITERARY AND SCIENTIFIC SOCIETIES

The literary and debating societies of the University have played so important a part that they may almost be said to constitute a department by themselves. The Athenæan and the Hesperian societies are nearly as old as the University itself, Athena having been organized in 1850, and Hesperia in 1854. Philomathia was organized in 1886, and Olympia in 1902. The societies are sustained with great enthusiasm, and are an important means of intellectual training. Athena, Hesperia, and Philomathia form what is known as the Joint Debate League, which arranges annually a public debate between two of these three societies. This joint debate has been a feature of the University for nearly forty years. These four above-mentioned are men's societies in the College of Letters and Science. The debating society of the Law School in Forum-Columbia. The young women maintain two literary societies, Castalia, established in the early years of the University, and Pythia, in 1902. These seven societies form the Oratorical Association, which has charge of inter-collegiate debating and oratory. This association is a member of a pentangular debating league, composed of the universities of Illinois, Iowa, Minnesota, Nebraska, and Wisconsin. Each university meets two of the others each year in debate in rotation, so that in the complete round each of the uni-

versities meets each of the others twice. A series of preliminary contests, held at the middle of each year, is made up of a sophomore contest, a junior contest, a junior-ex contest, (between representatives of each of the literary societies chosen from the junior class), and a senior contest. The winner in this series is chosen as the representative of Wisconsin in the Northern Oratorical Contest, in which he meets representatives from the universities of Chicago, Iowa, Michigan, Minnesota, Northwestern, and Oberlin.

The most important scientific organization in the University is the Science Club, which includes both officers of instruction and advanced students, and seeks to promote an interest in scientific study and research. It conducts public meetings for the discussion of scientific topics of current interest. A bronze medal executed by T. Moring, London, is annually awarded by the Club for the best baccalaureate thesis on a scientific subject. The Historical and Political Science Association and the Language and Literature Club are new societies organized by instructors and graduate students for the purpose of fostering advanced work. In various departments of the University there are journal clubs or societies for furthering the special work of the departments. Among these are the *Germanistische Gesellschaft;* a Scandinavian society, *the Nora Samlag;* the Romance Language Club; the Pharmaceutical Society; the Classical Club; the Physics Journal Club; the Biological Club, and the Chemical Club. In other departments, where no such organization has been affected, similar results are reached by means of the various seminaries. The graduate students of the University maintain a Graduate Club. The University Press Club, the Cubs' Club, the Advertising Club, and the Hoard Press Club are composed of students preparing for journalism. Delta Alpha is a professional fraternity whose members are students interested in journalism while Theta Sigma Phi is the professional journalistic sorority. A Music Students' Club has been organized to encourage among the students a more serious study of the great composers and their works. The Haresfoot Club is maintained by university dramatic talent, and presents a play annually; the Red Domino Club is a similar organization maintained by young women; and the Edwin Booth Club aims to promote dramatic interest and train dramatic talent. Phi Alpha Tau is a semi-honorary frater-

nity devoted to the interests of oratory and public speaking. Admission is determined by the members, largely on the basis of native ability and proven success along these lines.

SOCIAL AND RELIGIOUS ORGANIZATIONS

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

PUBLICATIONS OF THE UNIVERSITY

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

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

The High School series comprises a number of manuals de-

signed to assist secondary school teachers in the subjects included in the high school curriculum.

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

STUDENT AND ALUMNI PUBLICATIONS

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

ADMISSION TO THE UNIVERSITY

METHODS OF ADMISSION

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

For the examinations at the University, see page 108.

TIME OF ENTRANCE

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

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

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

ENTRANCE REQUIREMENTS

The requirements for admission are stated in terms of units. The term *unit* means the equivalent of five recitations a week for one year in one branch of study. In closely allied branches not

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

Fourteen units are required for admission, of which six are required of all, and eight are elective. For a description of the amount of work expected in each of the subjects named in the entrance requirements, see page 100, under Preparatory Work.

I. The following six units are required of all:

English	2 units
Mathematics	2 units
Latin, German, or French	2 units

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

English	1 or 2 units
Mathematics	½, 1, 1½, or 2 units
Foreign Languages:	
Greek	1 or 2 units
Latin	1, 2, 3, or 4 units
German	1, 2, 3, or 4 units
French	1, 2, 3, or 4 units
Spanish	1 or 2 units
History	1, 2, 3, or 4 units
Ancient History	1 unit
Medieval and Modern History	1 unit
Medieval and English History	1 unit
English History	1 unit
United States History	1 unit
Civics	½ or 1 unit
Economics	½ unit
Science	1, 2, 3, or 4 units
Botany	1 or 2 units
Chemistry	1 or 2 units
Physics	1 or 2 units
Physical Geography and Geology	1 or 2 units
Physiology	½ unit
Zoology	1 or 2 units

VOCATIONAL SUBJECTS (See note below)... ½, 1, 2, 3, or 4 units
Agriculture (See note below)..... 1, 2, 3, or 4 units
Commercial Work (See note below).. ½, 1, 2, 3, or 4 units
(Including Commercial Law ½ unit; Commercial Geography ½ unit.)

Domestic Science (See note below)..... 1, 2, 3, or 4 units
Manual Arts (See note below)..... 1, 2, 3, or 4 units

OPTIONAL SUBJECT (See note below)..... 1 unit

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

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

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

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

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

REQUIREMENTS FOR ADMISSION TO THE SEVERAL COLLEGES AND COURSES

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

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

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

ENGLISH ..... 2 units
ALGEBRA ..... 1½ units
GEOMETRY, Plane and Solid, combination course extending over 1 year, as described on page 103..... 1 unit
or Plane 1 year and Solid ½ year..... 1½ units
The longer course covering 1½ units is recommended.
GERMAN OR FRENCH..... 2 units
OR LATIN ..... 4 units
PHYSICS ..... 1 unit

The remainder of the required fourteen units must be made up from elections under II; excepting that no units may be offered in domestic science. Students are advised to present chemistry, advanced mathematics, and additional work in German or French. Students who enter without foreign language will find it difficult to complete any of the courses in engineering in four years. Two or three years of high school Latin will be accepted as satisfying one-half the entrance requirement in language.

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

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

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

Law School.—(1) Candidates for a degree: Credits equivalent to the work of the Freshman and Sophomore years in the College of Letters and Science. (2) Not candidates for a degree: The studies under I, and the electives under II, to make fourteen units, and provided such candidates are at least twenty-one years of age.

Course in Commerce.—The studies under I, and electives under II, to make fourteen units.

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

Course in Chemistry.—The studies under I, and electives under II, to make fourteen units.

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

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

SCOPE OF THE PREPARATORY WORK

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

English

ENGLISH. 2, 3, or 4 units. All applicants for admission must present two units in English, one of which must consist of composition, and one of the reading and study of English classics. The two units required in English correspond in amount and character to the work of the first two years of the standard high school course, in which one-half of the time is devoted to theme-writing and instruction in the principles of composition, and one-half to the careful study of a number of English classics. It is recommended that applicants present at least three units in English, the third unit to consist of additional work in composition, and either (1) an outline history of English and American literature with the reading and study of representative selections of each period, or (2) the intensive study of a few typical examples of the novel, the drama, the lyric, and the essay. Four units of English should include composition, and both (1) and (2) given above, in addition to the two required units. A complete statement of the work for each unit of preparation is given in No. 1 of the High School Series of the Bulletin of the University of Wisconsin, entitled *The High School Course in English.*

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

mar, or sentence structure. Students whose preparation in English composition is found to be deficient must make up such deficiency in one year under penalty of being dropped from the University. The University provides a course of instruction for such students. See English A, p. 160.

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

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

sentative works of Longfellow, Whittier, Bryant, Holmes, Irving, Hawthorne, Cooper, Poe, Lowell, and Emerson. A study of the principles of composition and the application of them in theme-writing must be included in this unit.

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

Mathematics

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

An additional half year of algebra is strongly recommended for all students and is required of engineering students. The work should cover the following subjects: Simultaneous quadratic equations; ratio, proportion and variation; graphical representation of simple relations between two variables; binomial theorem for positive integral exponents; logarithms, including use of tables in simple numerical work; 1st arithmetical and geometrical progressions.

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

1 unit, *combination course of a single year in plane and solid geometry.* This should consist of about 180 propositions of which 45 must be in solid and spherical geometry.

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

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

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

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

An additional credit of ½ to 1 unit may be given to students who have had further work in algebra, trigonometry and surveying, or other mathematics, but the total credit shall not exceed 4 units.

History, Civics, and Economics

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

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

Medieval and Modern History, 1 unit.

Medieval and English History, 1 unit.

English History, 1 unit.

United States History, 1 unit.

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

CIVICS. ½ or 1 unit. A knowledge of the relationships existing between subordinate and higher political units together with a description of the chief functions performed by the institutions of the various political units.

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

Commercial Law, ½ unit, may be offered under Civics.

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

Commercial Geography, ½ unit, may be offered under Economics.

Science

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

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

CHEMISTRY. 1 unit. A year's course in chemistry, consisting of a study of the more common elements and their compounds. The course should consist of both laboratory and recitation work. About three-fifths of the time should be spent in the laboratory. Two laboratory periods are considered as equivalent to one class exercise. A record of all the work done in the laboratory should be kept in a note-book.

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

PHYSICAL GEOGRAPHY. 1 unit. The physical geography should include: (1) The principles as presented in the best recent textbooks, which give adequate treatment of the atmosphere and ocean and emphasize the development and influence of topographic forms. (2) Field study. The nature of this must be controlled by the locality; but every candidate offering physical

geography will be expected to submit a statement of the field trips required in his course. (3) The interpretation and habitual use of topographic maps, weather maps, charts, and pictures in the laboratory.

Where it is not possible to give a full year's work to the subject, physical geography may be combined with botany and physiology in the construction 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 textbook work must be illustrated by charts and models, and anatomical demonstrations and chemical experiments should also be made.

ZOOLOGY. 1 unit. Instruction in this subject should include as much as four periods of laboratory per week. The student should study at least eight to ten types of animals and make careful descriptions and drawings of this work. Knowledge of life histories and habits and relation of environment is desirable. The laboratory work should be accompanied with class exercises, so that the student may gain intelligent appreciation of the meaning of his observations and of the bearing on zoological science of the facts observed by him. The nature and scope of work expected may be indicated by the textbooks of Needham, Colton, Jordan, and Kellogg, or Linville and Kelly.

Language

GREEK. 2 units Grammar; 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*, books I–IV, or an equivalent; *Cicero*, six orations (selections from the letters may be substituted for two orations). *Virgil*, six books; composition, preferably in connection with *Caesar* and *Cicero*. The work recommended in the report of the Cleveland Commission on College Entrance Requirements in Latin is accepted by the University.

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

LATIN. 2 units. Grammar and elementary book; *Caesar*, books I–IV, or an equivalent; composition. Students who present two units and others whose preparation in Latin is, for any reason, deficient may continue the study in the University with course A or course B, which may be credited towards the bachelor's degree and used to satisfy the University's language requirements. No such credit will be given for high school Latin.

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

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

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

C. Advanced German. Besides the work outlined under *A* and *B*, applicants should have read from 400 to 500 pages of standard literature in prose and poetry, with reference reading in the history of modern German literature. They should be

able to translate at sight any ordinary modern German text that is free from unusual difficulties, to write a brief German essay on a simple topic relating to the texts read, and to follow a recitation conducted in German.

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

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

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

Fraser and Squair's grammar is being used at present in the University, emphasis being placed upon oral and written drill outlined in the first 161 pages. Not less than 600 pages of simple French should have been read with careful attention paid to pronunciation during the entire period. A list of suitable texts will be found on page 76 of the "Report of the Committee of Twelve."

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

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

SPANISH. 2 units. Spanish may be offered for entrance as a subject of two units, corresponding to the amount of work done in the elementary courses of the University. The student should

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

VOCATIONAL SUBJECTS

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

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

EXAMINATIONS AT THE UNIVERSITY

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

For the current year the earlier examinations will be held on Thursday and Friday, June 13 and 14, beginning at 9 o'clock A. M. The later examinations will be held on Monday and Tuesday, September 23, and 24, beginning at 9 o'clock A. M. Students who are in any doubt as to their qualifications are urged to present themselves in June. All candidates are required to be present at 9 o'clock on the first day of the examinations.

Candidates for admission to the University may divide the

subjects and take the examinations in two trials; but a failure to pass all of the subjects in the two trials will necessitate a complete re-examination.

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

ADMISSION UPON CERTIFICATE

ACCREDITED SCHOOLS.—Any high school or academy in the state whose course of instruction covers the branches requisite for admission to the University may be admitted to its accredited list of preparatory schools after a satisfactory examination by a committee of the faculty. Application for such an examination may be made by an officer of the school to the Secretary of the Committee on accredited Schools, on the basis of which a committee of the faculty will examine the course of study and the methods of instruction in the school, and on their favorable recommendation and the concurrence of the faculty it will be entered upon the accredited list of the University. No school will be placed upon the list whose course of study is not fully equal to the four-year course of high schools recommended by the State Superintendent. The graduates of such an approved school will be received by the University without examination, on the presentation of a certificate showing the satisfactory completion of the 14 required units, and containing the recommendation of the principal. Forms for such certificates, prepared by the University, must be used, and may be obtained from the Registrar. *These certificates should be sent to the University before August 1st.*

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

Principals of accredited schools are requested to note the statement regarding the examination of freshmen in English, as

stated under the heading Scope of the Preparatory Work (see Index), and also the statement regarding the additional requirement and examination in algebra for admission to the College of Engineering, as stated under Requirements for Admission. (see Index).

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

Schools Outside of Wisconsin.—The following regulations will apply to graduates of schools from without the state:

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

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

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

Credentials properly certified by the principal should, in all

cases, be submitted for approval by the University *before August 1st.*

GRADUATES OF NORMAL SCHOOLS

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

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

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

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

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

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

STUDENTS FROM OTHER COLLEGES AND UNIVERSITIES

Students from other institutions, who have pursued standard college courses equivalent to those of the University, will be admitted, and will receive credit for such courses upon the presentation of proper certificates of creditable standing and honorable dismissal. Blank forms for this purpose are provided by the University and transfer records from other institutions are required to be made out on these forms and submitted for consideration in advance of the opening of the University. Transfer records must be accompanied by a letter of honorable dismissal.

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

Law School will receive credit for their law studies toward graduation in the institution from which they come, to amounts to be determined by those institutions.

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

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

ADMISSION OF ADULT SPECIAL STUDENTS

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

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

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

FEES AND EXPENSES

GENERAL REQUIREMENTS

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

Graduate students pay the same fees as undergraduate students of the College of Letters and Science, but all fellows and graduate scholars are exempt from the non-resident tuition fee, and honorary fellows and honorary scholars are exempt from both the non-resident and incidental fees. Graduate students *in absentia* pay the same fees as graduate students in attendance at the University, provided that after such students have paid fees to the amount they would naturally pay, if in attendance, for the degree for which they are candidates, no further fee will be required. Members of the instructional and research force of the University and members of the research staff of the State Geological and Natural History Survey who are candidates for degrees shall pay such fees as are prescribed for graduate students resident in Wisconsin, but the total fee so paid shall be limited to the aggregate sum required of students giving to such candidacy their entire time during the period ordinarily required to obtain the degree sought. The period ordinarily required to obtain a master's degree or corresponding professional degree shall be construed as two semesters, and the corresponding period for the doctor's degree as seven semesters.

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

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

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

Upon the recommendation of the Commandant of the Department of Military Science, the Secretary of the Regents is 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	$35 00
Incidental fee for all students, per semester	12 00
Additional fee for students, electing studies in the Law School, per semester hour	3 00

Medical School

Resident tuition	FREE
Non-resident tuition, per semester	$35 00
Incidental fee for all students, per semester	17 00

College of Engineering

Resident tuition	FREE
Non-resident tuition, per semester	$35 00
Incidental fee for all students, per semester	17 00
Summer vacation work	7 00

College of Agriculture

Resident tuition	FREE
Long Course, non-resident tuition, per semester	$35 00
Incidental fee for all long course students, per semester	12 00
Incidental fee for all short and dairy course students, per term	6 50
Tuition fee for non-resident short and dairy course students, per term	15 00
Lecture fee for non-resident short and dairy course students, per term	10 00
Farmers' Course	FREE

Law School

Resident tuition	FREE
Non-resident tuition, per semester	$35 00
Incidental fee for all students, per semester	12 00

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

Summer Session

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

School of Music

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

University Demonstration School

Tuition, per semester	$30 00

Library School

In the Library School the tuition is $50 per year for residents of Wisconsin and $100 per year for non-resident students. This is payable to the cashier of the school. A detailed statement in regard to these fees is given in that part of the catalogue descriptive of the Library School.

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. For detailed statement see Graduate School. 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 li-

brary of the required number of printed copies of the thesis within two years.

LABORATORY FEES

Biological Laboratories.—The laboratory fee for the elementary course in biology and for the other five unit-hour courses is $8 per year, or $4 per semester. The fee for comparative anatomy is $5 a semester; for histology and embryology $10 a semester. The fees for human anatomy are: osteology, $2; dissection, $10 per part dissected. There is also a breakage fee of $2.50 a semester. The laboratory fee for physiology course 1b is $5.00 of which $3.00 is returnable, for course 5, $15.00 of which $4.00 is returnable, and for physiological chemistry $15.00 of which $5.00 is returnable. The fee for bacteriology is $2.00 for each unit-hour of credit with an additional fee for breakage of $2.00. The fee for pharmacology and toxicology is $10.00, of which $5.00 is returnable.

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

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

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

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

College of Mechanics and Engineering.—The charge for laboratory work is $2 per unit-hour (two hours per week of actual work) per semester.

Course in Pharmacy.—See chemical and biological laboratories.

College of Agriculture.—The charge for each unit-hour of laboratory work in the various departments is $1.00 per semester. A breakage deposit of $3.00, of which the unused balance is refunded at the end of the semester, must be made for each course in which laboratory work is done. The total fees for laboratory work during the first two years of the four-year

course are approximately as follows: Freshman year, first semester, less the refund, $18, second semester, $12; sophomore year, first semester, $18, second semester, $5. The cost during the remainder of the course and for graduate work depends upon the nature of the work elected. Laboratory fees must be paid before the student can enter classes. Resident short course students pay a laboratory fee of $5, non-resident, $15. All students in the winter dairy course pay a laboratory fee of $10, and in the summer course, $5. Non-residents in the winter dairy course pay a laboratory fee of $20, and in the summer course, $15. All dairy course students pay a refundable key and breakage deposit of $2.

GYMNASIUM PRACTICE AND MILITARY DRILL

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

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

Young women are required to take gymnastic exercises during the first two years of their course. A uniform gymnasium costume is required and can be purchased in the fall at the gymnasium office. Price $5.00.

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

CHADBOURNE HALL

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

Applications for rooms in the Hall may be made at any time to the Bursar of the Regents, and must always be accompanied by a deposit of $10. The ten juniors and fifteen sophomores resident in Chadbourne Hall first applying for rooms in the Hall will be accepted and will be given their choice of rooms. The number of sophomores received in the Hall is limited to thirty-five. Other applications will be received only from freshmen

until August 1st, after which applications from sophomores, juniors, and seniors will be received up to the capacity of the Hall.

Rooms are assigned August 1 by the Mistress of the Hall in the order of application. The deposit of $10 required from all students when making application will be credited on the rent of the room for the second semester if taken; but if not taken, it will be forfeited, unless notification is received by the Mistress prior to August 15. The balance due for rent must be paid to the Bursar not later than the second week after the beginning of each semester. Applicants must accept the rooms assigned to them either in writing or in person before the opening day of the school year or they will forfeit the room.

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

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

Each room of Chadbourne Hall is provided with rugs, a dresser, washstand, a three quarter iron cot, rocker, study chair, study table, bookshelves and window shades, but occupants are expected to provide towels, napkin rings, sheets, pillow cases, blankets and counterpanes or couch covers for the school year. (These, however, are furnished by the University for the summer session.) The present cost of board in Chadbourne Hall is $4.25 per week.

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

The young women who occupy this building are under the immediate charge of the Mistress; they must board in the Hall, and

are expected cheerfully to conform with requirements necessary for a family of students.

ROOMS AND BOARD

Rooms, furnished and unfurnished, can be obtained in the city at prices per week ranging from $2 to $5 a person. The cost of board in clubs is from $3 to $4 a week; in private families and boarding houses from $4 to $5.50 a week. Many students obtain rooms or board in families or clubs by rendering service; but these places are eagerly sought for, and cannot always be obtained at once. Those dependent upon themselves for support should not come to the University unless they have a reasonable fund.

DEGREES

FIRST DEGREES

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

Academic

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

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

Professional and Technical

BACHELOR OF LAWS.

BACHELOR OF SCIENCE (AGRICULTURE).

BACHELOR OF SCIENCE, HOME ECONOMICS COURSE.

BACHELOR OF SCIENCE, CIVIL ENGINEERING COURSE.

BACHELOR OF SCIENCE, MECHANICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, ELECTRICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, APPLIED ELECTROCHEMISTRY COURSE.

BACHELOR OF SCIENCE, CHEMICAL ENGINEERING COURSE.

BACHELOR OF SCIENCE, MINING ENGINEERING COURSE.

BACHELOR OF SCIENCE, CHEMISTRY COURSE.

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

BACHELOR OF SCIENCE, MEDICAL SCIENCE COURSE.

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

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

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

A graduate of any of the courses may receive the baccalaureate degree of any other course by completing the additional studies taken in one year, and for a second bachelor's degree in the College of Letters and Science there are required one year's additional study and a special thesis.

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

HIGHER DEGREES

The University confers in course the degrees of *Doctor of Philosophy* and *Doctor of Public Health.* 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, or who have completed one of the advanced engineering courses, may receive the degree of *Civil Engineer, Mechanical Engineer, Electrical Engineer, Chemical Engineer or Mining Engineer.* The degree of *Master of Pharmacy* is conferred as a second degree upon *Graduates in Pharmacy.*

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

THE COLLEGE OF LETTERS AND SCIENCE

EDWARD A. BIRGE, Dean

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF ARTS

1. General Conditions

The *credit* is the standard for computing the amount of work required for graduation. This is equal to one hour of recitation or lecture per week for one semester. Students are expected to secure 15 credits per semester in recitations, lectures, and laboratory work, making 30 credits per year, and 120 for the course. In addition men are required to take two hours per week of physical training during the first two years and secure a total of 4 credits. They are also required to drill two hours per week during the first two years, giving 4 credits. Women are required to take four hours of physical training per week during the first two years and secure 8 credits. The total requirements for class room work, military drill, and physical training are, therefore, 128 credits.

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

For the special requirements of candidates for the degree of B. A. in the Commerce Course or the Medical Course see announcement under those heads.

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

2. Required Studies

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

b. Language: 16 credits for those who offer four units or more of foreign language at entrance; 24 credits for those who offer 2 or 3 units of language at entrance. Those who offer less than 2 must also make up deficiency in preparation by extra work, see p. 97. The work shall be in year courses in two languages. Ordinarily the two must be chosen from the following groups: Greek (classical), Latin, French, German; but advanced work in another foreign language, to an amount not exceeding eight credits, may constitute one of the two languages, 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 credits required for graduation, though not as part of the required credits of language.

c. Two of the following: Natural Science, 10 credits; Mathematics, 6 credits; History, 6 credits; this must be a 3 credit course extending through 2 semesters.

Under natural science are included botany, zoology (or a combined course, biology 1), chemistry, physics, and geology. All are five credit courses with laboratory work, or field work in geology.

3. Major Study and Thesis

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

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

determine the manner in which the work of the major shall be completed; the work required in the major (including thesis and required work) shall not be less than 20 credits, nor more than 40 credits; the thesis receiving 4 credits.

Thesis.—All candidates for a baccalaureate degree are required to present a graduating thesis, the subject of which shall be approved by the student's adviser and filed with the chairman of the department in which the candidate is taking his major. The thesis shall represent some phase of the student's work in the major study and shall be of a scholarly character. It shall be typewritten and bound according to specifications furnished by the Librarian of the University; and before it is accepted it shall be approved by the instructor under whom the work has been done. It shall be deposited in the University Library by the Thursday before Commencement.

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

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

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

These substitutes shall involve work equivalent to at least 4 credits, and shall be so certified by the instructor on the report card of each student taking either substitute. The several papers of each student shall deal with correlated subjects, and shall be prepared with due attention to expression and to logical form. Before any student's papers shall be finally accepted as a whole, they shall be typewritten and bound together according to specification obtaining in the case of the thesis. They shall be deposited in the University Library by the Thursday before Commencement.

Electives

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

5. Studies of the Freshman Year

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

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

Greek: 5 or 3 credits; two semesters.
Latin 5 or 3 credits; two semesters.
German: 4 credits; two semesters.
French: 4 credits; two semesters.
Spanish: 4 credits; two semesters (only in the Course in Commerce).

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

Mathematics:
Algebra: 3 credits; one semester.
Trigonometry: 3 credits; one semester.

These courses in mathematics are repeated each semester.

Science:
Biology: 5 credits; 2 semesters; 2 lectures, 4 laboratory periods, 1 recitation.
Chemistry: 5 credits; 2 semesters; 3 lectures, 3 laboratory periods, 1 recitation.
Physics: 5 credits; 2 semesters; 4 lectures, 2 laboratory periods, 1 recitation.
Geology: 5 or 3 credits; 2 semesters.
Astronomy: 3 credits; 1 semester. (This course can not be offered as part of required science).

History:
Ancient History: 3 credits; 2 semesters.
English History: 3 credits; 2 semesters.
Medieval History: 3 credits; 2 semesters.

Students may secure 5 credits in history by taking two courses. In this case they will do the full work of one course, receiving 3 credits; in the other they will omit much of the collateral reading, reports, etc., and will receive 2 credits.

The student may take 14, 15 or 16 credits from these studies. The combination may be made by adding to English (3 credits)

two foreign languages from Group I (6 to 10 credits), with one subject from Group II (3 to 5 credits); or by taking but one foreign language (3 to 5 credits) with two subjects from Group II (6 to 10 credits). Students are advised to carry on the language, or languages, which they have had in preparatory schools. Those who come with only two years of language preparation will be expected to continue this preparatory language during the freshman year.

The following courses which are open to freshmen will be found described under Departments of Instruction on the following pages. The figures following the name of the department refer to the number of the course as given under the proper heading under Departments of Instruction.

English 1, Greek A, Greek 1, Latin A, Latin 1 and 2, French 1, 4, and 10, German 1 to 3, Mathematics 1 and 2, History 1, 5, and 10, Biology 1, Chemistry 1, Physics 1, Geology 1, 3, and 4, Astronomy 1. Only the 5 credit courses in science can be counted toward the science required for graduation.

6. 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 Agriculture (including the Course in Home Economics), the Law School, or the State Library School, studies to an amount not exceeding the equivalent of 20 credits. The conditions under which these studies may be elected are as follows:

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

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

3. Certain courses primarily intended for students of other colleges (such as mathematics 101) are listed in the departmental

announcements of the College of Letters and Science. Such courses are open to any student of suitable preparation in the same way as the courses primarily intended for the students of the College of Letters and Science.

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

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

REQUIREMENTS FOR A DEGREE IN THE COURSE IN COMMERCE

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

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE

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

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

REQUIREMENTS FOR A DEGREE IN THE COURSE IN MEDICAL SCIENCE

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

The departments which constitute the Medical School are at present also constituent departments of the College of Letters and Science. The courses offered in these departments are open for election to any students in the College of Letters and Science who are prepared to take them. Candidates for the degree of *Bachelor of Arts* are not permitted to matriculate in the College of Medicine for more than one year. Candidates for the degree of *Bachelor of Science, Medical Science Course* may be registered two years in the Medical School. They may, with the consent of their advisers, elect up to 18 credits per semester,

and may confine their work to the science and language groups of studies. The language requirements are those required for admission to the Medical School. (See Index).

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF PHILOSOPHY

Course for Normal School Graduates

Graduates of the advanced course 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). A special course for normal-school graduates has been arranged, leading to the degree of *Bachelor of Phliosophy.* Sixty credits are required for the degree, which may be gained in two years. The course contains a minimum required amount of advanced studies in philosophy and education,—six credits in each—with the privilege of further elections in those subjects. All courses in philosophy, except course 1 (Elementary Psychology) are open to election by normal school graduates. In education, no elementary course may be elected by a normal school graduate; the courses which he may elect in fulfillment of requirements are explicitly indicated on pp. 150–155 of the catalogue. Teachers' courses in the various departments may *not* be elected in fulfillment of the requirements in philosophy and education. This course also requires a continuous study of one foreign language (Latin, French, or German) during the two years of the course,—that is, a total of sixteen credits. The student must also complete a major in some department on the same conditions as obtain for the B. A. degree. (See p. 124.) Any advanced courses in the College of Letters and Science for which the student is prepared may be elected by him but the required work, including a minimum of twenty credits in the major study, amounts to at least forty-eight credits. The student may not take courses that amount to more than sixteen credits for the first semester, and he is under the same rules regarding number of hours as the student in the B. A. course. (See p. 123.) It is expected that the normal school graduate will give special attention to preparation for teaching some one branch of instruction, and he may choose his electives so as to attain this end. He must on entering select the work of some one department as his

major study. His adviser will be assigned from that department, and it will be the duty of the adviser to arrange the student's work so that he may satisfy the requirements, both of the course and of the major study.

Students in the Course for Normal School Graduates may not elect studies from other colleges, except by special permission. This will ordinarily be granted only when the studies desired are necessary for the future work of the student as a teacher. Application for such permission should be made through the adviser to the dean.

Any student in this course who offers work in foreign language equal in amount to that demanded 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 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.

A student who completes the course for normal school graduates may secure the University Teachers Certificate (see p. 132) provided he completes a teacher's course in his major subject.

In the first semester the student should begin foreign language, take part of the required courses in philosophy and education, and begin his major study. The course of study will be as follows:

JUNIOR YEAR. Foreign language (each semester), 4 or 5 credits; philosophy or education; major study; electives; total credits first semester, 14–16.

SENIOR YEAR. Continuation of foreign language; completion of required philosophy and education; major study and thesis; electives.

Sixty credits required for graduation.

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 6 credits.

Candidates for the degree of *Bachelor of Arts* who desire to graduate in three years may do so by obtaining 17 or 18 credits per semester after the first semester of freshman year, and by attending three summer sessions, thus securing a total of 120 credits. Permission to take work to this amount will be given only to students, whose standing in their studies is wholly satisfactory. No credit will be given for repetition in the Summer Session of studies taken in the regular session of the University, or for repeating in the University work done in the summer. Students will need to select carefully their work for the summer with reference to the required and elective studies of the course in which they intend to graduate. The Summer Session offers exceptional opportunities for the preparation of a senior thesis. Any student who expects to shorten his course by means of the Summer Session should consult his adviser in selecting his studies.

PERIOD OF RESIDENCE

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

STUDENT ADVISERS

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

THE UNIVERSITY TEACHERS' CERTIFICATE

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

For requirements for teachers' certificate, see Index.

HONORS IN THE COLLEGE OF LETTERS AND SCIENCE

Honors are awarded at two stages of the undergraduate course: (1) at the end of the sophomore year, and (2) at graduation.

Sophomore honors are awarded on the basis of work done and standings obtained the first three semesters, in two or more departments, preferably in allied fields. By awarding honors so early in the college course the faculty wishes to recognize seriousness of purpose and marked excellence on the part of the student.

Graduation honors are of two kinds. (a) Honors will be given for an exceptionally fine or original thesis, without any consideration of the student's previous record. (b) Senior honors are awarded for independent work done outside the regular courses in two or more departments during the junior and senior years. Candidates for honors will arrange for this extra work with the department in which they major, and will be examined on it by a special committee of all the departments involved.

DEPARTMENTS OF INSTRUCTION

ANATOMY

PROFESSOR BARDEEN; ASSOCIATE PROFESSOR MILLER; MR. HELM.

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

For Undergraduates and Graduates

105. Comparative Anatomy. *Second semester; M., W., F.*, 1:30 to 3:30. Mr. WERBER.
110. Histology and Organology. *First semester; M., W., F.*, 9 to 12; *four credits.* Mr. MILLER.
115. Vertebrate Embryology. *Second semester; Tu, Th., S.*, 8 to 10; *three credits.* Mr. BARDEEN, Mr. ALLEN.
121. Human Anatomy. *Throughout the year; daily* 8 to 5:30; *six credits.* Mr. BARDEEN.
122. Topographical Anatomy. *Second semester; Tu., Th.*, 1:30 to 3:30; *two credits.* Mr. MILLER.
123. Special Human Anatomy.
126. Neurology. *Second semester; M., W.*, 8 to 11; *three credits.* Mr. MILLER.
130. Advanced Work in Anatomy.
131. Historical Seminary. Mr. MILLER.

For Graduates

235. Investigation under Direction.
236. Journal Club.
240. Independent Investigation.

ASTRONOMY

PROFESSOR COMSTOCK.

For Undergraduates

1. General Astronomy. A rapid survey of the fundamental concepts of astronomy, supplemented by a direct study of the sky. *First semester; M., W., F.*, 2:30.

6. Astronomical Practice. Determination of time, latitude, and the direction of the meridian, together with drill in numerical computations. *Second semester; until May* 1, *twice a week at an hour to be arranged; after May* 1, *three evening meetings a week.*

Elective for juniors in Civil and Sanitary Engineering.

7. Advanced Field Astronomy. Spherical astronomy, the method of least squares, theory and practice of the more refined methods for the determination of time, latitude, and azimuth. *Throughout the year.*

Open to election by students who have completed course 6.

For Undergraduates and Graduates

113. Spherical Astronomy. Apparent motion of the celestial sphere. Astronomical coordinates and their transformation. Parallax. Refraction. Time. Use of the ephemeris. *First semester; M., W.*, 10.

114. Practical Astronomy. Theory and use of the sextant, theodolite, transit, and equatorial. *Second semester; M., Tu., W., Th.*, 2 to 4.

116. Orbital Motion. The differential equations of undisturbed motion and their integrals. Computation of ephemerides. Orbits of double stars and comets. *Throughout the year; conference M.*, 11, *with two or four hours of laboratory work a week.*

For Graduates

220. Perturbations. The general equations of disturbed motion. Special perturbations. Mechanical quadratures, with numerical applications. A continuation of course 116, and open only to students who have completed that course or its equivalent.

222. The Method of Least Squares. The theory with application to numerical computations. *Throughout the year; conference F.*, 11, *with two or four hours laboratory work a week.*

225. Research Courses. Graduate students desiring to pursue advanced astronomical studies will be received in the Washburn Observatory as assistants. Facilities for independent original work will be afforded to such students, and their work, if of sufficient value, will be printed in the *Publications of the Washburn Observatory.*

BACTERIOLOGY AND HYGIENE

PROFESSOR RAVENEL, M. D. (Chairman L. & S.,); ASSOCIATE PROFESSORS FROST, HASTINGS, (Chairman Agr.); ASSISTANT PROFESSORS FULLER, HOFFMANN, MR. WRIGHT, MR. NEUMANN, MR. BEACH, DR. SMITH; MISS ARMSTRONG, MR. NELSON, MISS FOX.

For students desiring a general laboratory course in Bacteriology, course 1 should be taken. On the basis of this general course, the student is then able to take up work in special lines. Courses 1, 2, 9, 1a, 120 or 121 or 23, are prerequisites for major work in bacteriology. Special courses are offered for medical students (course 2), home economics students (course 9), and engineers (course 108). Elementary courses, without laboratory work, are open to all (7) and (6).

For Undergraduates

1. General Bacteriology. A course designed to give an understanding of the morphology and physiology of bacteria, and laboratory training in cultural and microscopical technique. *Repeated each semester; three credits.* Given in the College of Letters and Science. *Lectures; W., F.*, 3:30; *two laboratory periods of two hours each per week.* Mr. FROST, Mr. FULLER, Mr. NEUMANN, MISS ARMSTRONG, Mr. NELSON, MISS FOX.

1. A. Agricultural Bacteriology. A general discussion of the relation of micro-organisms to the soil, to the dairy, to animal diseases, to food preservation, and to the sanitation of the home. Prerequisite, course 1, general bacteriology. *Second semester; two lectures; two laboratory periods; four credits.* Mr. RAVENEL, Mr. HASTINGS, Mr. HOFFMANN, Mr. WRIGHT.

2. Medical Bacteriology. A consideration of the relation of bacteria to disease processes in man and animals. A course designed to give students who intend to study human or veterinary medicine, a survey of the subject of pathogenic bacteria. This course should be taken by students intending to devote themselves to general bacteriology. *First semester; lectures and laboratory; five credits.* Mr. RAVENEL, Mr. SMITH.

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

3 & 19 (Agr.). 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 and should be arranged for with the professor under whom the work has been elected.

6. Communicable Diseases. Lectures and assigned reading dealing with the causes and means of preventing communicable diseases. It is desirable that this course be preceded by course 7. Mr. FROST.

7. General Hygiene. Lectures and assigned reading dealing with the subjects of personal and public hygiene. The subject is considered from a general rather than technical standpoint and is open to all students in the University. A number of outside experts in hygiene as well as profes-

sors in other departments, will lecture to the class. *Repeated each semester; one credit.* Mr. RAVENEL, Mr. FROST.

For Undergraduates and Graduates

104. Advanced Work in General Bacteriology. Students who have had sufficient preliminary work (course 1 and courses 1a, 2, 9, 120, or 121, or 21 or their equivalent) will be assigned special problems for study. *Laboratory work and conferences.* Mr. RAVENEL, Mr. FROST, Mr. FULLER.

When the number of students warrants it this course will be extended to include work in practical hygiene.

108. Biology of Water Supplies. This course considers the technique of water examination, the hygiene of water-borne diseases, the examination of filters, the disposal of sewage, and the interpretation of analyses. Prerequisite, course 1, general bacteriology. *Lectures and laboratory work; three credits.* Mr. RAVENEL, Mr. FULLER.

111. Immunity. Includes a study of the phenomena and theories of immunity in general as well as the various infectious diseases. Lectures and reports. Open only to advanced students. Mr. RAVENEL.

111a. Laboratory Course in Immunity. This is an experimental course and includes a study of cytotoxins, agglutinins, precipitins, toxins, antitoxins, opsonins, etc. *First semester; two credits or more.* Mr. FROST.

112. Pathogenic Protozoa. This includes a study of the most important of the protozoa known to cause human and animal diseases. Open only to advanced students. Lectures, demonstrations, and reports. *Second semester; one credit.* Mr. FROST.

120. Dairy Bacteriology. A consideration of the relation of bacteria to market milk, butter, and cheese. Prerequisite, courses 1 and 1a. *First semester; one lecture; three laboratory periods; three credits.* Mr. HASTINGS, Mr. WRIGHT.

22. Transmissible Diseases of Animals. Given in connection with course 2, which see. Mr. RAVENEL.

121. Soil Bacteriology. A study of the relation of bacteria to soil processes. Prerequisite, courses 1 and 1a. *First se-*

mester; lecture, W., 10; *two laboratory periods; three credits.* Mr. HOFFMANN.

140. Journal Club. A club consisting of instructors and advanced students in the department meets every second week throughout the year. Advanced students are required to report on the progress in science along lines assigned to them by the program committee. This necessitates the reading of current scientific journals furnished by the department.

For Graduates

205 & 230. Agr. Research Work in Bacteriology. Opportunity is offered for work in original investigation, which may be arranged for on consultation. Prerequisites, courses 1, 2, 8, 9, 120, 121. Mr. RAVENEL, Mr. FROST, Mr. HASTINGS, Mr. FULLER, Mr. HOFFMANN.

231. Seminar in Agricultural Bacteriology. A discussion of the research work of the department and reports on articles of interest to the students. *Throughout the year; once every two weeks; one credit.* Mr. HASTINGS.

BIOLOGY

Study in the biological sciences is conducted in the independent, though coordinated departments of Botany, Zoology, Anatomy, Physiology, Pathology, Pharmacology and Toxicology, and Bacteriology and Hygiene.

1. General Biology. An elementary one-year course in general biology may be taken by combining Botany 1 (first semester) and Zoology 1b (second semester), which see. Introductory to botany, zoology, anatomy, bacteriology and physiology, and a prerequisite for all advanced work in these departments. *Five credits per semester.*

BOTANY

PROFESSOR ALLEN (chairman); ASSISTANT PROFESSORS DENNISTON, GILBERT, OVERTON; DR. DAVIS; MR. BARTHOLOMEW, MR. STEIL, DR. STEWART; MISS BACHMAN, MISS BURTON, MR. BYARS, MR. GROSSENBACHER, MR. HENDERSON, MR. HERREN, MR. JOHNSON, MR. PULLING, MR. SMITH.

Major in Botany

For a major in botany, a minimum of thirty-four credits is required; this includes the thesis, and must also include an elementary course in Zoology (Zoology 1b or its equivalent).

The completion of the new Biology Building will greatly increase the laboratory and other facilities of the department.

For Undergraduates

1. General Botany. An introductory course, preliminary to all advanced work. It may be taken, in combination with Zoology 1b, as part of an elementary course in general biology. *First semester; lectures, M., W.,* 2:30. Mr. ALLEN. *Eight hours of laboratory work and one recitation per week.* Mr. OVERTON, Mr. GILBERT, Mr. BARTHOLOMEW, Mr. STEIL, Mr. STEWART, Miss BACHMAN, Miss BURTON, Mr. BYARS, Mr. GROSSENBACHER, Mr. HENDERSON, Mr. HERREN, Mr. JOHNSON, Mr. PULLING, Mr. SMITH.
2. Elementary Morphology and Physiology. A continuation of course 1 for those who wish a year's course in general botany. May be taken as part of a teacher's minor or, with course 1, in satisfaction of the requirement of a year of natural science. *Second semester, M., Tu., W., Th., F.,* 1:30 to 3:30; *five credits.* Mr. OVERTON, Miss BACHMAN.

16. Theses. It is important that senior thesis subjects be selected, whenever possible, before the close of the junior year.

For Undergraduates and Graduates

103. Morphology of Algae. An outline of the development of the different series and their relationships, and discussion of problems of research in connection with the various

groups. *First semester; M., Tu.*, 1:30 *to* 3:30; *lecture, Tu.*, 2:30; *two credits.* Mr. OVERTON, Mr. STEIL.

104. Morphology of Fungi. Parallel to course 103, and taking up the morphology of the various groups of fungi with especial emphasis upon those of economic importance. *First semester; W., Th., F.*, 1:30 *to* 3:30; *lecture, Th.*, 2:30; *three credits.* Mr. OVERTON, Mr. STEIL.

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

106. Morphology of Seed Plants. A study of the life history of a few types of gymnosperms and angiosperms. *Second semester; M., W., F.*, 1:30 *to* 3.30; *lecture, F.*, 2:30; *three credits.* Mr. OVERTON, Mr. STEIL.

110. Plant Histology. A systematic study of the tissues of seed plants and ferns. Use of reagents and stains, section cutting and mounting. *First semester; M., W., F.*, 8 *to* 10; *three credits.* Mr. DENNISTON.

111. Microscopical Examination of Drugs and Foods. The characteristics of powdered drugs and food products, and methods of detecting adulterations. *Second semester; M., W., F.*, 8 *to* 10; *three credits.* Mr. DENNISTON, Mr. HERREN.

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

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

121. Classification of Parasitic Fungi. Field and laboratory study of types of the various groups. *Throughout the year; one credit per semester.* Mr. DAVIS.

122. Special Morphology and Classification. Opportunity for advanced work on algae, bryophytes or pteridophytes is offered to students of adequate preparation.

129. Classification of Cultivated Plants. A brief systematic course dealing with the structure and relationships of the common crop plants and weeds. *First semester; lecture, M.*, 10; *laboratory work F.*, 10 *to* 12; *two credits.* Mr.

STEWART, M.ss BACHMAN, Mr. BARTHOLOMEW, Mr. HENDERSON, Mr. JOHNSON.

130. Identification and Classification of Seed Plants. A study of the floral structure of types of seed plants, with especial attention to those of economic importance. Practice in the determination of species by the use of a systematic key. Lectures, laboratory, and field work. *Second semester; M., Tu., W., Th., F.,* 8 *to* 10, *and Saturday excursions; five credits.* Mr. DENNISTON, Mr. STEWART.

131. Dendrology. A study of the structure and characteristics of forest trees. Lectures, laboratory, and field work. Prerequisite, course 1 or its equivalent. *Second semester; two credits.* Mr. DENNISTON.

132. Pharmacognosy. A study of Materia Medica, including the origin, history, properties, and uses of drugs. Required of all students in pharmacy. *Throughout the year; two credits.* Mr. DENNISTON.

133. Pharmacognosy. A study of the microscopic structure and characteristics of types of drugs. *First semester; three credits.* Mr. DENNISTON.

134. Pharmacognosy. An abridgement of the work given to pharmacy students is offered for those intending to study medicine. *First semester; three credits.* Mr. DENNISTON.

135. Sources and Collection of Crude Drugs. Laboratory and field work, supplemented by lectures and recitations. Required of first-year students in pharmacy. *First semester; one credit.* Mr. DENNISTON.

146. Plant Physiology. Lectures and laboratory work on the special physiology of the vascular plants. Prerequisite, course 1 or its equivalent. *Second semester; lectures, Tu., Th.,* 10; Mr. OVERTON. *Laboratory hours to be arranged; four credits.* Mr. BARTHOLOMEW, Mr. BYARS, Mr. GROSSENBACHER, Mr. HENDERSON, Mr. JOHNSON, Mr. PULLING, Mr. SMITH.

150. Cytology. General physiology of organisms. Lectures and laboratory work on the nutrition, growth, reproduction, and irritability of the cell. Prerequisite, courses 103 to 106, or their equivalent. *Throughout the year; M., Tu., W., Th., F.,* 10 *to* 12; *five credits.* Mr. AILEN, Mr. GILBERT.

152. Cytology of the Fungi. Lectures, demonstrations, and laboratory work on the special cytology of the various groups of fungi. Prerequisite, courses 104 and 150, or their equivalent. *Second semester; hours on consultation; two credits.* Mr. GILBERT.

154. Hybridization, Parthenogenesis, and special problems in the fertilization of the angiosperms. A discussion of some of the more fundamental principles of plant breeding. Prerequisite, course 1 or its equivalent. *First semester; hours on consultation; two credits.* Mr. OVERTON.

156. Facts and Tneories of Heredity. A discussion of theories of heredity in the light of results of recent experimental and cytological investigations. Prerequisite, course 1 or its equivalent. *Second semester; two lectures a week and assigned readings; two credits.* Mr. ALLEN.

160. Botanical Methods. Practice in the preparation of laboratory outlines, in the collection and preservation of material, and in methods of growing various algae and fungi for use in the class room. Prerequisite, courses 103 to 106. *Second semester; two credits.* Mr. GILBERT, Miss BURTON.

For Graduates

215. Seminary. For the study of topics of general botanical interest, and the presentation of the results of investigation. Conducted by the members of the staff.

216. Research. Students whose preparation is adequate will be assigned special subjects of investigation. This will constitute the greater part of a graduate major in botany.

CHEMISTRY

PROFESSORS FISCHER, KAHLENBERG (Chairman), KREMERS, LENHER; ASSOCIATE PROFESSOR WALTON; ASSISTANT PROFESSORS KRAUSKOPF, MATHEWS; MR. BARNEBEY, DR. CARLETON, MR. ELLINGSON, DR. JONES, DR. KLEIN, MR. KOENIG; MR. BAKER, MR. BURCHARD, MR. COTTON, MR. DIETRICHSON, MR. EVANS, MR. HANSON, MR. HEISE, MR. JUDD, MR. LANGENHAN, MR. LONG, MR. LYNN, MR. MELOCHE, MR. NEBEL, MR. NELSON, MR. SCHUETTE, MR. WOLLIN.

For Undergraduates

1. General Chemistry. A general introductory course. In the first semester the work consists of the chemistry of the non-metals, while the second semester is devoted to the metals and qualitative analysis. *Lectures M., W., F.*, 10. Mr. KAHLENBERG, Mr. WALTON, Mr. KRAUSKOPF, and assistants.
2. General Chemistry for Freshmen in the College of Engineering. Two experimental lectures and two two-hour laboratory periods per week. *Lectures Tu., Th.*, 10. Mr. KAHLENBERG, Mr. WALTON, and assistants.
3. General Chemistry for Students in Pharmacy. The first semester is devoted to the chemistry of the non-metals and to inorganic preparations, while in the second semester the work consists of qualitative analysis. *Lectures M., W., F.*, 10. Mr. KAHLENBERG, Mr. WALTON, Mr. LYNN.
4. Thesis. Work for the baccalaureate thesis may be elected in any branch of chemistry in which the student has sufficient preparation. Not later than the beginning of the senior year the work should be arranged with the professor under whom it has been elected. *Two credits per semester.*
5. The Teaching of Chemistry. A course considering both the matter to be presented and the methods of teaching to be adopted in a high school course of chemistry. The prerequisites for the course are course 1, the first semester of course 120, and five unit-hours of work in course 11; the latter may be taken during the same semester as this

course. Two credits toward the University Teachers' Certificate will be allowed students who have completed this course. *Two lectures or recitations per week during the second semester.* Mr. WALTON.

6. Advanced Inorganic Chemistry. Required of students in Pharmacy. Course 3 is a prerequisite. *First semester; lectures and recitations, Tu., Th., F.,* 10; *five credits.* Mr. KREMERS, Mr. HANSON.

11. Quantitative Analysis. Introductory laboratory course accompanied by weekly lectures. Mr. LENHER, Mr. CARLETON, Mr. BARNEBEY, Mr. COTTON, Mr. MELOCHE, Mr. SCHUETTE.

11a. Quantitative Analysis. For agricultural students. Introductory laboratory course with lectures and recitations. Mr. FISCHER, Mr. CARLETON, Mr. BARNEBEY, Mr. SCHUETTE, Mr. MELOCHE, Mr. COTTON.

15. Quantitative Analysis. Designed especially for students in sanitary, food, and physiological chemistry and all those intending to specialize along biological lines. Introductory laboratory course with lectures and recitations throughout the year. Mr. FISCHER, Mr. CARLETON, Mr. BARNEBEY, Mr. SCHUETTE, Mr. MELOCHE, Mr. COTTON.

18. Alkaloid Assay. One hour required of students in the pharmacy course during second semester. Additional work may be elected upon consultation. Mr. FISCHER, Mr. LANGENHAN.

20b. Organic Chemistry. For students in pharmacy. Two-hour course. Recitations and laboratory work consisting largely in the preparation of the simpler organic chemicals used in medicine. Mr. FISCHER, Mr. LYNN.

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

40. Plant Chemistry. A three-hour study supplementary to pharmacognosy (Botany 132). *Lecture or Recitation, M.,* 10. Mr. KREMERS, Mr. HANSON.

For Undergraduates and Graduates

107. History of Chemistry. A general survey of the history of the development of modern chemistry. *One lecture per*

week with topics during the first semester; two credits. Mr. KREMERS.

108. Advanced Qualitative Analysis. Analysis of more complex substances, also compounds containing rare elements. Prerequisite, course 1. *First semester. Laboratory work accompanied by two lectures per week. Two or more credits.* Mr. KRAUSKOPF.

112. Quantitative Analysis. An advanced laboratory course, being a continuation of course 11 which must precede it. Mr. LENHER.

113. Water Analysis. A laboratory course with lectures. *First semester.* Mr. FISCHER, Mr. SCHUETTE.

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

116. Industrial Analysis. A laboratory course in the analysis of commercial products. *Second semester.* Mr. FISCHER.

117. Chemical Preparations. Laboratory course in the preparation of typical inorganic compounds. *At least two periods a week.* Mr. LENHER.

117a. Iron and Steel Analysis. A laboratory course in the analysis of the ores and metallurgical products of the iron industry. Mr. LENHER.

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

120. Organic Chemistry. Lectures and laboratory work. In the first semester the work will be chiefly on the aliphatic, and in the second semester on the aromatic compounds. *Lectures Tu., Th., 8, and six hours laboratory work per week.* Mr. FISCHER, Mr. JONES, Mr. NEBEL.

121. Preparation of Organic Compounds. This course may be taken as a continuation of course 120. The work will consist of the preparation of typical compounds of a more advanced nature. Mr. FISCHER, Mr. JONES, Mr. NEBEL.

128. Chemistry of Alkaloids. General survey course of the chemistry of alkaloids. *One lecture a week; second semester.* Mr. FISCHER.

129. Chemistry of the Volatile Oils, including their botanical relation and assay. *Work arranged upon consultation with the instructor.* Mr. KREMERS.

130. Physical Chemistry. Lectures and recitations supplemented by laboratory exercises in physico-chemical measurements. Must be preceded by chemistry 1. *Lectures and recitations, M., W., F.,* 8; *and laboratory work; five credits.* Mr. KAHLENBERG, Mr. MATHEWS.

131. Electrochemistry. Lectures and recitations twice a week. Laboratory work in electrochemical measurements supplements the lectures. *Lectures, Tu., Th.,* 9; *five credits.* Mr. MATHEWS.

132. Thermal Chemistry. Lectures and assigned readings dealing with the thermal phenomena accompanying chemical and physical change. *Second semester; lectures Tu.,* 8; *and one three-hour laboratory period a week.* Mr. MATHEWS.

133. Photochemistry. A detailed study of the influence of light upon chemical reactions. First semester. *Two lectures per week. Laboratory work as desired.* Mr. MATHEWS.

146. Chemistry of Foods and their Adulterations. Prerequisites, general chemistry 1, and one semester's work each in quantitative analysis and organic chemistry. *Second semester; five credits.* Mr. FISCHER.

For Graduates

222. Research in Organic Chemistry. Students desiring to become acquainted with the methods of research in organic chemistry may take work leading to theses for higher degrees. Mr. FISCHER or Mr. KREMERS.

224. Advanced Organic Chemistry. Advanced survey. *One lecture and one conference per week.* 1911–12. Mr. KREMERS.

234. Chemical Equilibrium. The subject treated during the first semester is the phase rule. The second semester will be devoted to the study of chemical dynamics. *One lecture or recitation a week.* Mr. WALTON.

235. Advanced Physical Chemistry. Lectures on selected topics. One lecture per week. Laboratory work as desired. Mr MATHEWS.

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

237. Research in General or Physical Chemistry. Students having sufficient training may take up research work in general or physical chemistry, for which every facility is furnished. This course is especially designed for graduates seeking higher degrees. *Hours to be arranged.* Mr. KAHLENBERG, Mr. MATHEWS.

238. Chemical Seminary. Original articles of importance in the different fields of chemistry will be studied in detail, with a view to broaden and deepen the understanding and to act as a stimulus to further research. *W.*, 4. Conducted by the members of the staff.

239. Chemistry of Colloids. Preparation and properties of colloids and their application in biology and the various industries. Prerequisites, course 30. *Second semester. One lecture per week.* Mr. KLEIN.

241. Advanced Plant Chemistry. *One lecture and one conference per week. Laboratory work to be arranged with instructor.* 1912–13. Mr. KREMERS.

242. Research work on alkaloids and the chemistry of foods. *Hours to be arranged.* Mr. FISCHER.

243. Research on volatile oils or other subjects of organic chemistry, with special reference to plant chemistry. *Hours to be arranged.* Mr. KREMERS.

251. Advanced Inorganic Chemistry. In 1912–13, a course of lectures will be given in which special attention will be directed to the discussion of modern theories of chemistry. *Tu., Th.*, 11. Mr. LENHER.

252. Inorganic Preparations. This course is preliminary for those intending to pursue research work in inorganic chemistry. *Laboratory work with one lecture or conference a week.* Mr. LENHER.

253. Research in Inorganic Chemistry. Full facilities are offered to those desiring to study systematically some of the more important problems in inorganic chemistry. Mr. LENHER.

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

COMPARATIVE LITERATURE

COMMITTEE IN CHARGE: PROFESSORS OLSON, SHOWERMAN; ASSISTANT PROFESSORS CERF, DODGE (Chairman), KIND.

The following scheme of courses in Comparative Literature was drawn up by conference of the various language departments as one means of correlating their work. It is designed to meet two main needs. (1) That of undergraduates who have not the command of foreign languages necessary to the fundamental study of international types and movements in literature, but who may wish to secure a general understanding of some of the more important of these. (2) That of graduate students, properly equipped with foreign languages, who may wish to supplement their work in particular literatures with detailed study of special interrelations. Courses of this comparative character have not infrequently been offered, and are being offered, by the different departments. The present scheme incorporates all such as are now in existence and provides others, some of which lie entirely outside the scope of any one department.

For Undergraduates

Comparative Literature A. Masterpieces of Romance literatures in English translations. Lectures and collateral reading from the works of Dante, Petrarch, Boccaccio, Ariosto, Tasso, Cervantes, Rabelais, Montaigne, Corneille, Molière, Racine and other writers. *Tu., Th.*, 11. Mr. CERF.

For Undergraduates and Graduates

Comparative Literature 101. Ancient Classical Epic. Its origin and development. Homer's *Iliad* and *Odyssey;* Virgil's *Aeneid.* The reading is in translations. *First semester; Tu., Th.*, 9. (Given 1912–13). Mr. C. F. SMITH.

Comparative Literature 102. Renaissance Epic: *Orlando Furioso, Jerusalem Delivered, The Faery Queen,* and *Paradise Lost.* The first two are read in translations. This course counts for the English major. *Second semester; Tu., Th.*, 9. (Given 1912–13). Mr. DODGE.

Comparative Literature 103. Ancient Classical Drama. *First semester; two hours a week.* (Omitted 1912–13).

Comparative Literature 104. Modern Classical Drama. *First semester; two hours a week.* (Omitted 1912–13).

Comparative Literature 105. Latin and Renaissance Drama. (Omitted 1912–13).

Comparative Literature 107. Contemporary Drama. This course attempts to explain recent movements and tendencies in the drama of the Continent and England. Plays not English are read in translation. The course counts for the English major. *Throughout the year; two hours a week.* Mr. DICKINSON.

Latin 118. Roman Satire from Ennius to Juvenal. The origin and development of formal literary satire among the Romans, with special reference to the works of Lucilius, Horace, Persius, and Juvenal. *First semester; two hours a week.* (Given 1912–13.) Mr. FISKE.

Comparative Literature 116. Modern Classical Satire in Italian, French, and English. From the beginnings in the sixteenth century to the close of the eighteenth. *Second semester; two hours a week.* (Given 1912–13.) Mr. DODGE.

For Graduates

Comparative Literature 215. Introduction to Medieval Drama. The liturgical system of the medieval church and each manifestation of liturgical drama within this system will be studied in detail. *First semester; one hour a week.* (Omitted 1912–13). See English 244. Mr. YOUNG.

German 246. Medieval Drama in Germany. The development of the drama up to the Renaissance, including the *Fastnachtspiele. First semester; two hours a week.* (Omitted 1912–13.)

French 252. Medieval French Drama. *Second semester; two hours a week.* (Omitted 1912–13.) Mr. H. A. SMITH.

English 249. English Religious and Didactic Drama. From the beginnings to the entrance of the Renaissance. *Second semester; two hours a week.* (Omitted 1912–13.) Mr. YOUNG.

Comparative Literature 218. The Renaissance in Romance Countries. *First semester*, Italian; *second semester*, French. *Two hours a week.* (Omitted 1912–13.) Mr. CERF.

Comparative Literature 219. Elizabethan poetry in its relations with France and Italy. Careful study of types, pastoral, lyric, epic, etc., and in particular of the literary relations of Spenser. *Throughout the year; two hours a week.* (Given 1912–13.) Mr. DODGE.

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

French 136. The Novel in Romance Countries. Mr. CERF.

French 243. The Old French and related versions of the Sept Sages de Rome and of Tristan et Isolt. Mr. SMITH.

French 248. The Beginnings of Medieval Literature. Mr. REED.

German 138. Shakspere in Germany. Mr. KIND.

German 242. The Literary Relations of England and Germany in the Eighteenth Century. Mr. KIND.

German 243. German Literature in America. Mr. GOODNIGHT.

German 245. Interrelations of German and French literature during the seventeenth and eighteenth centuries, with special reference to the novel. Mr. FEISE.

English 146a. The Ballad. Mr. BEATTY.

EDUCATION

PROFESSORS ELLIOTT, O'SHEA (Chairman); ASSOCIATE PROFESSOR HENMON; ASSISTANT PROFESSOR TRESSLER; DR. STARCH; MR. WELLS, MRS. HOYT, MR. STEVENSON, MR. BOHANNAN.

The chief aim of the work in this department is to treat education in its history, foundations, and practice in the spirit of contemporary thought. To this end, groups of courses are offered in each of the following: (1) The historical evolution of educational ideals, institutions, and practices as a basis for the intelligent interpretation of modern American education; (2) The more important educational movements of the present day; (3) The principles of mental development in the child and the race, with particular reference to educational aims and processes; (4) Educational psychology as a basis for the principles

of teaching, and of educational methods and practice; (5) Principles of education viewed in the light of contemporary biological, sociological, and psychological thought; (6) The organization, administration, and methods of supervision of public education; (7) Seminary and research courses in each of the main divisions of education, the purpose of which is to investigate and discuss in a critical manner unsolved problems in the several fields covered; (8) The observation of teaching under expert supervision.

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

Major in Education

Undergraduate students selecting education as a major subject will be required to obtain credit in approved courses amounting to twenty-two hours, inclusive of credit for thesis. Graduate students selecting education as a major will be expected to show familiarity with the general aspects of each of the divisions of education before they will be admitted to candidacy for either a master's or a doctor's degree.

Note: Students who plan to devote no more than six or eight hours to the work, are advised to elect two courses for two hours each in the junior year and complete the work in the senior year.

For Undergraduates

1. History of Modern Education. A study of the development of educational standards and institutions in Europe and America since the Renaissance. Lectures, discussions, and papers. *First semester; M., W., F.*, 11; *repeated second semester at same hour; two or three credits.* Mr. WELLS.

6. Public Education. An introductory survey of the American system of public education as an expression of the ideals of democracy: organization, characteristic features, and contemporary tendencies. *Each semester; Tu., Th.*, 9; *two or three credits.* Mr. ELLIOTT.

11. Mental Development. A study of (1) the general characteristics of development; (2) the theory of recapitulation in development; (3) motor development; (4) intellectual development; (5) social development; (6) mental economy and hygiene in development. *First semester; M., W., F.*, 10. *Second semester; M., W., F.*, 9; *two or three credits.* Mr. O'SHEA.

13. Principles of Education. The foundations of educational theory viewed in the light of contemporary thought. Also practical problems of the curriculum and methods of teaching, accompanied by observation of work in the University Demonstration School and in the public schools of Madison. *First semester; M., W., F.*, 9. *Second semester; M., W., F.*, 10; *two or three credits.* Mr. O'SHEA.

41. Educational Psychology. (a) Lectures and demonstrations. *Tu., Th.*, 11. (b) Laboratory practice parallel with lectures. *One laboratory period of two hours a week at hours to be arranged.* An introductory course in psychology is prerequisite for this course. *First semester; and repeated in the second semester; two or three credits.* Mr. HENMON, Mr. STARCH.

For Undergraduates and Graduates

102. History of Education. A general survey of ancient and medieval educational theories and institutions, with special attention to their bearing upon present-day educational problems. Prerequisite, course 1. *Lectures, discussions and assigned readings. First semester; M., W., F.*, 8; *two or three credits.* (Omitted 1912–13). Mr. WELLS.

103. History of American Education. Democratization of American education; evolution of, (1) educational institutions, (2) curriculum, (3) purposes and methods of

educators, (4) the teaching profession. Prerequisite, course 1 or 13. *First semester; Tu., Th.*, 11. Mr. WELLS.

104a. State School Systems. A study of the principles of organization, and of the typical agencies for the administrative control of American state educational systems. Prerequisite, course 1, 6, or 13. Open to graduates of normal schools. *First semester; Tu., Th.*, 10; *two or three credits.* Mr. ELLIOTT.

104b. Municipal School System. A study of the organization, administration and supervision of public education in American cities. Special attention to contemporary problems and to the development of supplementary agencies in public education. Prerequisite, course 1, 6, 13, or 104a. Open to graduates of normal schools. *Second semester; Tu., Th.*, 10; *two or three credits.* Mr. ELLIOTT.

105. European School Systems. A comparative study of the educational systems of Germany, France, and England, with special emphasis upon international relationships and those features possessing significance for American education. Prerequisite, course 1 or 6. Open to graduates of normal schools. *First semester; Tu., Th.*, 1:30; *two credits.* Mr. ELLIOTT.

112. Social Education. The social nature of pupils at different periods of development, together with a study of methods of managing individuals and groups in the school-room, on the playground, etc., so as to make them socially efficient. Prerequisite, course 11 or 13. Open to graduates of normal schools. *First semester; Th.*, 1:30 *to* 3:30; *two credits.* Mr. O'SHEA.

115. Contemporary Educational Movements. Contemporary movements affecting courses of study, the general character and method of teaching, and school organization and management. Prerequisite, course 1 or 13. *First semester; Tu., Th.*, 11; *two credits.* (Omitted 1912–13.) Mr. WELLS.

116. Educational Classics. With reference particularly to present problems respecting the nature and training of childhood and youth. Readings in Plato, Aristotle, Plutarch, Quintilian, Montaigne, Locke, Rousseau, Mill, and Spen-

cer. Prerequisite, course 1, 11, or 13. *Second semester; Tu., Th.*, 11. Mr. WELLS.

117. History of Industrial and Physical Education. Development of two special types of education with independent consideration given to each. Prerequisite, course 1, 6, or 13. *First semester; Tu., Th.*, 1:30; *two credits.* Mr. WELLS.

142. Research in Education. Students who wish to prepare theses on subjects dealing with educational psychology are expected to register for this course during the last semester of the junior year, or the first semester of the senior year. Prerequisite, course 11 or 41 or 214. *Throughout the year.* Mr. HENMON.

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

For Graduates

214. Genetic Psychology. The psychology of development in respect to some of the principal types of educational work. Prerequisite, course 11, 13, 41, or 217. Open to graduates of normal schools. May be elected successively, for the subject matter of the course is changed annually. Given alternately with course 217. *W.*, 7 *to* 9 P. M. (Omitted 1911–12). *Two credits.* Mr. O'SHEA.

217. Educational Values. A detailed inquiry concerning the values of studies and methods in present-day American education. Given in alternate years with course 214. Prerequisite, course 11, 13, 41, or 214. Open to graduates of normal schools. *W.*, 7 *to* 9 P. M.; *two credits.* Mr. O'SHEA.

220. Seminary in Education. The investigation and discussion of current educational problems. Each member is required to undertake a piece of research, and report upon it during the year. Prerequisite, course 11, 13, 112, or

214. Open to graduates of normal schools. *Hours to be arranged.* Mr. O'SHEA.

232. Seminary in Administration and Supervision of Education. Special subject for 1912–13, The Hygiene of Public School Buildings. Open to graduates of normal schools. *Tu.*, 7:30 *to* 9:30 P. M.; *one or two credits.* Mr. ELLIOTT.

233. Supervision of Instruction. The principles, methods, and problems of the supervision of instruction; with special reference to elementary and secondary schools of smaller cities. Special reports on basis of observation and study of instruction in the University Demonstration School and in typical elementary and secondary schools. Prerequisite, courses 6, 13 or 104b. Open to graduates of normal schools. *Second semester; Tu., Th.*, 1:30; *two or three credits.* Mr. ELLIOTT.

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

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

248. Seminary in Educational Psychology. Assigned topics and reports on recent experimental studies and researches in educational psychology. *Throughout the year; on alternate Wednesdays*, 4 *to* 6. Mr. HENMON.

University Teachers' Certificate

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

ENGLISH

PROFESSORS CUNLIFFE (Chairman), HUBBARD; ASSOCIATE PROFESSORS BLEYER, DICKINSON, LATHROP, PYRE, YOUNG; ASSISTANT PROFESSORS BASSETT, BEATTY, CAIRNS, DODGE, LEONARD, ROE, WOOLLEY; DR. ALBRIGHT, MISS ASHMUN, MISS BASCOM, MR. BONNELL, MISS CAMPBELL, DR. CAMPBELL, MISS CARR, DR. ELLIOTT, MR. FOERSTER, MR. GARDNER, DR. LOMER, DR. MANCHESTER, MR. OWEN, MR. SPEARE, MR. TAYLOR, MR. WADE, DR. WATT; MISS FIFIELD, MISS KELSEY, MISS RYAN.

GENERAL STATEMENT

The courses of the department are intended to serve five main purposes: (1) to train students in the use of English as a means of expression and communication for the ordinary demands of social, commercial, and professional life; (2) to continue that training to suit the special needs of those who intend to take up journalistic or literary work; (3) to develop the literary sympathy and appreciation and to extend the knowledge of those who find in English and American literature the readiest means of obtaining the advantages of a liberal education; (4) to prepare teachers of English for school and college work; (5) to fit students for and assist them in scholarly investigation. Most of the courses will be found to meet all of these ends, directly or indirectly, but some are specially directed to one or two in particular. Every student is encouraged to select the courses most suited to his or her own needs, but certain courses are prescribed as necessary for due equipment in particular lines of work.

Undergraduate Courses

All students in the colleges of Letters and Science, Engineering, and Agriculture are required to take Freshman English. The General Survey is regarded as a necessary preliminary to the other literature courses, and should, therefore, be taken in the sophomore year by those who think of making English their major study in the junior and senior years; this course (30) is also recommended for those who desire a general knowledge

of English literature, but are unable to carry their study of the subject further.

Students taking English as an elective course outside of the major study are advised to select courses mainly from the undergraduate group. Those who make English their major study, after providing for the required courses, may choose at will from this or the following group (for undergraduates and graduates).

Senior Honors in English

Candidates for senior honors in English have a choice between two courses of reading, the subjects of which for 1911–12 are:—

(*a*) *Elene;*
Piers Plowman, "A" text.

(*b*) Chaucer, *Troilus and Criseyde;*
Spenser, *The Faery Queen;*
Boswell, *Life of Johnson;*
Landor, *Classical Dialogues, Dialogues of Famous Women, The Pentameron.*

Candidates who choose (*a*) will be expected to render at sight normal passages of the text assigned and to answer such questions of metrical, linguistic, and historical significance as might reasonably be dealt with in a brief critical introduction.

Candidates who choose (*b*) will be expected to show that they possess a sound general knowledge of the substance of the works assigned and such information concerning the history and significance of each as may be necessary to a general understanding of its place in English literature. It will be a written examination (three hours) in each case.

English as a Major Study

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

At the beginning of their junior year, they should consult the head of the department, who will assign them to an adviser for help in the choice of courses and general direction of their studies. They are required to take, in addition to the thesis, twenty-four credits as a minimum, exclusive of course 1 (re-

quired of all students). Course 30 must be included. A total of thirty-six credits, in addition to the thesis and course 1, may be taken. No courses in public speaking except 5 and 11 may be taken as part of the major work in English.

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

Candidates for the degree of Ph. B. choosing English as their major subject are required to fulfill the same conditions as obtain for the B. A.

For Teachers

Candidates for the teachers' certificate choosing English as their major are required to take, in addition to the thesis, twenty-four credits as a minimum, exclusive of course 1 (required of all students). Courses 30, 120a and 50 (*a* and *b*) must be included. A total of thirty-six credits, in addition to the thesis and course 1, may be taken. Students who have had an adequate training in Latin or Greek may substitute some other English course for 120a; and any student may substitute courses 123 and 25 for 120a with the approval of his adviser.

Those choosing English as their minor are required to take, in addition to course 1 (required of all students), course 30; 50a, and an advanced composition course (2, 3, 5, or 6); and one of the following groups: (a) 34 and 35; (b) 36 or 137; (c) 40.

Library Work

English literature is an important part of the sound general education which forms the best foundation for success in library work, and its relation to the more specific needs of the profession is obvious. Students who take the joint course arranged at the University and the State Library School may, therefore, find it to their advantage to choose English as their major study. Of the twenty hours of library work for which credit is given by the University four may be counted towards an English major, if the candidate so desires, reducing the minimum departmental requirement to thirty credits. In addition to courses 1 and 30, which are required of all, library students are recommended to select courses of a more general character from the group primarily for undergraduates, especially 34, 35, 36 or 137, 39, 40,

and 146a. For detailed information in regard to preparation for library work, see Index under Library Training and a special bulletin entitled Courses in Library Training.

Preparation for Journalism

As the study of English is an important part of training for journalism, students preparing themselves for this profession may find it to their advantage to take English as their major. For students taking English as a major in preparation for journalism the only required courses are 1 and 30; a maximum of ten units for professional courses in journalism may be credited towards the major. Other English courses considered advantageous for journalistic work are those in composition (1, 2, 3, 5, 6), prose style (38), American literature (40), Nineteenth Century literature (34, 35), English drama (36, 137), and the novel (39). The technical instruction given in the courses in journalism includes (a) theory and practice of journalistic methods, (b) history and development of the American press, and (c) organization and management of a modern newspaper, together with a series of special lectures on various phases of journalistic work, given by newspaper men in active service. The students in the classes in journalism edit the Daily Cardinal as a part of their practical work. For detailed information as to the courses in preparation for journalism see Index under Journalism and a special bulletin for 1912–13 entitled, "The Course in Journalism."

The M. A. Degree

Candidates for the degree of Master of Arts who intend to take one-half or more of their work in English should consult the chairman of the department as to the courses most suitable to their purpose. They are required to show that they have had sufficient preliminary training in English language and literature to undertake graduate work, or to complete such preliminary training in addition to the graduate work required; if they have not taken an undergraduate course in English language, they will be required to take at least three hours in that subject, but this requirement may be satisfied by an adequate training in Greek and Latin. They are expected to take at least

two unit-hours each semester from the courses restricted to graduates.

M. A. in Absentia

The advanced study required for the M. A. *in absentia* in this department consists of two graduate courses taken in each of three consecutive summer sessions, with work done in continuation of one of the two courses each year. Particulars may be obtained from Professor Arthur Beatty, Secretary of the Department.

The Doctor's Degree

Special requirements for the doctor's degree (English major) are:

1. The general history of English Literature.
2. Anglo-Saxon and Middle English.
3. Special knowledge of the particular field chosen for study.
4. Reasonable acquaintance with the political and social history of that period.
5. Auxiliary studies, varying according to the particular field chosen. For example: for the sixteenth century, Latin, Italian, German, and French; for the classical period, Latin and French; for the romantic period, and for the nineteenth century, French and German.
6. A thesis and examination as explained above.

RHETORIC AND COMPOSITION

For Undergraduates

A. English Composition for students who have failed to pass the test prescribed on page 100. *Three hours a week.* Mr. WOOLLEY, Miss CAMPBELL, Miss RYAN.

1. Freshman English. English prose style. Composition. The elements of effective writing in prose, based upon direct study of selected authors, with training in composition. On the completion of course 1, a provisional pass mark is given; if at any time later in his course, a student is reported deficient or careless in English composition, he may be required to take additional work in that subject. *Throughout the year; three credits. Forty sections. For hours and rooms see time table of required studies.*

Required of all freshmen in the colleges of Letters and Science, Agriculture, and Engineering. Chairman of Freshman Conference, 1911–12, Mr. HUBBARD; 1912–13, Mr. YOUNG.

2. Sophomore Composition. Elective for students who have finished the required English for the freshman year. *Throughout the year; Tu., Th.*, 8, 9, 10, 11, and 2:30. Five sections. Chairman of Conference, Mr. TAYLOR.

3. Argumentation. Training in analysis, brief drawing, evidence, refutation; study of the principles of conviction, persuasion, and rhetorical presentation. *Throughout the year; Tu., Th.*, 2:30. Mr. LYMAN, Mr. GARDNER.

4. Commercial Correspondence. Its varieties and principles. Taken for credit only as part of a technical course. *Second semester; Tu., Th.*, 10 *and* 2:30. Mr. GARDNER, Mr. WATT, Mr. WADE.

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

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

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

7. Narration. Narrative composition, based mainly on the study of the short story, with exercises in technique and criticism. Ordinarily open only to juniors and seniors who have taken one composition course in advance of English 1. *Throughout the year; Tu., Th.*, 2:30. Miss ASHMUN.

8. Dramatic Writing. A course in the theory and practice of writing plays. As a prerequisite to admission candidates are expected to submit an acceptable scenario. Early conference with the instructor is desirable. *Throughout the year; M.*, 2:30 *to* 4:30. Mr. DICKINSON.

9. Technical Composition. An advanced course in technical writing with a study of scientific and technical models. Required of juniors in electrical engineering; elective for other engineering students who have had English 1. *Second semester; Tu., Th.*, 9. Mr. WATT.

For Graduates

217b. The Teaching of English Composition. A course of lectures on the pedagogic and executive principles involved in teaching composition. *Second semester; F.*, 2:30 *to* 4:30. Mr. HUBBARD.

ENGLISH LANGUAGE AND LITERATURE

For Undergraduates

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

29. English Life and Letters. Illustrative course in two parts, designed to accompany English 30. May be taken as a separate course. Attendance and examination. *Throughout the year; Tu., Th.*, 4:30. *One credit each semester.*

English Life illustrated by means of lantern slides. *Tu.*, 4:30. Mr. BEATTY.

Illustrative reading, *Th.*, 4:30. Mr. PYRE.

30. General Survey of English Literature. This course consists of two parts: (1) lectures on the history of English literature from the earliest times to the end of the nineteenth century; and (2) a careful study in small tutorial groups of the works of representative authors of each period. As an introduction to the study of English literature, this course is prerequisite to all other courses in English. It is required of sophomores taking Eng-

lish as their major, and is recommended to students desiring a single course in English literature.

Section 1, *M.*, *W.*, *F.*, 8. Mr. YOUNG. *Section* 2, *M.*, *W.*, *F.*, 9. Mr. DICKINSON. *Section* 3, *M.*, *W.*, *F.*, 10. Mr. PYRE. (Chairman of Conference). Section 4, *M.*, *W.*, *F.*, 2:30. Mr. ROE.

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

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

31. Chaucer. As many of the Canterbury Tales are read as time allows. The Parliament of Foules and the Prologue to the Legend of Good Women are also read. *Second semester; M., W., F.*, 8. Mr. LEONARD.

34. The Romantic Movement. Lectures and collateral reading upon the earliest phases of the movement from Thomson to Blake are followed by particular study of representative poetical works of Wordsworth, Coleridge, Byron, Shelley, and Keats. *First semester; M., W., F.*, 10. Mr. CAMPBELL.

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

36. Elizabethan Drama. A study of English dramatic literature from the beginning to the year 1642. Lectures and assigned reading. *Throughout the year; M., W., F.*, 11. Mr. PYRE.

For Modern Drama, see Comparative Literature, course 107.

38. Prose Style. A course in the history and development of English prose style from John Dryden to the writers of the present day. Emphasis will be laid on the study of form rather than of content. *Throughout the year; Tu., Th.*, 11. Mr. TAYLOR.

39. The Novel. (1) Introduction; the principles of prose fiction. (2) the English novel from Defoe to George Eliot. *Throughout the year; Tu., Th.*, 10. Mr. LATHROP.

40. American Literature. A general survey of literary writings in America. One hour a week will be devoted to lectures; during the second hour the class will meet in smaller groups for the study of selections from the works of representative authors. The course should be preceded or accompanied by course 30. *Throughout the year; Tu., Th.*, 9 *and* 10. Mr. FOERSTER, Mr. MANCHESTER.

48. The Literary Aspects of the English Bible. This course includes a general view of the influence of the translations of the Bible on the language and literature of England, and a study of representative portions of the Old Testament prose narrative and lyric poetry. *Second semester; M., W., F.*, 11. Mr. LATHROP.

50a. The Teaching of English. This course presents the aims, methods, and organization of the English work for the first two years in high school, with special emphasis on the teaching of composition; it includes practice work in the correction of themes. *Three sections. First semester; M., W.*, 8, 1:30 *and* 2:30. Mr. BASSETT.

50b. The Teaching of English (Continuation of 50a). This course deals with the work of the third and fourth years, with special emphasis on the teaching of literature; it includes a study of the classics used in high school reading. *Three sections. Second semester; M., W.*, 8, 1:30 *and* 2:30. Mr. BASSETT.

Observation of teaching in the high school is required in each course. 50a and 50b are required of all candidates for the teacher's certificate (English major); an advanced composition course (to be taken in the sophomore or junior year) and 50a are required of all candidates for the minor teacher's certificate in English.

54. Victorian prose writers. Carlyle, Ruskin, Newman, and Arnold. Critical analysis and discussion of representative pieces, with supplementary lectures and papers. *Throughout the year; Tu., Th.*, 9. Mr. ROE.

SENIOR THESIS COURSES

In accordance with the regulations as to substitutes for the senior thesis (Catalogue, p. 125) the department offers courses (restricted to seniors who have elected English as their major

study), in which students meet one hour a week in groups of not more than ten for intensive study of particular authors or subjects, written reports being handed in from time to time on topics assigned by the instructor in charge. A list of the instructors offering such courses and of the subjects is given below.

a. Shakspere. Mr. ALBRIGHT.
b. Milton. Mr. GARDNER.
c. Burns. Mr. WATT.
d. Wordsworth. Mr. LATHROP.
e. Shelley. Mr. LEONARD.
f. Byron. Mr. CAMPBELL.
g. Carlyle. Mr. TAYLOR.
h. George Eliot. Mr. ELLIOTT.

Throughout the year; W., 2:30; *four credits.*

Students wishing to take any of the above courses should consult Mr. Lathrop, Chairman of the Thesis Committee of the Department.

For Undergraduates and Graduates

120a. Anglo-Saxon. This course is designed to furnish a basis for the more advanced study of English philology, and to give an introduction to the history of the English language. *First semester; M., W., F.*, 9; *repeated second semester.* Mr. BEATTY, Mr. LEONARD, Mr. MANCHESTER.

120b. Middle English. A continuation of course 20a. The historical development of English is traced, and the general principles of linguistic science are illustrated. *Second semester; M., W., F.*, 9. Mr. BEATTY.

123. Modern English Grammar. The facts of modern English grammar are considered in the light of the historical development of the language, the general principles of linguistic science, and the psychology of speech. *Second semester; M., W.*, 9. Mr. HUBBARD.

122. 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.*, 2:30. Mr. HUBBARD.

121. Anglo-Saxon Poetry. A continuation of course 122. Especial attention is given to the lyric and epic poems that are least affected by christianity. *Second semester; M., W., F.*, 2:30. Mr. HUBBARD.

137. Shakspere. A short review of the political, social, and literary conditions of the Elizabethan age is followed by a careful study of selected plays. Recommended to students who intend to teach Shakspere in high school. *Throughout the year; M., W., F.*, 11. Mr. CUNLIFFE, Mr. ELLIOTT.

141. Tennyson. Tennyson's development as a literary artist is studied in his vocabulary, verse-form, and subject-matter. The poet's attitude to science, religion, and art is also considered. *Second semester; Tu., Th.*, 11. Mr. BEATTY. (Omitted 1912–13.)

142. Versification. The student is presented with a working theory, after which the course proceeds with the history of English verse forms and the analysis of particular compositions. *Second semester; Tu.*, 1:30 *to* 3:30. Mr. PYRE.

145. Browning. This course aims at explaining Browning's relation to the poetic development of the nineteenth century, his characteristic methods, his outlook on the life and thought of his time, and his view of the art of poetry. *First semester; Tu., Th.*, 11. (Omitted 1912–13.) Mr. CUNLIFFE.

146a. The Ballad. A study of the English and Scottish popular ballads in connection with their European and other analogues in popular ballad and tale. The results obtained will be applied to the problem of the origins of poetry. *First semester; Tu., Th.*, 9. Mr. BEATTY.

146b. Literary Criticism. In 1911–12 the subject will be English literary criticism of the nineteenth century, its origins and development. Coleridge, Hazlitt, and Arnold will be centres of study. *Second semester; Tu., Th.*, 9. (Omitted 1912–13.) Mr. BEATTY.

156. The Age of Spenser. *First semester; M., W., F.*, 2:30. (Omitted 1912–13.) Mr. DODGE.

157. The Age of Milton. *Second semester; M., W., F.*, 2:30. (Omitted 1912–13.) Mr. DODGE.

158. The Age of Dryden. This course deals in some detail with Dryden, and in a more cursory way with the chief contemporary poets, prose writers, and dramatists. Some of the prose writers of the first part of the eighteenth century are also taken up. *First semester; M., W., F.*, 2:30. Mr. LATHROP.

159. The Age of Pope. This course continues course 158, with special attention to Pope, and includes a general view of English literature to the French revolution. *Second semester; M., W., F.*, 2:30. Mr. LATHROP.

For Renaissance Epic, see Comparative Literature 102.

For Graduates

219. Critical Bibliography of English Literature. Required of all graduates making English their major study. *First semester; M.*, 3:30. Students register with Mr. YOUNG.

224. English Philology Seminary. Critical study of texts; historical grammar; dialects. The work is varied from year to year. The subject for 1912–13 will be Middle English Romances. *Throughout the year; Tu., Th.*, 10. Mr. HUBBARD.

243a. Introductory Seminary in English Literature. Subject for 1912–13: Milton. *Throughout the year; Th.*, 3:30 *to* 5:30. Mr. HUBBARD.

243b. Introductory Seminary in English Literature. Subject for 1912–13: Wordsworth's and Coleridge's Criticism of Poetry. *Throughout the year; W.*, 3:30 *to* 5:30. Mr. BEATTY.

244. Seminary in English Literature. Subject for 1912–13: The Medieval Drama. *Throughout the year; Tu.*, 3:30 *to* 5:30. Mr. YOUNG.

247. Seminary in American Literature. *Throughout the year; W.*, 3:30 *to* 5:30. (Omitted 1912–13.) Mr. CAIRNS.

255. Shakspere's Later Contemporaries. The English Drama from Ben Jonson to The Closing of the Theatres. The dramatic history of this period will be studied, mainly through the examination of typical plays with reference to their source and aim, and to social and theatrical conditions. *Throughout the year; Tu., Th.*, 10. (Omitted 1912–13.) Mr. PYRE.

For Modern Classical Satire and French and Italian Influences in Elizabethan Poetry, see Comparative Literature 216 and 217 respectively.

FINE ARTS

1. A General Survey of the Fine Arts. An illustrated lecture course. *Second semester; M., W.*, 3:30; *two credits.* Mr. SELLERY, Mr. JASTROW, Mr. SHOWERMAN, Mr. DODGE.
2. Classical Art. A survey of the fine arts in Greek and Roman antiquity, with lectures to connect the ancient with the modern. Illustrated. *First semester; Tu., Th.*, 2:30; *two credits.* (Omitted 1912–1913.) Mr. SHOWERMAN.

GEOLOGY

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

Physics, chemistry, and mineralogy are required of all who make geology a major study, excepting students taking major in geography. These subjects should be taken either before or during the first year's course in geology. They are also desirable for students taking geology not as a major. Students lacking chemistry or physics will be allowed to enter course 1 only by special arrangement with the instructor. Such students are advised to take course 4, Physical Geography, or course 2a, short course in Geology.

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

Courses 105 and 108 to 132 are advanced courses, adapted for students who have had at least one full year in the department of geology and for graduates.

Major in Geography

For major in geography, twenty-three credits in the department of geology are required, plus three credits in meteorology, plus thesis in geography, four credits, making thirty credits in all. In addition part or all of ten credits more are desirable, preferably made up from the available geographical courses in geology, meteorology, and political economy listed under geography; or from any of the other courses in geology; in astronomy (such as course 1); in political science (such as course 19); in agriculture (such as agricultural economics, course 1, and soils, course 25); in history (such as courses 11a and 116); in hydraulic engineering (such as course 10); in topographic engineering (courses 1, 6, and 9); etc.

The requirements in geography in connection with the University Course for the Training of Teachers are as follows: for teachers' certificate in *Physiography and Geography as a Major Subject*, at least twenty credits, plus teachers' course. Students must take at least twenty credits made up from the courses in the geological department, listed under geography, or meteorology 1, or political economy 7b, plus the teachers' course, geology 110, two credits; for *Physiography and Geology as a Minor Subject*. at least ten credits, plus teachers' course, courses 4 (throughout the year), ten credits and 110 (one semester), two credits, are required, but additional courses are desirable.

For Undergraduates

1. General Geology. The materials of the earth, its construction, the working of the destructive and constructive agencies and the history of the earth with its plant and animal inhabitants. An elementary knowledge of physics and chemistry is required. *First semester;* 11; *five credits.* Mr. BLACKWELDER.
2. Applied Geology. The work is divided as follows: (a) Geology of North America by districts. *Until Easter;* 11. (b) Field Geology. The study and mapping of selected areas adjacent to Madison. Involves preparation of geo-

logic maps, and written reports. The course includes a two-day trip to Devil's Lake. Prerequisite, course 1 or its equivalent. *Twelve hours a week (optional hours). From Easter till June; five credits.* Mr. BLACKWELDER.

2a. Short Course in Geology. An elementary course for those who wish a brief survey of the field of general geology. *Second semester; Tu., Th.*, 9; *laboratory period to be arranged; three credits.* Mr. STEIDTMANN.

3. Short Course in Geography. A treatment of physical and world geography, as in geology 4, except that there is no laboratory work. *Lectures M., W., F.*, 9; *quiz hours to be arranged; three credits a semester.* Mr. MARTIN, Mr. WILLIAMS, Mr. BEAN.

3a. Laboratory Course in Geography. Laboratory and field work in physiography and geography, as in geology 4. Prerequisite, geology 3 or 4a or 1. *Hours to be arranged; two credits a semester;* Mr. MARTIN, Mr. WILLIAMS, Mr. BEAN, Mr. HOPPER.

4. Physiography and Geography. The lands, the atmosphere and the oceans. Illustrated by regional studies of the physiographic and topographic provinces of the United States, and by a review of the regions of the world. *Lectures, M., W., F.*, 9; *laboratory sections and quiz section at hours to be arranged; five credits a semester.* One all-day excursion (Saturday) in fall and spring to Blue Mounds and to the Dalles of the Wisconsin. Mr. MARTIN, Mr. WILLIAMS, Mr. BEAN, Mr. HOPPER, Mr. FINCH.

4a. Physical Geography for Commerce students. This course embraces the essential principles of course 4, with a sufficient treatment of the physiography of the United States to prepare the student for Economic Geography. May not be taken by others than Commerce students. *First semester; one lecture and three recitations a week, M., W., F.*, 10, *and additional hour to be arranged; three credits.* Mr. WHITBECK, Mr. WILLIAMS, Mr. BEAN, Mr. HOPPER.

4b. Economic Geography (for Commerce students). A general survey of the geography of the commercial nations, excluding the United States, with emphasis upon the leading causes which underlie their industrial and commercial activities. *Second semester; one lecture and three reci-*

tations a week; M., W., F., 10 *and additional hour to be arranged; three credits.* Mr. WHITBECK, Mr. WILLIAMS, Mr. BEAN, Mr. FINCH.

6. General Mineralogy. An elementary study of crystallography, and physical and chemical mineralogy. Descriptive mineralogy follows in the second semester, with laboratory work in blowpipe methods and determinative mineralogy. *First semester; lectures, M., W., Th., F.,* 8; *laboratory, Tu.,* 1:30 *to* 3:30. *Second semester; lectures, Tu., Th.,* 8; *laboratory, M., W., F.,* 1:30 *to* 3:30; *five credits a semester.* Mr. WINCHELL, Mr. STEIDTMANN.

7. Short course in Mineralogy. The principles of mineralogy and crystallography applied to the commonest minerals and to the most important ore minerals. *First semester; M., W., F.,* 3:30. Mr. STEIDTMANN.

7a. Short course in Petrology. The principles of rock genesis and identification for field geologists, agriculturists, and engineers. *First semester; M., W., F.,* 1:30; *three credits.* Mr. STEIDTMANN.

13. Agricultural Geography. A discussion of the geographic conditions which govern agricultural production. The world distribution of groups of agricultural products and forms of agricultural industry studied in the light of these conditions. No prerequisite. *First semester; two credits; Tu., Th.,* 10. Mr. FINCH.

For Undergraduates and Graduates

105. Regional Geography. Description of a region and the geology, topography, physiographic history, climate and resources of the several parts; influence of geographical conditions on manner of life, industries, cities, and historical events. *First semester;* the Geography of North America; *second semester;* the Geography of Wisconsin. Prerequisite, geology 3, or 4, or 4a, or 1, or an equivalent, *Tu., Th.,* 9, *and conference hour to be arranged; three credits a semester.* Mr. MARTIN.

108. Petrology. A review of the principles of optics as applied to the polarizing microscope is followed by the microscopic study of the important minerals and rocks. Prerequisite, course 6. *First semester; M., Tu., W., Th., F.,*

10 *to* 12; *five credits. Second semester; M., W., F.*, 10 *to* 12; *three credits.* Mr. WINCHELL.

109a. Glaciers. A study of existing glaciers and of the work performed by ice in regions formerly glaciated. Special illustrations from Alaska and Wisconsin. Prerequisite, geology 4, or 1 and 2, or an equivalent. *First semester; Tu., Th.*, 10; *two credits.* Mr. MARTIN.

109b. Advanced Physiography. The physical geography of the lands, involving both topical and regional study of processes and topographic features, dealing in alternate years with (a) constructional physiography, (b) destructional physiography. Prerequisite, geology 4, or 1 and 2, or an equivalent. *Second semester; Tu., Th.*, 10; *two credits.* Mr. MARTIN.

110. The Teaching of Physical Geography. Includes both subject-matter and methods. Considers (1) the aims in teaching physical geography in the high school; (2) the phases of the subject which deserve emphasis; (3) materials for the teachers' use; (4) field and laboratory work. Prerequisite, geology 4 or an equivalent. *First semester; Tu., Th.*, 11; *two credits.* Mr. WHITBECK.

111. Economic Geology. Excursions are taken to iron, copper, lead, and zinc districts accessible from Madison. Chemistry 1, mineralogy 6 or 7 and geology 1 and 2 are prerequisites for this course. *Second semester;* 4:30; *five credits.* Mr. LEITH, Mr. MEAD.

112. Historical Geology. The pre-human history of the earth and its living things. Prerequisite, courses 1 and 121, or *equivalent. Second semester*, 10; *five credits.* Mr. BLACKWELDER.

114. Principles of Structural Geology. The behavior of rocks under fracture and flowage. *First semester; M., W.*, 4:30; *lectures and laboratory work.* Mr. LEITH, Mr. MEAD.

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

116. Metamorphic Laboratory. Quantitative study of the processes of metamorphism dealt with in courses 111 and 115.

Throughout the year; Tu., Th., 1:30 *to* 3:30; *two credits.* Mr. MEAD.

117. Principles of Pre-Cambrian Geology. This course treats of the pre-Cambrian stratigraphy of North America. U. S. Geological Survey specimens and slides from all the principle areas of pre-Cambrian rocks of North America are available for study. Alternates with course 118. *Second semester; M., W.*, 3:30. Mr. LEITH.

118. Lake Superior Geology. A course offered because of the scientific and commercial importance of the Lake Superior region, and the relations of this department to its study. At the close of the course in the spring, an excursion is made to points of geological and economic interest in the Lake Superior country. Given in alternate years with course 117. (Given 1912–13). *Second semester; M., W.*, 3:30. Mr. LEITH, Mr. MEAD.

119. Petrology of Lake Superior Rocks. Study of selected rock types of the Lake Superior region and the problems of the origin of igneous and metamorphic rocks connected therewith. Prerequisite, course 108. *Three credits.* Mr. WINCHELL.

120. Advanced Mineralogy. Special problems in mineralogy or detailed crystallographic work. Prerequisite, course 6. *Hours to be arranged.* Mr. WINCHELL.

121. Paleontology. A brief study of the more important groups of animals and plants, with special reference to geologic history. Designed to serve as a foundation for course 112. *First semester; three credits, Tu., Th., S.*, 9. Mr. BLACKWELDER.

122. Research Work. Offered by the members of the department in continuation of their respective courses. The amount of time that can be allotted is subject to special arrangement.

123. Geological Seminary. Subjects under investigation by the members and students of the department, and reviews of important publications are discussed. *Hours as arranged.*

124. Advanced Map Study. Essentially in-door field-work. Prerequisite, structural geology. Course 112 is desirable preparation. Laboratory work and individual confer-

ences. *Second semester; at optional hours; two credits.* Mr. BLACKWELDER.

125. Field Work for Advanced Students. Two or three weeks in May are spent in geologic mapping of some selected area in iron or copper districts of Lake Superior or zinc district of Wisconsin. *Second semester; three credits.* (Given in alternate years with course 118). Mr. LEITH, alternating with Mr. BLACKWELDER and Mr. MEAD.

126. Advanced Paleontology. Study of the more important index fossils used in geologic field work. Prerequisites, courses 112 and 121. *First semester; hours arranged; three credits.* Mr. BLACKWELDER.

127. Advanced Geography. A study of some of the more advanced phases of geography, designed for intending teachers and for students desiring to pursue the study beyond the more elementary phases. *Second semester; Tu., Th.,* 11; *two credits.* Mr. WHITBECK.

128. Lake Superior Iron Ore Exploration. A course dealing with the geological side of iron ore exploration, particularly with the interpretation of information obtained by diamond drilling. Prerequisite, course 14, 17, or 18. *Second semester; hours to be arranged; two credits.* Mr. MEAD.

131. Summer Field Course in Physiography and Geology. During August, 4 weeks. Limited to 12 students (men). Not given for less than 5 students. Field study in the Baraboo ranges, lead and zinc district of Wisconsin, border of glaciated area and driftless area, drumlins and kettle moraines, older and later drift; cost, including tuition, $50 to $60. *Four to six credits.* Mr. WHITBECK.

132. Geographical Seminary. Study and discussion of special subjects, review of new books and current articles, occasional lectures, reports and short theses; for upperclassmen and graduates. *Two hours, to be arranged; two credits a semester.* Mr. WHITBECK.

Changes in Geological Courses for 1912–1913

Economic Geology 111, and Metamorphic Geology 115, will each be lengthened to a three-fifths course extending throughout the year, to be given on alternate years. For the year 1912–13

Economic Geology will be given. Principles of Structural Geology 114 and Principles of pre-Cambrian Geology 117, and Lake Superior Geology 118, will be given as before. Course 117 is given the second semester of the present year and course 118 the second semester of the year 1912–13.

Metamorphic Laboratory 116, accompanying the courses on Economic and Metamorphic Geology, will likewise be extended throughout the year of 1912–13. It will be a two-fifths course to accompany Economic Geology for the year. For the first semester of 1912–13 a new laboratory course, two-fifths, will be added to accompany Principles of Structural Geology 114. This course will consist largely of experimental work to illustrate the principles of the lecture course.

Advanced Map Study 124 will be offered as a three-fifths course the first semester of 1912–13. Advanced Paleontology 126, three-fifths, will be given the second semester of 1912–13. The following year, alternating with these two courses, will be a single three-fifths course in Historical Geology, running through the year, which will cover the field heretofore taken in Paleontology 121 and Historical Geology 112.

GERMAN

Professors Hohlfeld, Voss; Associate Professor Roedder; Assistant Professors Bruns, Goodnight, Haertel, Kind, Prokosch, Purin, Reinhard, Sterling; Mr. Aron, Mr. Deihl, Dr. Feise, Dr. Haussmann, Dr. Hollander, Mr. Keller, Dr. Morgan, Mr. Ryan, Dr. Veerhusen; Mr. Andressohn, Mr. Cast, Miss Johnson, Mr. Kuhlmann, Mr. Lussky, Mr. Mueller, Mr. Runzler, Miss Simmons.

Eugen Kühnemann, Ph. D., LL. D., Professor at the University of Breslau, Carl Schurz Memorial Professor, first semester, 1912–1913. Courses to be announced later.

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

A. The elementary courses represent the work ordinarily done in the first and second year classes, and are so graded as to meet the needs of high school graduates with different degrees of

preparation. Students without previous work in German enter course 1; those who have had two years of high school German enter course 2, 2C, 2E, or 2S; 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 3, unless their general course of study requires a special class in German, like 3S or 3C. Students who possess a thorough practical knowledge of German considerably in advance of what their high school work indicates, should present themselves for an informal examination with a view to being assigned to more advanced classes. Credit for the omitted lower work will, however, be granted only in exceptional cases, regulated by special rules of the faculty, and never without a formal examination.

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

C. The courses from 15 to 139 and from 240 to 248 are literary courses of very different degrees of advancement, those from 240 to 248 being open to undergraduate students only in exceptional cases. Many of the less advanced courses, from 15 to 28, though different in subject matter, are of about the same grade. Elections from this group, therefore, are subject to certain restrictions stated below, after courses 20 and 28. Ordinarily, about twelve credits from courses 15 to 28 will be adequate preparation for the more advanced work in literature, as well as for the more elementary courses in philology. Students intending to specialize in German literature are advised to do related work in English literature, in medieval and modern history and in philosophy. They should also pursue, to a fair degree of advancement, the study of at least one other foreign language and literature, ancient or modern. Their attention is also called to the courses mentioned under "Comparative Literature."

D. The courses from 150 to 159 and from 260 to 265 are devoted to work in German philology. While most of these courses are intended for graduate students working for a higher degree in German, some of them are well suited to the needs of advanced undergraduates. This is especially true of courses 150 and 151, which are required of all students expecting to teach German as their principal subject; but also of courses 152, 153, 157, and 159, 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 find it difficult to choose German as their major to good advantage. Students taking course 2 in their freshman year will, as a minimum, have to devote to German from eight to ten credits a year for the remaining three years, taking thus, including the thesis, a total of at least twenty-four credits in advance of course 2. At least eight of these credits should represent class work in advance of course 30. 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, 130 or 131, 150 and 151. Students preparing to teach some other subject as their major, with German as their minor, will be required to complete course 10 or 12 and at least four credits in German literature beyond course 20.

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

Germanistische Gesellschaft

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

Aside from these general meetings, there are semi-monthly meetings of the Scientific Section (*Wissenschaftliche Abteilung*). These are open to the graduate students of the department and are devoted to reports on original investigations, current publications, and pedagogical problems.

ELEMENTARY COURSES

For Undergraduates

1. Beginners' German. Grammar and easy readings, with practice in speaking and writing German. Ten sections. *Throughout the year; four credits.* Mr. GOODNIGHT, Mr. KIND, Mr. PROKOSCH, Mr. ARON, Mr. FEISE, Mr. HOLLANDER, Mr. KELLER, Mr. MORGAN, Miss VEERHUSEN, Mr. RUNZLER.

1B. Beginners' German. Second semester only. 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., W., F.*, 1:30 *and* 2:30. Mr. PURIN, Miss VEERHUSEN.

1A. Advanced First Year German. Prerequisite, 1B, or one year of German in the high school. Three sections. *Throughout the year; four credits.* Mr. ARON, Mr. HAUSSMANN, Miss JOHNSON.

2. Second Year German. Modern prose, narrative and dramatic, selected lyrics, and a drama by Schiller; grammar continued; written and oral exercises. Prerequisite, course 1, or two years of high school German. Engineering freshmen may take course 2 in place of 2E. Eleven sections. *Throughout the year; four credits.* Mr. ROEDDER, Miss STERLING, Mr. DEIHL, Mr. FEISE, Mr. KELLER, Mr. RYAN, Miss VEERHUSEN, Mr. ANDRESSOHN, Miss JOHNSON, Mr. LUSSKY.

2C. Second Year German. For freshmen in the course in commerce. Practically identical with course 2. Three sections. *Throughout the year; four credits.* Mr. HAUSSMANN, Mr. MORGAN, Mr. RUNZLER.

2E. Second Year German. For freshmen in engineering. Practically identical with course 2, except that easy sci-

entific prose is introduced in part of the second semester. Four sections. *Throughout the year; four credits.* Mr. HAERTEL, Mr. HOLLANDER, Mr. CAST.

2S. Second Year German. For Agricultural students and others specializing in science. Identical with course 2E. Five sections. *Throughout the year; four credits.* Mr. HAERTEL, Mr. DEIHL, Mr. RYAN, Mr. LUSSKY.

2A. Advanced Second Year German. Prerequisite, 1A, or three years of high school German. Four sections. *Throughout the year; four credits.* Mr. BRUNS, Mr. ARON, Mr. DEIHL, Mr. KELLER.

ADVANCED PRACTICE COURSES

For Undergraduates

3. Third Year German. Modern and classical prose and verse; oral and written work, study of syntax. Open only to freshmen who enter the university with four years of high school German. *Throughout the year, Tu., W., Th., F.*, 8. Miss SIMMONS.

3S. Scientific German. For students specializing in science. Prerequisite, second year German. Rapid reading of scientific prose. *Throughout the year; W., F.*, 9. Miss STERLING.

3C. For sophomores in the course in commerce. Reading, conversation, and composition. Prerequisite, second year German. Two sections. *Throughout the year; Tu., Th.*, 10. Mr. FEISE, Mr. RYAN.

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.*, 8. Mr. HOLLANDER.

5C. For seniors in the course in commerce. A continuation of the work of 4C. *Throughout the year; Tu., Th.*, 11. Mr. HAUSSMANN.

6. Grammar and Composition. Prerequisite, second year German. For students who desire more practice in grammar and prose composition. Without special permission, this course may be taken only in connection with some other

course in the department. *Throughout the year, M.*, 1:30. Mr. ARON, Mr. KELLER.

7A. Elementary Conversation. Class practice, with but little work at home. Prerequisite, same as for course 6. Five sections. *Throughout the year; two hours a week; one credit.* Mr. GOODNIGHT, Mr. PROKOSCH, Mr. PURIN, Miss STERLING, Mr. KELLER, Miss VEERHUSEN.

7B. Intermediate Conversation. Prerequisite, at least four semester hours in advance of course 2, or sufficient ability in speaking German. *Throughout the year; one credit; Tu., Th.*, 2:30. Mr. KUHLMANN.

7C. Major Course in Conversation. For students preparing to teach German, but deficient in the oral use of the language. *Throughout the year; four hours a week; two credits.* Mr. ARON, Mr. KUHLMANN.

Students registering for a course in conversation should consult Mr. Prokosch as to the course to be selected.

8A. German Pronunciation and Expressive Reading. Reading of prose and poetry, with special attention to pronunciation and expression. Open, after consultation, to students of fair advancement in German. Not open to freshmen. (Repeated second semester, 1912–13). *First semester; two hours a week; one credit.* Mr. FEISE.

10. Composition and Conversation. Special work in German syntax. Prerequisite, at least four credits in advance of course 2. Five sections. *Throughout the year; two credits.* Mr. GOODNIGHT, Mr. HAERTEL, Mr. PURIN, Mr. DEIHL, Mr. MORGAN, Miss VEERHUSEN.

11. Sight reading. Rapid translation of literary and critical prose. *First semester, Tu., Th.*, 10; *one credit.* (Omitted 1912–13.) Mr. HOLLANDER.

13. Grammar Review. A detailed discussion of theoretical grammar from the standpoint of the high-school teacher. Open to seniors. *Second semester; M., W.*, 2:30. Mr. PURIN.

For Undergraduates and graduates

108B. Similar to course 8A, but intended for more advanced students as a sequel to course 153, General Phonetics. In alternate years. *Second semester; two hours a week; one credit.* (Given 1911–12). MR. FEISE.

112. Advanced Practice in Writing and Speaking German. Discussions and essays on topics of German life and literature. Open to advanced students specializing in German. In advance of course 10, though ordinarily students should take only one of the two courses. Two sections. *Throughout the year; two credits.* Mr. PROKOSCH, Mr. KUHLMANN.

114. The teaching of German. A critical study of the methods of teaching modern foreign languages. Lectures, reports, discussions, and practice teaching. Open to seniors and graduate students. Two sections. *First semester; two credits.* Mr. PURIN.

The attention of the students in this course is called to course 153, General Phonetics.

GERMAN LITERATURE

For Undergraduates

15. Classical and Modern Writers. Selections from eighteenth and nineteenth century authors, and written exercises. Prerequisite, second-year German. Three sections. *Throughout the year; three credits.* Mr. ARON, Mr. DEIHL, Mr. MORGAN, Miss VEERHUSEN.

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

16. Prose Reading. Rapid reading of historical, biographical, and descriptive texts. Also adapted to students preparing for the language examination required for the doctor's degree. Prerequisite, course 2. *Throughout the year, Tu., Th.*, 10. Mr. HOLLANDER, Mr. MORGAN.

17. Modern German Dramatists. Selected dramas of Grillparzer, Hebbel, and other authors, like Ludwig, Sudermann, and Hauptmann. A rapid reading course. Introduction to literary interpretation. *Throughout the year; M., W.*, 11. Mr. KIND.

18. Modern German Novelists. Selected novels of Scheffel, Freytag, Keller, C. F. Meyer, and Sudermann. A rapid

reading course. *Throughout the year, M., W., F.*, 11. Mr. HAUSSMANN.

20. Schiller. Introductory study of his life, reading of *Braut von Messina and Wallenstein. Throughout the year; two credits.* Two sections. Mr. HAERTEL, MISS STERLING.

Courses 15 to 20 are primarily intended for students who have had course 2, or its equivalent. Students having had more than four semester hours in advance of course 2 will be required to do additional work to receive full credit. Courses 16 and 20 are given in English, the rest partly in German.

21. Modern German Poetry. Scheffel's *Der Trompeter von Säkkingen*, and other epic poems. *Second semester, M., W., F.*, 1:30. (Omitted 1911–12). MISS STERLING.

22A. Heine. Introduction to the study of his life and poetry. Lyrics, *Harzreise*, and other prose writings. *First semester; M., W., F.*, 10. Mr. BRUNS.

22B. Hebbel. Introduction to the study of his life, poetry, and theory of art. Reading of several dramas and selections from letters and diaries. *Second semester; M., W., F.*, 10. Mr. BRUNS.

23. Goethe. Introductory study of his life, and selections from his works. *Götz* and *Egmont. Throughout the year; Tu., Th.*, 9. Alternates with course 24. (Given 1911–12.) Mr. Voss.

24. Lessing. Introductory study of his life, and selections from his works. *Emilia Galotti, Nathan*, and prose selections. *Throughout the year; Tu., Th.*, 9. Alternates with course 23. (Given 1912–13.) Mr. Voss.

25. Goethe's Prose. A critical study of Goethe's masterpieces of prose. *Throughout the year; Tu., Th.*, 11. Alternates with course 27. (Given 1912–13.) Mr. FEISE.

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

27. Hauptmann and Sudermann. As representatives of the modern movement. Reading and interpretation of their principal dramas and novels. Alternates with course 25. *Throughout the year; Tu., Th.*, 9. (Given 1911–12.) Mr. FEISE.

28. Grillparzer. Critical study of his life and works. Representative dramas will be studied in class and others will be assigned for private reading. Lectures and recitations. *Throughout the year; Tu., Th.*, 11. Mr. KIND.

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

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

29. Survey of German Painting and Sculpture of the Nineteenth Century. Illustrated lectures. Not open to freshmen; does not count towards a major or minor in German. *First semester; Tu., Th.*, 2:30; *one credit.* Miss STERLING.

30. Germany and its Institutions. Lectures (partly illustrated), and assigned readings. *Second semester; twice a week, one or two credits.* Mr. HAERTEL.

Courses 21, 22A, 22B, 29, and 30 are given in English, the rest partly in German.

Thesis Courses

In conformity with the faculty regulations concerning thesis courses (see requirements for degrees), the following were offered in 1911–12:

A. Schiller. Mr. ROEDDER.

B. Kleist. Mr. BRUNS.

Subjects and instructors for 1912–13 will be announced later.

For Undergraduates and Graduates

130. Goethe's Faust. Interpretation of both parts of *Faust* and of the lyrics, as a basis for a general study of the poet's life and art. Conducted in English. Alternates with course 131. *Throughout the year; M., W., F.*, 9. (Given 1912–13). Mr. HOHLFELD, Mr. BRUNS.

131. History of German Literature. English lectures, with outside reading of representative works. Attention is given to the relation of literature and other fields of culture. *Throughout the year; M., W., F.*, 9. Alternates with course 30. (Given 1911–12). Mr. HOHLFELD, Mr. BRUNS.

132. Lessing. A critical study of his life and works. Lectures, discussions, and reports. *First semester; two credits.* (Omitted 1911–12 and 1912–13.) Mr. HAERTEL.

134. Lyric Poetry of the Nineteenth Century. Special attention will be given to the study of rhythm and meter. *Throughout the year; Tu., Th.*, 3:30. Mr. BRUNS.

135. The Novel of the Nineteenth Century. Special attention will be given to the general aspects of German life and thought in so far as they find expression in the novel. Alternates with course 143. *Throughout the year; two credits.* (Given 1911–12.) Mr. GOODNIGHT.

136. Popular German Literature. *Volkslied, Märchenliteratur,* and *Volksbücher (first semester);* modern dialect literature *(second semester). Tu., Th.*, 10. Alternates with course 137. (Given 1912–13.) Mr. ROEDDER.

137. Schiller. A study and discussion of his dramas, dramatic fragments, philosophical writings, and correspondence. *Throughout the year; two credits.* Alternates with course 136. (Given 1911–12.) Mr. ROEDDER.

138. Shakspere in Germany. The introduction of Shakspere into Germany, and his influence on German literature during the eighteenth century and on the Romantic School. Lectures, assigned readings, and reports. Alternates with course 242. *Second semester; two credits.* (Given 1911–12). Mr. KIND.

139. German Metrics. A detailed study of German prosody, with special emphasis on the verse of the eighteenth and nineteenth centuries. Alternates with course 246. (Given 1912–13.) *First semester; two credits.* Mr. FEISE.

143. Keller and Meyer. Detailed study of their lives and works. Alternates with course 135. *Lectures, assigned readings, and reports twice a week.* (Given 1912–13.) Mr. GOODNIGHT.

Courses 130, 131, 132, and 138 are given in English, the rest in German.

For Graduates

240. Herder. His life and works, with special reference to his influence on the Storm and Stress movement and on the Romantic School. Alternates with course 241. *Second semester; M.*, 2 *to* 4. (Given 1911–12.) Mr. HAUSSMANN.

241. The Romantic School in Germany. A study of the early romantic movement, especially the two Schlegels, Tieck, Novalis, Wackenroder, Fichte, and Schelling. Alternates with course 240. *Second semester; M.*, 1:30 *and* 3:30. (Given 1912–13.) Mr. HAUSSMANN.

242. The Literary Relations of England and Germany in the Eighteenth Century. Particularly the influence on German literature of the *Spectator*, Milton, Young, Ossian, and Ballad Poetry; Pope, Thomson, Defoe, Swift, Richardson, Fielding, Sterne, and Goldsmith. Alternates with course 138. *Throughout the year; twice a week.* Mr. KIND.

244. History of Middle High German Literature. The literary movements from the twelfth to the end of the fifteenth century, with special reference to German life and culture. Prerequisite, course 152. *Throughout the year; Th.*, 4 *to* 6. (Given 1911–12.) Mr. MORGAN.

245. Interrelations of German and French literature during the seventeenth and eighteenth centuries, with special reference to the novel. Alternates with course 139. *Second semester; twice a week.* (Given 1911–12.) Mr. FEISE.

247. Proseminary in German Literature. Investigations of limited compass are to prepare graduate students for the more advanced work of the seminary proper. Special attention will be given to bibliography, style, meter, and poetic theory. The work will in alternate years be in the following subjects:

A. The literature of the seventeenth and of the first half of the eighteenth century. (Given 1912–13.)

B. The classical period of the second half of the eighteenth century. Klopstock, Wieland; Lessing, Herder. (Given 1911–12.) *Throughout the year; W., F.*, 10. Mr. HOFFELD.

248. Seminary in German Literature. The aim is to train graduate students in the scientific methods of the historical and critical study of literature. The general fields from which specific problems are chosen for investigation, form a cycle of three years.

A. Interrelations of German and English Literature, chiefly during the last three centuries. (Given 1910–11.)

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

C. The history of the German drama, from the medieval beginnings to the present. (Given 1912–13: Kleist and Hebbel; Anzengruber and Hauptmann.) *Throughout the year; Tu.*, 7 *to* 9 P. M. Mr. HOHLFELD.

248L. Seminary Lectures. A course of weekly lectures in German furnishing a connected survey of the period studied in the seminary. Open also to advanced students not in the seminary, who may secure one hour's credit by doing regular outside reading. *Throughout the year; Th.*, 4:30. Mr. HOHLFELD.

Courses 242 and 244 are given in English, the rest are given in German.

GERMAN PHILOLOGY

For Undergraduates and Graduates

150. Historical survey of the German language with special reference to modern German grammar. German in its relation to the other members of the Germanic and Indogermanic 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.*, 11. Mr. Voss.

151. Middle High German. Introductory course. Lectures on the German folk epics and on German life in the twelfth century. Study of *Der Nibelunge Nôt*. *Second semester; M., W.*, 11. Mr. Voss.

Courses 150 and 151 are required of students who expect to take German as their principal subject.

152. Advanced Middle High German. Studies in the language and literature of the twelfth and thirteenth centuries. Lectures and critical study of texts.

A. *Kudrun* and *Dietrichepen (first semester);* and Walther von der Vogelweide *(second semester)*. (Given 1913–14).

B. Hartmann von Aue: *Der arme Heinrich (first semester);* and Early Middle High German *(second semester)*. (Given 1911–12).

C. Selections from Wolfram von Eschenbach and Gottfried von Strassburg *(first semester);* selections from *"Die Ept-*

gonen des höfischen Epos" (second semester). (Given 1912–13). *Tu., Th.*, 10. Mr. Voss.

153. General Phonetics. A study of the nature and production of the speech sounds in the most important Indo-European languages, both from a pedagogical, and a philological standpoint. Open to graduate and properly prepared undergraduate students from all the language departments of the university. Alternates with course 263. *First semester; two credits.* (Given 1911–12). Mr. Prokosch.

Students desiring more practice than the course in phonetics can provide, should, in the second semester, take course 108B.

154. Gothic Grammar, with readings from the Gospels. *First semester; two credits.* Alternates with course 158. (Given 1911–12). Mr. Roedder.

155. Old High German, with special reference to German life and culture. Braune's *Althochdeutsche Grammatik* and readings from Braune's *Althochdeutsches Lesebuch.* Alternates with course 159. *Second semester; two credits.* (Given 1911–12). Mr. Roedder.

157. Introduction to the Study of *Volkskunde.* Lectures and collateral reading. In alternate years. *First semester; one credit.* (Given 1912–13). Mr. Roedder.

158. Old Saxon, with special reference to Germanic life and culture. Holthausen's *Altsächsisches Elementarbuch* and extracts from the *Heliand*, ed. Behaghel. Alternates with course 154. *First semester; two credits.* (Given 1912–13). Mr. Roedder.

159. Germanic Mythology and Heroic Legends. Lectures and collateral reading. Alternates with course 155. *Second semester; two credits.* (Given 1912–1913.) Mr. Roedder.

Courses 150, 151 are given partly in German and partly in English, 153 in English, and the rest in German.

For Graduates

260. Classical German Philological Literature. An introduction to the history of German philology and to the study of philological methods. Lectures and discussions. *Once a week.* (Given 1913–14). Mr. Voss.

261. Deutsche Wortkunde, Onomatik. Chapters from the general history of language with special reference to German. Sound laws and sound changes, accent. Formation, derivation, and composition of words. Popular etymologies. Inflection. Changes in the meaning of words. Etymological groups. Lectures and discussions. *Once a week.* (Given 1911–12.) Mr. Voss.

262. Etymological studies based on H. Hirt's *Etymologie der Neuhochdeutschen Sprache.* Lectures and discussions. *Once a week.* (Given 1912–13). Mr. Voss.

263. Pre-Germanic Grammar. *Throughout the year; twice a week. First semester:* A study of Germanic phonology as apparent in Gothic, Old Norse, Old High German, Old English, and Old Saxon. *Second semester:* Morpohology and syntax. This course is the natural supplement of any work in Germanic philology, and at the same time a sequel to course 153. (Given 1912–13). Mr. Prokosch.

264. Modern and Middle Low German. *Reinke de Vos* and extracts from Fritz Reuter's prose writings. *Throughout the year; M., W.*, 10. (Given 1913–14). Mr. Voss.

265. Studies in the language and literature of the sixteenth century with lectures on the history and development of the Modern High German literary language. *Throughout the year.* (Given 1911–12). *M., W.*, 10. Mr. Voss.

266. Studies in the language and literature of the fourteenth and fifteenth centuries. Lectures and critical study of texts. *Throughout the year.* (Given 1912–13). M., *W.*, 10. Mr. Voss.

269. Pro-seminary in German Philology. For 1911–12; Old High German texts *(first semester);* Gothic *(second semester).* For 1912–13: Studies in the development of German style, based on Old High German poetry *(first semester);* Old High German and Middle High German prose *(second semester). S.*, 8. Mr. Roedder.

270. Philological Seminary. The work of the seminary varies. Special attention is given to the classical writers of the Middle High German period, but also the other periods, especially the transition period from Old to Middle High German, will be studied.

A. Gottfried von Strassburg, *Tristan und Isolde (first semester);* Meyer-Benfey, *Mittelhochdeutsche Übungen (second semester).* (Given 1913–14).

B. Wolfram von Eschenbach, *Parzival.* (Given 1911–12.)

C. Hartmann von Aue, *Iwein (first semester);* Meier Helmbrecht *(second semester).* (Given 1912–13.)

Reading and discussion of papers prepared by the members of the seminary. *Throughout the year; Tu.,* 4:20 *to* 6. Mr. Voss.

Courses 260–270 are given in German.

GREEK

Emeritus Professor Kerr; Professors Smith, Showerman; Associate Professors Laird, Fiske; Miss Banning, Miss Doe.

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.

For Undergraduates

A1. Elementary Greek. White's *First Greek Book,* Xenophon's *Anabasis. M., Tu., Th., F.,* 1:30. Miss Banning, Miss Doe.

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

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

For students who have had one year of preparatory work.

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

For students who have had two years of preparatory work.

1b. Greek Prose Composition and Sight-reading. *Tu., Th.,* 8. Mr. Laird.

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

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

2b. Herodotus VII, or selected dialogues of Lucian, and Euripides, (two plays). *M., F.*, 11. Mr. SMITH or Mr. LAIRD. For those who have had course 1, or whose preparatory work has been particularly good.

3. Greek Prose Composition. *W.*, 11. Mr. LAIRD. Required of those who expect to get recommendations to teach Greek.

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

For Undergraduates and Graduates

105a. Greek Lyric Poets. Study of meters. *First semester; M., W., F.*, 11. Mr. SMITH. (Omitted 1912–13.)

105b. Thucydides; Demosthenes. *Second semester; M., W., F.*, 11. Mr. SMITH. (Omitted 1912–13.)

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

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

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

112. Life of the Greeks and Romans. A lecture course illustrated by lantern slides. Open to all students. A knowledge of Greek and Latin is not essential. *Tu., Th.*, 11. (See Latin 112.) Mr. SHOWERMAN.

113. Greek Literature in English translations (Homer). *First semester; Tu., Th.*, 9. For details of courses 113 and 113b see Comparative Literature 101 and 103.

113b. Greek Literature in English translations (Drama). A knowledge of Greek is not required. *Second semester; Tu., Th.*, 12. Mr. SMITH.

115. Classical Archaeology. The history and appreciation of Greek sculpture, architecture, and painting. A course introductory to the study of art. Mr. SHOWERMAN. (Omitted. See Latin 122.)

116. Greek Religion. (See Latin 227).

For Graduates

220. Thucydides. The whole of the author is read privately by the members of the class. Especial attention is given in the seminary exercises to text criticism. *Throughout the year; S.*, 9 *to* 11. Mr. SMITH, Mr. WESTERMANN.

221. Greek Drama. Sophocles. The whole author is read privately by the members of the class. The general treatment in courses 221 and 222 will be literary in character. *Throughout the year; S.*, 9 *to* 11. (Omitted 1912–13.) Mr. SMITH.

222. Lyric Poetry. Especial attention is given to Pindar, the whole being read privately. *Throughout the year; S.*, 9 *to* 11. (Omitted 1912–13.) Mr. SMITH.

223. Homer. The *Iliad*. *S.*, 9 *to* 11. (Omitted 1912–13.) Mr. LAIRD.

224. 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 1912–13.) Mr. SMITH.

225. Greek Orators. Antiphon, Andocides, Lysias, and Isaeus. *W.*, 4:30 *to* 6. Mr. LAIRD.

230. Greek Grammar. History of the sounds and forms. *First semester; Tu., Th.*, 5. (Omitted 1912–13.) Mr. LAIRD.

231. Greek Syntax. Lectures on the development of Attic usage, with particular reference to the cases and modes. *Second semester; Tu., Th.*, 5. (Omitted 1912–13.) Mr. LAIRD.

233. Journal Club. Reports on and discussion of current philological literature. *One hour a week.* Mr. SMITH.

HEBREW AND HELLENISTIC GREEK

PROFESSOR WILLIAMS (Chairman); ASSISTANT PROFESSORS KELLY, WOLFENSON; MR. DAVIES.

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

Freshmen and other students, when specially interested, are permitted to elect Elementary Hebrew in lieu of one of the two foreign languages which they may ordinarily choose, or in lieu of the one which they must take in that year. Permission to make this substitution is granted by the chairman of the executive committee of student advisers, as authorized by the Faculty of the College of Letters and Science.

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

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

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

1. The general student desiring to secure a true and broad knowledge of language, literature, and history as a means to liberal culture or with a view to teaching, since this work furnishes unsurpassed linguistic training in this most important non-Indo-European family of languages and gives a view of a little known, but very important, domain of intellectual development.

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

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

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

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

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

Major in Hebrew and Hellenistic Greek

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

For Undergraduates

1. Elementary Hebrew. Phonology, inflections, and syntax. The acquirement of a correct and fluent pronunciation of pointed Hebrew is insisted upon, and practice in reading unpointed texts is given. *Throughout the year; four credits.* Mr. WOLFENSON.

2. This course covers the same ground as course 1, but beginning in the second semester of each year, twice a week, continues thus during the first semester of the following year. Mr. WILLIAMS.

3. Second Year Hebrew. A reading course in Hebrew historical literature, centering on the Books of Samuel, with sight reading in other books; also a review of the Hebrew verb with special attention to the weak verbs. *First semester; two credits.* Mr. KELLY.

4. Advanced Second Year Hebrew. Reading in the Book of Deuteronomy and legal literature with attention to sight reading and securing a wide vocabulary; also a review of inflections with special study of roots and triconsonantism. *Second semester; two credits.* Mr. KELLY.

7. Prose Composition and Conversation. The more important principles of Hebrew syntax are thoroughly illustrated. Intended to be taken in conjunction with courses 3 and 4, but may be taken independently. *Throughout the year; one credit.* Mr. KELLY.

16. The Elements of Hellenistic Greek. For those who have not studied classical Greek. Forms and idioms of Hellenistic Greek; composition; reading of selected chapters of the Gospels, with attention to acquirement of vocabulary. *Throughout the year; four credits.* Mr. WILLIAMS.

17. This course covers the same ground as 16, but begins in the second semester of each year, twice a week, and continues the same for the first semester of the following year. Mr. WILLIAMS.

18. Second Year Hellenistic Greek. Matthew and Mark are carefully studied with attention to the etymology of the language and a review of forms. Study of the peculiarities of the syntax of Hellenistic Greek. *Throughout the year; two credits.* Mr. WILLIAMS.

19. Luke and the Acts. Advanced reading course, with introduction to criticism; consideration of the date, authorship, composition, and purposes of the Acts. Careful study of the syntax and style of Hellenistic Greek. *Throughout the year; two credits.* Mr. WILLIAMS.

19A. The Apostolic Age. Lecture course treating critically the records, history, and developments of the period of the Apostles, with assigned readings and reports by the class. Designed to supplement course 19 and to be taken in conjunction with it, but each may be taken independently. *Throughout the year; one credit.* Mr. DAVIES.

23. Hebrew History. Lecture course on Semitic origins, migrations, and settlements; conditions in early Palestine; the Abrahamitic migration, and patriarchal history; Egypt and the Exodus; the conquest of Palestine to Saul; and the Kingdom to Solomon. *First semester; two credits.* Mr. WOLFENSON.

24. History of the Kingdom. Lecture course on the division of the Kingdom; the Assyrian period; fall of Samaria; the Southern Kingdom to the Exile; the literature of the period. *Second semester; two credits.* Mr. WOLFENSON.

25. Jewish History. Lecture course on the period of the Exile; the Return and the Persian period; Alexander's conquest; the Greek and Syrian period; the Maccabean wars; the Roman period. *Second semester; one credit.* Mr. WILLIAMS.

26. Historical Geography of Palestine. Lecture course on Hebrew Archaeology and recent discoveries, illustrated by lantern slides. *Throughout the year; one credit.* Mr. KELLY.

For Undergraduates and Graduates

105. The Minor Prophets. An advanced course: critical study of the text on the basis of the ancient versions, recent theories of the composition and form of certain books, and the historical background of the books studied. *Throughout the year; two credits.* Mr. KELLY.

105A. Messages of Hebrew Prophecy. A course of interpretative lectures on the Minor Prophets, treating the literature in its historical and sociological aspects. Supplemental to course 105. *Throughout the year; two credits.* Mr. DAVIES.

106. The Book of Job. A critical study of the text with a consideration of Hebrew wisdom-literature, philosophy, and

the problem of suffering. *Throughout the year; two credits.* Mr. KELLY.

108. Hebrew Syntax. Systematic study of the details of Hebrew syntax and the thought processes of the Hebrews as revealed in the syntax, with reading of illustrative passages and composition. *Throughout the year; two credits.* Mr. WOLFENSON.

120. The Book of John. Introduction to textual criticism. A consideration of the differences between John and the other Gospels; the date, authorship, composition, and purpose of the book. The leading *termini technici* of John. *Throughout the year; two credits.* Mr. WILLIAMS.

120A. Matthew, Mark, Luke, John. The Background of the Gospels. The ethnological, political, sociological, and religio-ethical background of the four gospels. *Throughout the year; one credit.*

127. The Psalms—Books I and II. Form and characteristics of Hebrew poetry with an introduction to the theories of Hebrew metre: Cobb, *Criticism of Hebrew Metre. Throughout the year; two credits.* Mr. KELLY.

For Graduates

209. Advanced Hebrew Syntax. Study of special problems in Hebrew syntax with reports by members of the class. Historical syntax. *First semester; two credits.* Mr. WOLFENSON.

210. Advanced Hebrew Etymology. Origin and development of the Hebrew inflections; historical and comparative study of the verbal system. Arabic, at least, of the other Semitic languages, is essential for this course; it can, therefore, be taken only by those who have had or are taking course 212. *Second semester; two credits.* Mr. WOLFENSON.

211. Hebrew Seminary. Hebrew legal, historical, poetical, and prophetical literature will be the subject in successive years, with a representative book of each type as a nucleus of the work. During the year 1911–12 Isaiah XL–LXVI, was the center of the work on prophecy. The work of the seminary is supplemented by the reading courses whose subject is parallel with that of the sem-

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

212. Elementary Arabic. The sounds, inflections, and broad outlines of syntax. Exercises and reading of easy prose. Acquirement of vocabulary. Use of Arabic for lexicographical purposes. Comparison with Hebrew. *Throughout the year; two credits.* Mr. WOLFENSON.

212A. Elementary Arabic. For those desiring an opportunity to begin Arabic in the second semester. The right of withholding this course in any given year is reserved. *Second semester; three credits.* Mr. WOLFENSON.

213. Advanced Arabic. Reading course in the Qur'ân and the Arabic historians; lectures and readings on the early history of Islam. History of the Qur'ân. *Throughout the year; two credits.* Mr. WOLFENSON.

214. Elementary Assyrian. The sounds; correspondence of Hebrew and Arabic with Assyrian; inflections; study of signs. Selected texts: Friedrich Delitzsch, *Assyrische Lesestücke*, 4th ed.; Bruno Meissner, *Assyrisch-Babylonische Chrestomathie.* Introduction to Sumerian. Assyrian discoveries. *Throughout the year; two credits.* Mr. KELLY.

215. Biblical Aramaic (ten weeks); Syriac (remainder of the year). The dialects of Syriac; use of Syriac for comparative purposes. Reading of selections in Brockelmann's Syriac Grammar and Roediger's Syriac Chrestomathy. *Throughout the year; two credits.* Mr. WOLFENSON.

215A. Semitic Epigraphy. A study of the North Semitic Inscriptions. *Throughout the year; two credits.* Mr. KELLY.

221. Hellenistic Greek Seminary. In successive years the Epistle of Paul to the Romans, the Second Gospel, and the Fourth Gospel will form the center of the work.

Throughout the year; once a week (two-hour session). Mr. WILLIAMS, Mr. DAVIES.

222. Advanced Hellenistic Greek Grammar. Investigation of special problems in syntax. *Throughout the year; two credits.* Mr. WILLIAMS.

HISTORY

PROFESSORS DENNIS, FISH, MUNRO (Chairman), PAXSON, SELLERY; DR. THWAITES; ASSOCIATE PROFESSORS CHASE, MATHEWS, WESTERMANN; ASSISTANT PROFESSORS COFFIN, ROOT; DR. BELL, MR. SMITH; MR. BROOKS, MR. CARSON, MR. CUSTER, MR. DAVID, MR. FOX, MR. GUTSCH, MR. KELLAR, MR. MACDONALD, MISS PALLISER, MR. WILDE, MR. WING.

The courses in history are divided into four groups:

A. Introductory courses 1 to 10 are primarily for undergraduates. They cannot be counted toward advanced degrees in history, and graduates are required to have completed an equivalent of sixteen semester hours of these studies as a preparation for graduate work for a degree in history. It is recommended that students shall not cover all of the introductory courses to the neglect of advanced work. If history is chosen as one of the required subjects, six credits must be obtained in one or more complete courses. Students are allowed to take only one of the courses 1, 5, 6, and 10, for full credit, but are permitted to take a second or third of such courses without the supplementary reading and topic for four credits. Students not registered in the College of Letters and Science may take the courses 1, 2, 4, 5, 6, or 10 for two credits each semester, with a proportionate reduction in the amount of work required.

B. Advanced courses 111 to 148 are designed to continue the work begun in the preliminary courses in the direction of greater specialization. These courses are open to graduates and undergraduates who have taken the necessary preliminary work.

C. Courses 150 and 151 are designed for those who intend to teach history.

D. Courses 252 to 262 are distinctly graduate courses and are closed to undergraduates.

History Major

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

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

II. Advanced courses to the amount of at least ten credits (after the collegiate year 1912–13, twelve will be required).

For Undergraduates

INTRODUCTORY COURSES OPEN TO FRESHMEN

Freshmen are permitted to choose two of the introductory courses 1, 5, 6, and 10, for five credits, but will not be required to do the special training work (including supplementary reading and topic) in more than one course.

10. Ancient History. A general survey of the history of the ancient world, including the Oriental nations, Greece, and Rome. Textbooks, lectures, collateral reading and topic. *Throughout the year; Tu., Th., S.*, 9. Mr. WESTERMANN.

1. Medieval History. A general survey of the history of Europe from the barbarian invasions to the close of the fifteenth century. Lectures, conferences, collateral reading, and topics. *Throughout the year; M., W., F.*, 11. Mr. MUNRO, Mr. SELLERY, and assistants.

5. English History. An outline of political and constitutional history, as a frame-work for the study of the economic and social development of the nation. Students who have had both semesters of history 1 may enter this course at the beginning of the second semester. Students may not take both history 5 and 6. *Throughout the year; Tu., Th.*, 10, *and a third hour in sections for conferences.* Mr. DENNIS, and assistants.

6. English History. A general survey of the history of England, with particular attention to social conditions and to literary and intellectual development. Recommended for students intending to take the course in English Survey

or to teach English after graduation. Lectures and textbook, collateral reading, and reports. Students who have had both semesters of history 1 or who are taking the second semester of history 1 may enter this course at the beginning of the second semester. *Throughout the year; Tu., Th.,* 10 *and a third hour in sections for conferences.* Mr. BELL.

INTRODUCTORY COURSES NOT OPEN TO FRESHMEN

2. Modern European History. A general survey extending from the close of the fifteenth century to the present day. Lectures and collateral readings. *Throughout the year; M., W., F.,* 10. Mr. SELLERY.

4a. History of the United States. A general survey from the revolutionary era to the present, with emphasis upon political history. This course, or an equivalent, must precede all advanced courses in American history. To the presidency of Jackson, *first semester*; from the presidency of Jackson to the present, *second semester; M. W., F.,* 11. Mr. FISH.

4b. History of the United States. A general survey similar to 4a in character, content, and method. From the presidency of Jackson to the present, *first semester;* to the presidency of Jackson, *second semester; M., W., F.,* 10. Mrs. MATHEWS.

For Undergraduates and Graduates

ANCIENT AND MEDIEVAL HISTORY

125. Greek Civilization and its Expansion. A study of the development and character of Greek civilization, and of the forces making for its expansion, to the beginning of the Roman Empire. *Second semester; W., F.,* 1:30. Mr. WESTERMANN.

126. Later Roman Empire. A study of the organization and government of the Empire in the third and fourth centuries, with special emphasis on the municipality and economic conditions. *Second semester; W., F.,* 1:30. (Omitted 1912–13.) Mr. WESTERMANN.

123. The Roman Empire in the East. A study of the political history and civilization of the eastern portion of the Roman Empire from the founding of Constantinople to its capture by the Turks. *First semester; W., F.*, 1:30. (Omitted 1912–13). Mr. WESTERMANN.

129. Greek and Roman Institutions. To the end of the Roman Republic. *Second semester; W., F.*, (Omitted 1912–13). Mr. WESTERMANN.

131. Medieval Civilization. Designed to supplement course 1 by a special study of the intellectual life of the feudal period and of the organization of society. (Not open to sophomores). *First semester; Tu., Th.*, 10, *and a third hour to be arranged.* (Given second semester, 1912–13). Mr. MUNRO.

132. The Crusades. Designed to supplement course 1 by a more extended study of the period from 1095 to 1291, with special reference to the causes, events, and influence of the Crusades. (Not open to sophomores). *Second semester; Tu., Th.*, 10. (Omitted 1912–13). Mr. MUNRO.

141a. Constitutional History of England. A study of the formation and growth of English institutions, to the close of the Middle Ages; designed to be particularly useful for those who intend to study law. *First semester; Tu., Th.*, 10. *and a third hour to be arranged.* (Omitted 1911–12). Mr. MUNRO.

134. The Civilization of the Later Middle Ages. A survey of the intellectual life of western Europe, including the so-called Renaissance in Italy, in the fourteenth and fifteenth centuries. *First semester; Tu., Th.*, 9, *and a third hour to be arranged.* (Omitted 1912–13). Mr. SELLERY.

130. Modern Historians. A discussion of the writings of English, French, German, Italian, and American historians of the latter part of the eighteenth and of the nineteenth century, to illustrate the problems and methods of work in various fields of European history. (Not open to sophomores). *Second semester; Th.*, 1:30. (Omitted 1912–13). Mr. MUNRO.

MODERN HISTORY

137. Modern Civilization. Designed to supplement course 2 by reviewing European institutional and *kulturgeschichtliche* development from the Peace of Westphalia to the end of the nineteenth century. (Not open to sophomores). *First semester; Tu., Th.*, 11, *and a third hour to be arranged.* (Given first semester 1912–13). Mr. COFFIN.

141b. Constitutional History of England. A study of the growth of English institutions since the Middle Ages. A continuation of course 141a to the present. *Second semester; Tu., Th.*, 10, *and a third hour to be arranged.* (Omitted 1911–12). Mr. SELLERY.

140. The Protestant Revolt. The beginnings in the fifteenth century; the sixteenth century revolts; the century of conflict and settlement, 1550–1650. *First semester; Tu., Th.*, 9, *and a third hour to be arranged.* Mr. SELLERY.

148. Expansion of Europe Since the Fifteenth Century. The relations of Europe chiefly with Asia and Africa, involving the development of colonies, trade, and international policies. *Throughout the year; Tu., Th.*, 11. (Omitted 1911–12). Mr. DENNIS.

142. England under the Tudors and Stuarts. The constitutional and religious struggles in the sixteenth and seventeenth centuries, economic and social changes, international relations, the development of sea-power, and the founding of the British Empire. *Throughout the year; Tu., Th.*, 11. (Omitted 1911–12). Mr. DENNIS.

143a. The British Empire, 1688–1815. A course dealing with the development of modern English institutions, foreign affairs, the international struggle for colonial and commercial supremacy, and the evolution of imperial politics. *First semester; Tu., Th.*, 10. (Omitted 1911–12). Mr. DENNIS.

143b. The British Empire since 1815. For description see course 143a. Special attention will be paid to foreign policy and economic and colonial development. *Throughout the year; Tu., Th.*, 11. Mr. DENNIS.

144. The Development of Modern Russia, from the Muscovite leadership of the fifteenth century to the end of the nineteenth century. A study of institutions and of foreign re-

lations. Prerequisite, course 2 or its equivalent. *First semester; Tu., Th.*, 4:30. Mr. COFFIN.

145. The Development of Prussian Leadership in Germany, 1640–1871. A study of the growth of modern Prussian institutions and of the building by Prussia of a new empire. Prerequisite, course 2 or its equivalent. *First semester; M., W.*, 4:30. (Omitted 1912–13). Mr. COFFIN.

138. The French Revolution and the Napoleonic Empire, 1789–1815. A general study of the development of the Napoleonic Empire and of the Napoleonic institutions. Prerequisite, course 2 or its equivalent. Alternates with course 139. *First semester; M., W., F.*, 11. (Omitted 1911–12). Mr. COFFIN.

136. The French Revolution. A review of the Ancient Regime followed by a study of the political, social, and international aspects of the Revolution. *First semester; M., W., F.*, 9. (Omitted 1912–13). Mr. BELL.

127. Napoleon the First. The life of Napoleon with a review of the history of Europe during the period of his ascendency. *Second semester; M., W., F.*, 9. (Omitted 1912–13). Mr. BELL.

139. The Nineteenth Century. This course will presuppose a fair acquaintance with the narrative of nineteenth century history in continental Europe, and will be devoted to some leading phases of the development of political institutions. Alternates with course 138. *First semester; M., W., F.*, 11. (Omitted 1912–13.) Mr. COFFIN.

128. Nineteenth Century Europe. An explanation of existing conditions through the study of the chief phases of the political, economic, and social history, and of the extension of European influence into other continents. *Throughout the year; may be elected by semesters; M., W., F.*, 9. Mr. BELL.

AMERICAN HISTORY

116. The American Colonies. European background of colonial history, development of the social, economic, and political life of the colonies, growth of American institutions and principles, and expansion of settlement to 1760. *Through-*

out the year; may be elected by semesters, M., W., F., 10. Mr. Root.

122. The American Colonies and the Imperial System, 1660–1765. A study of the relations between England and her American continental dependencies. *Throughout the year; Tu., Th.*, 9. (Omitted 1912–13.) Mr. Root.

112a. The French in North America, (1497–1763). A study of their exploration and exploitation of the continental interior, with an evaluation of source material. *First semester; Tu., Th.*, 1:30. (Omitted 1911–12). Mr. Thwaites.

112b. History of Wisconsin. A general survey from Nicolet's discovery (1634) to the close of the Civil War, with an evaluation of source material. *First semester; Tu., Th.*, 1:30. (Omitted 1912–13.) Mr. Thwaites.

117. Constitutional History of United States to 1815. Origin and growth of constitutional practices considered in the light of social and economic forces, imperial and international factors from colonial days, through the periods of the American Revolution, Confederation, and Constitution of 1789 to the close of War of 1812. *Throughout the year; Tu., Th.*, 8. Mr. Root.

113. History of New England. Transfer of population from Europe to New England, the forces, social, economic, political, that acted upon it there, and its expansion westward. *Second semester; M., W., F.*, 10. (Omitted 1911–12). Mr. Fish.

111. History of the West, 1763–1890. The conditions of migration, the institutions of frontier communities, and the influence of the West upon national development. *Throughout the year; may be elected by semesters; M., W., F.*, 9. Mr. Paxson.

118. Civil War and Reconstruction. A general study of the history of the United States, 1860 to 1876. *First semester; M., W., F.*, 12. (Omitted 1911–12). Mr. Fish.

124. Recent History of the United States, 1873–1906. The reorganization of parties since the close of the period of reconstruction, and the trend towards nationalization. *Throughout the year; may be elected by semesters; Tu., Th.*, 11. Mr. Paxson.

115. Diplomatic History of the United States. Actual negotiations between the United States and other countries, and the progress of international law so far as it has involved the United States. *Throughout the year; Tu., Th.*, 10. (Omitted 1912–13). Mr. FISH.

120. Introductory Seminary in American History. Topics in the history of Monroe's administrations. *Throughout the year; hours to be arranged.* Mr. FISH, Mr. PAXSON.

121. Introductory Seminary in American Colonial History. Administrative relations of American colonies with the British government during the eighteenth century. *Throughout the year; Tu., Th.*, 9. Mr. ROOT.

150. The Teaching of History in the High School. (a) The special educational value of history and the peculiar problems of the history teacher. (b) A comparative study of methods. (c) Observation in the Madison High School, and practice work. Open to seniors whose major or minor is history. *Repeated each semester; M., W.*, 2:30. Mr. CHASE, in cooperation with Mr. GRINDELL, MISS MURPHY, and MISS SELL of the Madison High School.

151. Supplementary Reading for Teachers of History. (a) the careful scrutiny of supplementary material with a view to the needs and capacity of high-school pupils; (b) organization and preparation of this; (c) consideration of practical methods of promoting and directing the pupils' reading. *Second semester; Tu., Th.*, 2:30. Mr. CHASE.

For Graduates

252. Historical Method. Introductory course, including consideration of problems of method, review of available materials for research, with bibliographical suggestions, and consideration of the technique of editing and publishing. Graduate students in their first year are expected to take this course or an equivalent. *Throughout the year; W.*, 3:30 *to* 5:30. Mr. SELLERY, Mr. THWAITES, Mr. DENNIS, Mr. FISH.

253. Palaeography and Diplomatics. (a) Elements of palaeography, with practical exercises in the reading of facsimiles; (b) elementary exercises in diplomatics. *Second*

semester; hours to be arranged. (Omitted 1912–13). Mr. MUNRO.

254. Seminary in Ancient History. *First semester*, Organization and Administration of Egypt under the Ptolemies. *Second semester*, Studies in Economic Conditions under the Roman Empire. *Tu.*, 7 *to* 9. (Omitted 1912–13). Mr. WESTERMANN.

255. Seminary in Latin and Ancient History. See Latin 233. A study of the literary and inscriptional sources upon the principate of Augustus Caesar, especially the Monument of Ancyra. *Throughout the year; Th.*, 3:30 *to* 5:30. Mr. SLAUGHTER, Mr. WESTERMANN.

256. Seminary in Medieval History. Topics from the Crusades. A knowledge of three foreign languages is required. *Throughout the year; M.*, 2:30 *to* 4:30. Mr. MUNRO.

257. Seminary in Modern European History. The work will be selected in the field of Napoleonic institutions. *First semester.* (Omitted 1912–13.) Mr. COFFIN.

259. Seminary in History of the British Empire. Selected topics in modern economic and political history. *Throughout the year; Tu.*, 1:30 *to* 3:30. Mr. DENNIS.

261. Seminary in American History. Reconstruction period. *Throughout the year; Tu.*, 3:30 *to* 5:30. (Omitted 1911–12; given 1912–13.) Mr. FISH.

262. Seminary in American History. The subject for 1911–12 will be the West during the eighties, for 1912–13, the Jacksonian era, 1829–1840. *Throughout the year; M.*, 2:30 *to* 4:30. Mr. PAXSON.

INDO-EUROPEAN COMPARATIVE PHILOLOGY

ASSOCIATE PROFESSOR LAIRD; ASSISTANT PROFESSOR PROKOSCH.

1. General Phonetics. A study of the nature and production of speech sounds in the most important Indo-European languages. *First semester; Tu., F.*, 3:30. *In alternate years.* Mr. PROKOSCH.
2. Elements of Comparative Philology. An introductory course on the Structure and Development of the Indo-European languages. *Second semester; Tu., F.*, 3:30. *In alternate years.* Mr. PROKOSCH.
3. Elementary Sanskrit. *Throughout the year; M., W.*, 11. Mr. LAIRD.
4. Advanced Sanskrit. Kalidasa's Cakuntala. *Throughout the year; F.*, 11. Mr. LAIRD.
7. Old and Middle Irish. An introductory course to Celtic philology, with readings from Irish epics. *First semester; W., F.*, 3:30. Mr. PROKOSCH.
8. Welsh. Selections from the Mabinogion. *Second semester; W., F.*, 3:30. Mr. PROKOSCH.
9. Pre-Germanic Grammar. *Tu., F.*, 3:30. In alternate years. (Omitted 1911–12). *Throughout the year.* Mr. PROKOSCH.
10. Old Bulgarian. An Introduction to Slavic philology. *First semester; W., F.*, 3:30. Mr. PROKOSCH.
11. Lithuanian. Comparative grammar and introduction to Lithuanian folklore. *Second semester; W., F.*, 3:30. Mr. PROKOSCH.
12. Russian. An introduction to the study of modern Russian speaking, writing, and reading. *Throughout the year; W., F.*, 3:30. Mr. PROKOSCH.

Courses 1 and 2 alternate with course 9, the latter being given in 1912–13.

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

JOURNALISM

ASSOCIATE PROFESSOR BLEYER AND MR. HYDE.

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

Instruction is offered by the department of political science, in the law of the press, including the law of copyright, libel, and other topics relating to the publication of magazines and newspapers. A special course in current political topics and their effective literary presentation is also given by the department of political science for the students in journalism. The psychology of advertising is the subject of a course in the department of philosophy, and the principles of advertising are considered in connection with courses in business administration. In the College of Agriculture are given courses in agricultural journalism and agricultural advertising.

University graduate scholarships offered annually are open to students in journalism.

For Undergraduates

1. Elements of Newspaper Writing. Practical talks on the work of the newspaper reporter, with practice in newspaper writing. Primarily for freshmen. *Throughout the year; Th.*, 2:30; *no credit.* MR. BLEYER, MR. HYDE.
2. Newspaper Reporting and Correspondence. Lectures and practice in all the details of the work of the reporter and correspondent including news gathering and newspaper writing. *Throughout the year; M., W., F.*, 10. MR. BLEYER. MR. HYDE.

3. Newspaper Editing. Instruction and practice in editing copy, correcting proof, writing headlines, making up, and other details of editing, and in the organization and methods of local, state, and national news gathering. Prerequisite, Journalism 2 or equivalent practice. *Throughout the year; Tu., Th.*, 10. Mr. BLEYER.

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

For Undergraduates and Graduates

104. Editorial Writing. Theory and practice of editorial writing. Open to students who have had considerable practice in writing. *Throughout the year; Tu., Th.*, 9. Mr. HYDE.

105. Special Feature and Magazine Work. Instruction and practice in preparing special articles for newspaper and magazine publication. Open to students who have had considerable practice in writing. *Throughout the year; Tu., Th.*, 11. Mr. BLEYER.

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

For Graduates

110. Seminary in Journalism. Various problems connected with the editing and publishing of newspapers and magazines are considered from year to year. *W.*, 2:30 *to* 4:30; *two credits.* Mr. BLEYER.

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

Current Political Topics (Political Science, 132). Current political problems, with training in the discriminating use of sources and in effective literary presentation; designed for students preparing for journalism. Open to advanced students. *Throughout the year; Tu., Th.*, 10. Mr. BAILEY.

The Law of the Press (Political Science 125). The law of copyright, literary property, libel, privileged publication, and other topics relating to the publication of books and newspapers. *Second semester.* Mr. HALL.

Psychological Principles of Advertising (Philosophy 119). *Second semester; Tu., Th.*, 8. Mr. STARCH.

LATIN

PROFESSORS SHOWERMAN, SLAUGHTER (*Chairman*); ASSOCIATE PROFESSORS FISKE, LAIRD; ASSISTANT PROFESSOR ALLEN; Mr. BRIDGHAM, Mr. SMITH, Mr. WARD, Mr. WEST, Miss SOUTHER.

The courses in Latin are divided into three groups:

I. B to 5, for undergraduates early in the college course, form an introduction to advanced courses, and furnish, for those who do not continue Latin beyond the second year in college, an acquaintance with the best specimens of prose and verse. They may not be counted for the master's degree. B. and A count toward the bachelor's degree and the language requirement in the University, but will not be accepted as part of a Latin major. 1 must precede all except B and A. 2 is recommended to students who intend to make Latin a major, and should be taken in the first year along with 1.

II. 108–123 are open to students who have completed 1 and 3, or an equivalent, in group I, and may be counted toward the master's degree.

III. 225–233 are primarily for graduate students, and are ordinarily not open to undergraduates, or those who have completed less than thirty semester hours of undergraduate Latin.

Latin Major

The requirements for a major in Latin are, in addition to the thesis, twenty-six credits as a minimum. At least six credits, in

addition to the thesis, should be chosen from group II, but no specific requirement of courses is made. Courses 2, 105 and 106 in *Greek* to the extent of six credits, may be counted toward a Latin Major. Course 122 in Latin, and course 112 first semester, can not be counted toward the Latin Major.

For Undergraduates

B. Elementary Latin. The elements of Latin and Caesar's *Bellum Gallicum*, Bks. I–III. *Throughout the year; M., Tu., W., Th., F.*, 8. Mr. SMITH, Miss SOUTHER.

A. Cicero and Virgil. Four orations of Cicero and six books of Virgil's *Aeneid*. Some attention to writing Latin. *Throughout the year; M., Tu., W., Th., F.*, 8. Mr. BRIDGHAM.

1. Livy, Cicero, and Terence. Livy, Books I and XXI; Cicero, *De Senectute*, and Terence, *Phormio* and *Andria*. Three sections. *Throughout the year; M., W., F.*, 9, 10, *and* 1:30, Mr. FISKE, Mr. SHOWERMAN, MISS ALLEN.

2. Prose Composition, supplemented by the reading of easy prose authors without preparation. Six groups. *Throughout the year; Tu., Th.*, 8, 9, 10 *and* 1:30. Mr. FISKE, Mr. SHOWERMAN, Mr. SLAUGHTER, Mr. BRIDGHAM, Mr. SMITH, Mr. WARD.

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

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

5. Catullus, Pliny, and Martial. Intended to supplement 3, but may be taken without it. When taken by juniors or seniors may be counted as half of the advanced reading course required of all who take Latin as a major or minor. *Throughout the year; Tu., Th.*, 9. MISS ALLEN.

For Undergraduates and Graduates

108. Cicero's Letters and Orations. A reading course with special attention to the life and personality of Cicero. *First semester; M., W., F.*, 8. Mr. SHOWERMAN.

109. Plautus, Terence, and Seneca. A reading course giving a general survey of the Roman drama. *First semester; M., W., F.*, 8. Mr. SHOWERMAN.

110. Lucretius. *De Rerum Natura* I, III and V, and selections from the remaining books. *Second semester; M., W., F.*, 10. Mr. SLAUGHTER.

111. Virgil. *Aeneid* VII–XII, with selections from Virgil's other works. *First semester; M., W., F.*, 10. Mr. SLAUGHTER.

112. Life of the Greeks and Romans. Lectures illustrated by lantern slides. Open to all students. A knowledge of Greek and Latin is not essential. The lectures on Greek life can not be counted toward a Latin major. *Throughout the year; Tu., Th.*, 3:30. Mr. SHOWERMAN.

113. Literary Criticism. Selections from early Roman poetry and from Cicero, Horace and Quintilian. *First semester; M., W., F.*, 9. MISS ALLEN.

114. Oratory and Philosophy. Lectures on the history of Roman oratory and philosophy and readings from Cicero and Seneca. *Second semester; M., W., F.*, 9. MISS ALLEN.

121. Ovid, Tibullus, Propertius. In connection with a systematic study of classical mythology. *Throughout the year; M., W., F.*, 9. Miss ALLEN.

116. The Teaching of Latin. A course on the methods and materials used in the teaching of Latin, in secondary schools. Lectures, reports, discussions, and practice teaching. Special attention to Caesar. Open to seniors who have had not less than twenty credits of Latin. *First semester; M., W., F.*, 10. Mr. SLAUGHTER.

117. Latin Literature. A general survey from the earliest period to the reign of Trajan; lectures and required reading in Latin authors. *Second semester; M., W., F.*, 10. Mr. SLAUGHTER.

118. Roman Satire. Selections from the works of Ennius, Lucilius, Varro, Horace, Seneca, Persius, Petronius, and Juvenal. Lectures on the origin and development of Roman satire. *Throughout the year; Tu., Th.*, 10. Mr. FISKE.

119. Roman Historians to Tacitus. Selections from the Annalists, Cicero, Caesar, Nepos, Sallust, Livy, and Tacitus. *Throughout the year; Tu., Th.*, 10. Mr. FISKE.

120. Literature of the Late Empire. Reading of Pagan and Christian authors, with lectures on the religion and literature of the period. The *Cupido et Psyche* of Apuleius and the *Octavius* of Minucius Felix will be read. *Second semester; M., W., F.*, 8. Mr. SHOWERMAN.

122. Classical Art. (See Greek 115). Illustrated lecture course on the history and appreciation of Greek sculpture, architecture, and painting; introductory to the study of art; Greek and Latin not necessary. *First semester; Tu., Th.*, 4:30. Mr. SHOWERMAN.

123. Roman Monuments. Illustrated lectures on the remains of ancient Rome, with special reference to history and literature. Latin not essential. *Second semester; Tu., Th.*, 4:30. Mr. SHOWERMAN.

124. Thesis Course. Ovid. *Throughout the year; Tu., Th.*, 8 and 10. MISS ALLEN.

For Graduates

225. Latin Grammar. Lectures on the sounds and forms of the Latin language. *First semester; Tu., Th.*, 2:30. Mr. LAIRD.

226. Latin Syntax. Lectures on Latin syntax, illustrative of the historical method. *Second semester; Tu., Th.*, 2:30. Mr. LAIRD.

227. Religion of the Greeks and Romans. Lectures, studies, and reports on the mythology, ritual, and religious institutions of the Greeks and Romans. *Throughout the year; hour to be arranged.* Mr. FISKE.

228. Roman Archaeology. Consists of 123, with additional hour for reports. In 1911–12 this course formed part of the Pro-Seminary. *Second semester; Tu.*, 2:30 *to* 4:30. Mr. SHOWERMAN.

230. Latin Literature. Lectures and assigned readings, with a minute examination of the authors read. A two-years' course covering, in 1912–13, the literature of the Republic; in 1911–12, the literature of the Empire, through the reign of Hadrian. *Throughout the year; M.*, 2:30 *to* 4:30. MISS ALLEN.

232. Pro-Seminary. In 1911–12 the work was based on Livy, Bks. II and III. *First semester; Tu.*, 2:30 *to* 4:30. Mr. FISKE.

233. Latin Seminary. The work of the seminary varies from year to year. *Throughout the year; Th.*, 3:30 *to* 5:30. Mr. SLAUGHTER.

In 1912–13, a critical study will be made of the *Miles Gloriosus* of Plautus. Other plays will be analyzed by the members of the Seminary. All the plays will be read.

MANUAL ARTS

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

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

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

Adequate facilities for all laboratory courses is made possible by the use of the full equipment of the College of Engineering shops and drawing rooms. In addition to these, however, the department has fitted up a large room equipped especially for wood working classes and for the study of supplies and equipment. Through the kindness of many manufacturers of manual

training and drawing equipment a large number of exhibits are housed in this room and form a rather complete museum on the Manual Arts.

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

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

Courses of Instruction, 1911–1912

1. Freehand Drawing and Perspective. An elementary course in the principles of freehand drawing and the use of the common media of expression in drawing: pencil, pen, crayon, and water color. Still life drawing from models, casts, and natural forms. Interior and exterior perspective, Outdoor sketching. *Each semester; one lecture; three two-hour drawing periods each week. M., W., F.,* 10 *to* 12; *three credits.*
2. Mechanical Drawing. An elementary course in mechanical drawing covering the following subjects; use of instruments, geometrical drawing, lettering and simple working drawing introducing the theory of projections, revolutions, sections, intersections, and machine sketching. Machine drawing. *Throughout the year; three two-hour drawing periods each week.* Time of any engineering drawing section; teaching conferences to be arranged. *Six credits.* Mr. PHILLIPS, Mr. ORTH.
3. Applied and Constructive Design. The fundamental principles of free hand drawing, perspective and design, and their application to constructive design. Attention given to use of different materials in all grades of the public schools. Prerequisite, credit or registration in courses 1 and 2. *First semester; one lecture; three two-hour drawing periods each week; Tu., Th., S.,* 10 *to* 12; *three credits.* Mr. CRAWSHAW.
4. Elementary Bench Woodwork. This course includes (a) bench work and fundamentals of mechanical drawing and design; (b) student demonstrations. Prerequisite, credit or registration in courses 1 and 2. *Each semester; one lecture and six hours of shop work each week; M.,* 1:30; *W.,*

1:30; *shop hours to be arranged; three credits.* Mr. CRAWSHAW, Mr. DORRANS.

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

6. Pattern Making and Turning. A course in elementary wood-turning and pattern-making. (a) principles of draft, shrinkage, and finish; (b) patterns requiring complex cores; (c) lectures and demonstrations; (d) class management. Prerequisite, course 2. *Each semester; one lecture and at least three hours of shop work each week; W.*, 8; *shop hours to be arranged; two credits.* Mr. DORRANS.

6a. Pattern Making. An advanced course emphasizing the design and construction of patterns for a complete machine. *Each semester; W.*, 8; *shop hours to be arranged.* Mr. DORRANS.

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

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

9. Machine Shop Work. Bench work in chipping and filing and sheet metal. Project work on shop machines. Supplementary subjects; courses of study, methods of time keeping and cost reducing. Prerequisite, course 6. *Each semester; one lecture and at least three hours of shop*

work each week; hours and credits to be arranged. S., S. Mr. GODDARD.

10. History and Literature of Manual Arts. This course is designed to give a background for the work of the teacher and supervisor of the Manual Arts. The history of education is given some consideration. Considerable attention is given to the development of Manual Arts and Industrial Education in this and European countries and to its literature. *First semester; two lectures each week; M., W.*, 10; *two credits.* Mr. CRAWSHAW.

11. Organization. Courses and Equipment for Manual Arts. Methods of introducing and maintaining manual training, drawing and vocational work in different classes of schools and in different grades. A detailed study of courses for different media. Equipments planned. Specifications, contracts, and orders written for equipment purchases. *Second semester; two lectures each week; M., W.*, 10; *two credits.* Mr. CRAWSHAW.

12. The Teaching and Supervision of Manual Arts. Methods of teaching and supervising constructive work in elementary and high schools. Lectures and discussions; individual study of class room methods; demonstrations, and practice teaching. *Throughout the year; two lectures each week; M., W.*, 11; *two credits each semester.* Mr. CRAWSHAW.

13. Thin and Decorative Metal. The design and construction of projects in sheet and rod metal—escutcheons, straps, hinges and pulls—appropriate for the enrichment of furniture. Raised and beaten copper forms and simple jewelry. *First semester; three two-hour periods each week; M., W., F.*, 3:30 *to* 5:30; *three credits.* Mr. ————.

14. Clay and Pottery. The study of clay as a medium of expression in public school work. Modeling as a means of understanding and delineating form. Methods of building up work. Study and preparation of glazes. Firing. Cement construction. *Second semester; three two-hour periods each week; M., W., F.*, 3:30 *to* 5:30; *three credits.* Mr. ————.

Note:—The lectures in shop laboratory courses each require two hours of preparation. Those who elect manual arts laboratory courses with a view to teaching should devote as much time as possible to laboratory work.

MATHEMATICS

Professors Slichter (Chairman), Van Vleck; Associate Professor Skinner; Assistant Professors Dowling, Hart, March, Wolff; Dr. Allen, Dr. Burgess, Mr. Clements, Dr. Dresden, Mr. Simpson, Mr. Dryzer, Mr. Taylor, Mr. Cushman, Mr. Keffer, Mr. Nyberg, Miss Burns.

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

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

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

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

It will be advantageous for all students expecting to elect mathematics to present at least one and one-half units of algebra for entrance.

B. Courses 111 to 124 are designed for students who desire to continue mathematical study, and who have completed the requisite courses in group A.

C. Courses 241 to 266 are intended primarily for graduate students.

Major in Mathematics

The requirements for an undergraduate major in mathematics are, in addition to the thesis, 26 semester hours as a minimum, exclusive of courses 1 to 4, 7, and 8. Courses 5, 6, and 112 must be included.

For Undergraduates

1. Algebra. For students presenting one unit of algebra for entrance; prerequisite to all other courses in mathematics except 2 and 8. *One semester; three credits.* Thirteen sections the first semester and two sections the second

semester. Mr. SKINNER, Miss ALLEN, Mr. CLEMENTS, Mr. DRESDEN, Mr. SIMPSON.

2. Trigonometry. Plane trigonometry and logarithms; prerequisite to all other courses in mathematics except 1, 7, 8, and 124. *One semester; three credits.* Three sections the first semester and eight sections the second semester. Mr. DOWLING, Mr. SKINNER, Miss ALLEN, Mr. CLEMENTS, Mr. DRESDEN, Mr. SIMPSON.

3. Analytic Geometry. Recommended to students presenting one and one-half units of algebra for admission and elective to students who have taken or are taking course 2. *Second semester; three credits.* Two sections. Miss ALLEN, Mr. DOWLING, Mr. SIMPSON.

4. Analytic Geometry. Elementary course. *Throughout the year;*

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

Section 2. *Tu., Th.*, 11. Miss ALLEN.

5. Calculus. Elementary course. Differentiation and integration of functions with the usual geometric and mechanical applications. Students who intend to specialize in mathematics or who desire calculus for applications in physics and science are advised, if possible, to take course 5 in the sophomore year. *Throughout the year. Section* 1, *M., W., F.*, 10. Mr. DOWLING. *Section* 2, *M., W., F.*, 11. Mr. CLEMENTS.

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

6b. Analytic Geometry of Three Dimensions. *Tu., Th.*, 3:30. *First semester.* Mr. DRESDEN.

7. Commercial Algebra. A course adapted to the needs of students of economics and finance. Required of students in the Course in Commerce. *Second semester; three credits.* Five sections. Mr. SKINNER, Miss ALLEN, Mr. CLEMENTS, Mr. DRESDEN, Mr. SIMPSON.

8. Solid Geometry. *First semester; three credits.* Mr. CLEMENTS.

For Undergraduates, College of Engineering

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

101. Elementary Analysis. This course includes a variety of work in graphic methods and a study of the fundamental functions of analysis. *One semester; M., Tu., W., Th., F.* Required of freshmen in engineering. Eight sections first semester, two sections second semester. Mr. SLICHTER, Mr. WOLFF, Mr. BURGESS, Mr. DRESDEN, Mr. CUSHMAN, Mr. KEFFER, Mr. NYBERG, Mr. TAYLOR.

102. Elementary Analysis. A continuation of 101, with further work in graphic methods and nomography. *One semester; M., Tu., Th., F.* Eight sections second semester, three sections first semester. Required of freshmen in engineering. Mr. SLICHTER, Mr. WOLFF, Mr. BURGESS, Mr. DRESDEN, Mr. CUSHMAN, Mr. KEFFER, Mr. NYBERG, Mr. TAYLOR.

Note:—On account of the large amount of special work in courses 101 and 102, a special section in 102 will be organized for students who have had trigonometry and analytic geometry in other institutions.

104. Calculus. Differential and Integral Calculus. For all courses. *One semester; M., Tu., W., Th., F.* Six sections first semester, two sections second semester. Required of all sophomores in engineering. Mr. MARCH, Mr. WOLFF, Mr. BURGESS, Mr. TAYLOR, Mr. DRYZER.

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

110. Higher Mathematics. Differential Equations, Definite Integrals, Fourier Series, and other subjects of immediate importance to engineering students. Elective to juniors, seniors, and graduate students. *Throughout the year; M., W., F.* Mr. WOLFF.

For Undergraduates, College of Agriculture

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

For Undergraduates and Graduates

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

112. Differential Equations, with applications to geometry and mechanics. This course is designed primarily to be a working course for students in mathematics and physics. *Second semester; M., W., F.*, 10. Mr. VAN VLECK.

113. Theoretical Mechanics. An elementary course in analytical mechanics. This course may be taken by those who have had analytic geometry and calculus. *Throughout the year; M., W., F.*, 11. Mr. SLICHTER.

115. Projective Geometry. Synthetic treatment. *Throughout the year; Tu., Th.*, 11. Mr. DOWLING.

114. Modern Analytic Geometry. Homogeneous point and line co-ordinates, projective transformations, etc. *Second semester; M., W., F.*, 9. Mr. DRESDEN.

119. Differential Geometry. The application of the differential calculus to the geometry of twisted curves and surfaces. *Second semester in alternate years; M., W., F.*, 8. Mr. SKINNER.

117. Vector Analysis and Quaternions. An introductory course with applications to important problems in geometry and mechanics. Adapted to the needs of students in physics. *First semester; M., W., F.*, 8. (Omitted 1912–13.) Mr. SKINNER.

118. Theory of Probabilities. This course is adapted to the needs of students of science and economics. *First semester; Tu., Th.* 10. Mr. SLICHTER.

120. Theory of Analytic Functions. *In alternate years throughout the year.* (Omitted 1911–1912.) *M., W., F.*, 9. Mr. VAN VLECK.

121. Theory of Functions of a Real Variable preceded by an introduction to the theory of point sets. A critical study of the theorems necessary to advanced work in analysis, with applications. *In alternate years throughout the year. Tu., Th.*, 11, and *W.*, 3:30. (Omitted 1912–13.) Mr. VAN VLECK.

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

Open to seniors who have had course 5. Open to other seniors and juniors upon approval of the department. *First semester; Tu., Th.*, 11; *second semester; Tu., Th.*, 10. Mr. HART.

123. Survey of Geometry and Algebra. A course beginning with the history of Greek geometry and discussing the development and nature of the fundamental principles of geometry and algebra. Supplementary to course 122 and designed for prospective teachers of mathematics in the secondary schools. *First semester; M., W., F.*, 9. Mr. VAN VLECK.

124. The Mathematics of Life Insurance. An introductory course designed to meet the needs of students who wish to acquaint themselves with the fundamental principles of life insurance. Course 7 is prerequisite and course 5 should precede or accompany it. *Throughout the year; Tu., Th.*, 10. Mr. DOWLING.

For Graduates

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

241. Elliptic Functions. Arranged to give a working knowledge of the functions of Weierstrass and Jacobi. *Throughout the year; Tu., Th.*, 2:30. (Omitted 1912–13.) Mr. DOWLING.

244. Higher Geometry, with special reference to the theory of surfaces and twisted curves. Mr. DOWLING.

243. Modern Theory of Differential Equations. *Throughout the year.* (Omitted 1911–12.) Mr. VAN VLECK.

246. Groups of Finite Order. A study of the fundamental properties of groups, followed by an examination of some of the more important groups and their applications to geometry and analysis. *Throughout the year; Tu., Th.*, 3:30, *and a third hour.* (Omitted 1912–1913.) Mr. SKINNER.

250. Theoretical Hydrodynamics. The theory of ordinary and of vortex motion of fluids, followed by a study of theory of waves in liquids. *Throughout the year; Tu., Th.*, 11, *and a third hour to be determined.* Mr. SLICHTER.

251. Theory of Potential and Harmonic Functions, inclusive of a study of Fourier's Series. *Throughout the year; three credits.* Mr. SLICHTER.

261. Seminary in the Theory of Functional Equations. *Throughout the year; Th.*, 2 *to* 3:30. Mr. VAN VLECK.

263. Higher Algebra, with special attention to the theory of quadratic forms and elementary divisors. *First semester; Tu., Th., S.*, 9. (Omitted 1912–13). Mr. SKINNER.

264. The Linear Substitution in two and more variables with applications to various branches of mathematics. *Throughout the year; M., W., F.*, 11. Mr. VAN VLECK.

265. Differential Equations of Mathematical Physics. The solution of boundary value problems of physics by Fourier's series, Bessels' functions, spherical harmonics, etc. *Throughout the year; M., W., F.*, 8. (Omitted 1912–13.) Mr. MARCH.

266. Theory of Numbers. An introductory course including a sketch of recent developments in the subject. *Throughout the year; Tu., Th.*, 10. Mr. SKINNER.

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

METEOROLOGY

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

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

For Undergraduates and Graduates

101. General Meteorology. The composition, temperature, pressure, moisture, and general circulation of the atmosphere; storms, weather, climate; observation of the weather, construction and study of weather maps, weather forecasting. Prerequisite, elementary physics. *First semester; Tu., Th.*, 11; *laboratory, W.*, 10 *to* 12; *three credits.* Mr. MILLER.

102. Climates of the United States. The physical conditions controlling the distribution of the temperature, rainfall, cloudiness, humidity, and wind in the United States; the relations of the climates of the United States to hygiene, industry, agriculture, and forestry. *Second semester. Tu., Th.*, 2:30; *two credits.* Mr. MILLER.

103. Theoretical Meteorology. Statics and dynamics of the atmosphere; solar radiation and its related periodic phenomena; reduction of meteorological observations. Prerequisites, Mathematics 111 and 112, Physics 2 or equivalents. *Second semester; hours and credits to be arranged.* (Omitted 1911–12.) Mr. MILLER.

104. Climates of the World. The climates of the world in relation to man and his activities. *First semester. Tu., Th.*, 2:30; *two credits.* Mr. MILLER.

105. Climatology. Climatic factors and the methods of statistical climatology; solar climate and the chief varieties of physical climate; changes of climate. Prerequisite, course 101. *Second semester; hours and credits to be arranged.* (Omitted 1912–13.) Mr. MILLER.

MUSIC

PROFESSOR COERNE, EMERITUS PROFESSOR PARKER; ASSOCIATE PROFESSOR LUENING; ASSISTANT PROFESSORS HALL, LOCKE; MISS BERGMAN, MR. CASE, MISS EASTMAN, MR. VON GELTCH, MISS REGAN, MRS. SANDBERG; MR. ADAMS, MR. MANN, MRS. SANDERS, MR. SAUGSTAD, MR. STOTHART.

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

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

Students may be admitted to advanced courses on examination.

Students may elect one or more studies in applied music* on recommendation of the Director of the School of Music, but without credit toward graduation except as specified under course 16. See the statement of the School of Music. (See Index.)

Courses

These courses give prominence to analytical, critical, and historical study, both in distinctive courses and in the methods generally pursued, and thus afford opportunity for study, not only to those specializing in composition, but also to those who, without technical skill, wish to acquire a more intelligent appreciation of music.

Courses 3 to 8 continue throughout the year, and cannot be entered in the second semester except on examination.

1. Theory of Music. Elements of Music. Introductory course, outlining the scientific basis of music and its structural elements, rhythmic, melodic, harmonic and

---

* Note:—By the term "applied music" is meant special instruction in voice culture or some instrument, as indicated in course 16.

formal. No preparation necessary. For credits see second paragraph on previous page. *First semester; M., W.*, 1:30. Miss EASTMAN.

2. Theory of Music. Elements of Form. *Second semester; M., W.*, 1:30; *two credits.* Miss EASTMAN.
3. Sight-Reading and Ear-Training. Class drill in staff-notation and in sight-singing, with emphasis laid upon tonal relations as a practical basis for the study of harmony, and with attention given to ear-training, tone production, and enunciation. *Two-year course, twice a week, but one credit for each semester.* (a) *First year; Tu., Th.*, 8. (b) *Second year; Tu., F.*, 9. Mr. CASE.
4. Elementary Harmony. This course treats of general theory, harmony, chords and their mutual relationships, non-harmonic tones, modulation, and analysis. It is intended that the ability to harmonize a given melody in soprano or bass shall be acquired in the course. Prerequisite, the ability to read and play simple four-part music. Two sections. *W., F.*, 10, *and Tu., Th.*, 3:30; *two credits.* Miss EASTMAN.
5. Public School Music. For Grade and High School Teachers. *Tu., Th.*, 10; *two credits.* Mr. CASE.
6. Public School Music. For Supervisors. *Two-year course.*
   First Year. (a) Methods, *M., W., F.*, 2:30; *two credits.* (b) Practice-Teaching, *M., W.*, 1:30; *one credit.* (c) The Child Voice, *first semester, F.*, 1:30; *one credit.* (d) Conducting, *second semester, F.*, 1:30; *one credit.*
   Second Year. (e) Methods, *M., W., F.*, 3:30; *two credits.* Mr. CASE.
7. Advanced Harmony. Prerequisite, course 4. *M., W.*, 11; *two credits.* Mr. LOCKE.
8. Counterpoint. Prerequisite, course 7. *Tu., Th.*, 10; *two credits.* Mr. LOCKE.
9. Double Counterpoint, Canon and Faugue. Analysis and Composition. Examples taken from Bach and others of the classical period, as well as from modern masters. Prerequisites, courses 7 and 8. *Hours to be arranged; two credits.* Mr. COERNE.
10. Musical Composition. Detailed study of rhythm, melody, harmonic accompaniment, and musical form. Contra-

puntal treatment of voice parts. Imitation. The writing of pieces for the pianoforte, voice, violin, and organ such as etudes, classical dances, inventions, two-part canons, songs, glees, preludes. Prerequisites, courses 4 and 7. *Hours to be arranged; two credits.* Mr. COERNE.

11. Instrumentation. Prerequisites, courses 7 and 8. *Hours to be arranged; two credits.* Mr. COERNE.

12. History of Music. Lectures, with recitations and illustrations, on the development of the art, from ancient times through the period of Bach and Händel. *First semester, Tu., Th.*, 2:30; *two credits.* Mr. HALL.

13. History of Music, from the period of Bach and Händel to the present day, with emphasis on the lives and personalities of the great masters. *Second semester; Tu., Th.*, 2:30; *two credits.* Mr. HALL.

14. Musical Appreciation. Lectures with illustrations on the pianoforte in musical structure, methods, aesthetics, and criticism. The chief forms studied are the Aria, Anthem, Rondo, and Sonata, followed by the analysis of larger compositions such as symphonies, operas, and oratorios. Technical skill in music is not essential for the appreciation of this course. *First semester; Tu., Th.*, 11; *two credits.* Mr. COERNE.

15. Masterpieces of Music. Analytical study of both classical and modern masterpieces. *Second semester; Tu., Th.*, 11; *two credits.* Mr. COERNE.

16. Applied Music. Advanced Pianoforte Playing. Voice Culture, Organ, or Violin. Junior and senior years only. Hours and credits to be arranged with the instructor and the Director of the School of Music, but not to exceed a total of ten semester hours.

17. Applied music. Ensemble Playing. Prerequisite, at least one year of course 16. *Hours to be arranged; two credits.* Mr. LOCKE.

18. Orchestral Music. Rehearsals of the University Orchestra. Prerequisite, the ability to play some instrument. *W.*, 7 *p. m. First year without credit, second year, one credit for each semester.* Mr. MANN, Mr. COERNE.

19. Choral Music. Rehearsals of the Choral Union. *Tu.*, 7:30 *p. m.; one credit for the whole year.* Mr. COERNE.

PATHOLOGY

PROFESSOR BUNTING, DR. JONES.

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

For Undergraduates and Graduates

101. General and Special Pathology. *Second semester; Tu., W., Th., F.,* 8 *to* 12. *Six credits.*

103. Experimental Pathology. *Second semester; M.,* 8 *to* 12; *two credits.*

For Graduates

204. Investigation under direction.

205. Journal club. *Tu.,* 9.

PHARMACOLOGY AND TOXICOLOGY

PROFESSOR LOEVENHART; MR. TATUM.

1, 2, 4, 5. General Courses. *First semester; lectures, M.,* 8, *Tu., Th.,* 1:30, *S.,* 11. *Laboratory, S.,* 8 *to* 11; *five credits.* MR. LOEVENHART, MR. TATUM.

8. Advanced Work. MR. LOEVENHART.

12. Individual Work. MR. LOEVENHART.

16. Journal Club. *Tu.,* 9.

PHARMACY

PROFESSOR KREMERS; MR. LANGENHAN, MR. LYNN.

For Undergraduates

1. Laboratory Technique. The principles and practice of pharmaceutical operations, a study in applied mechanics and physics. *Lectures and recitations, Tu.*, 11; *two laboratory periods.* Mr. KREMERS, Mr. LYNN.
2. Pharmaceutical Technology. The study and manufacture of galenical and other preparations. *First semester; lectures and recitations, Tu., Th.*, 11; *three laboratory periods.* Mr. KREMERS, Mr. LANGENHAN.
3. Prescription Practice. The study of the prescription and of the materials that enter into it; practice in the compounding of physicians' prescriptions; also the study of physical, chemical, and therapeutical incompatibilities. *Second semester; lectures and recitations, Tu., Th.*, 11; *two laboratory periods.* Mr. KREMERS, Mr. LANGENHAN.
4. Drug Store Practice. A course of lectures and topics on aspects of drug store practice, ranging from the planning and equipment of a store to salesmanship. Practical talks by druggists and others will be a special feature of the course. *F.*, 3:30. (Given 1912–13.) Mr. KREMERS and special lecturers.

10. History of Pharmacy. Lectures and topics. During the first semester the development of pharmacy in the principal countries of Europe is briefly traced; during the second semester a more detailed study of the development of pharmacy in the United States is made. (Given 1911–12.) Mr. KREMERS.

PHILOSOPHY

PROFESSORS JASTROW, MCGILVARY (Chairman), SHARP; DR. KALLEN, DR. OTTO, DR. STARCH, DR. WRIGHT.

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

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

For Undergraduates

1. Psychology. Introductory Course. *First semester; three credits.* Mr. JASTROW, Mr. SHARP, Mr. STARCH, Mr. KALLEN.

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

   Section 2. *M., W.,* 8, *and F., at an hour to be arranged.* Mr. SHARP, Mr. KALLEN.

11. Logic. *First semester; M., W., F.,* 9 *and* 11; *repeated the second semester; M., W., F.,* 8 *and* 1:30. Mr. WRIGHT, Mr. OTTO, Mr. KALLEN.

21. Introduction to Philosophy. *Second semester; M., W., F.,* 9. Mr. MCGILVARY.

23. The Philosophic Thought of the Nineteenth Century as Reflected in English Literature. Wordsworth, Byron, Shelley, Carlyle, Emerson, Tennyson, and Browning studied as psychological types, and as social and religious philosophers. No prerequisites. *Second semester; Tu., Th.,* 10; *two or three credits.* (Omitted 1911–12.) Mr. WRIGHT.

9a. Psychology of Religion. The development of religion in the race; contemporary phenomena such as conversion, adolescence, prayer, mysticism, revivals; social signifi-

cance and philosophy of religion. *First semester; Tu., Th.*, 11; *two or three credits.* Mr. WRIGHT.

25. The Relation of Man to Nature. *Second semester; Tu., Th.*, 11. Mr. OTTO.

31. History of Ancient and Medieval Philosophy. *First semester; M., W., F.*, 11. Mr. KALLEN.

32. History of Modern Philosophy. *Second semester; M., W., F.*, 11. Mr. OTTO.

41. Ethics. Introductory Course. *Second semester; M., W., F.*, 8. Mr. SHARP.

42. Social and Political Ethics. A study of moral rights, especially of the rights of personal liberty, freedom of contract, national independence, suffrage, and property. *First semester; two sections; Tu., Th.*, 11 *and* 1:30. Course 41 is not required as a preliminary. Mr. SHARP.

44. History of Morality. An account of moral practice among some so-called primitive peoples and among some historical peoples in ancient times. *First semester; M., W., F.*, 9; *two or three credits.* Mr. MCGILVARY.

48. Psychology of Social Relations. The import of psychological processes for the explanation of social relations, with emphasis upon instincts, emotions, desire, will, and the self. *Second semester; Tu., Th.*, 8; *two or three credits.* (Omitted 1911–12). Mr. WRIGHT.

49. Moral Education, with special reference to the high school. *Second semester; Tu.*, 2:30. Mr. SHARP.

51. Aesthetics. A general survey of aesthetical appreciation, with practical applications to art. An introductory course. *First semester; M., W.*, 2:30. Mr. JASTROW.

For Undergraduates and Graduates

102. Advanced Analytical Psychology. *Second semester; Tu., Th.*, 1:30 (subject to change). Mr. SHARP.

103. Experimental Psychology, Part I. (a) Lectures and demonstrations. *First semester; Tu., Th.*, 11; (b) Laboratory practice *at hours to be arranged.* (a) and (b) together, *three credits.* Part I deals with sensation, perception, movement, reactions, and the simpler functions of the mental life. Mr. JASTROW, Mr. STARCH.

104. Experimental Psychology, Part II. (a) Lectures and demonstrations. *Second semester; Tu., Th.*, 11; (b) Laboratory practice *at hours to be arranged.* (a) and (b) together, *three credits.* Part II deals with memory, association, attention, imagination, reasoning, the emotions, and the more complex manifestations of the mental life. Either course 103 or 104 may be taken in advance of the other, or separately. Course 1 or its equivalent is a desirable prerequisite. Mr. JASTROW, Mr. STARCH.

104a. Experimental Psychology for Premedical Students. A survey of mental behavior and conditions, and their abnormal variation. *Second semester; M., W.*, 2:30; *laboratory period; Tu., Th.*, 1:30 *to* 4:30. Mr. JASTROW, Mr. STARCH.

105. Research in Psychology. *Throughout the year; hours to be arranged.* Mr. JASTROW, Mr. STARCH.

106. Comparative Psychology. Lectures and assigned readings on animal psychology and mental development in man. *Second semester; M., W.*, 3:30. Mr. JASTROW. (Omitted 1912–13.)

107. Abnormal Psychology. Lectures and assigned readings covering the main forms of unusual and abnormal mental phenomena. *Second semester; M., W.*, 3:30. (Omitted 1912–13.) Mr. JASTROW.

119. Psychological Principles of Advertising. *Second semester; two sections; Tu., Th.*, 8 *and* 1:30. Mr. STARCH.

126. Bearing of Evolution on Philosophy. *First semester. M., W., F.*, 9. (Omitted 1911–12.) Mr. WRIGHT.

134. Contemporary Philosophy. *Throughout the year; M., W., F.*, 10. Mr. MCGILVARY. One of the following courses is prerequisite: 102, 21, 25, 32. Mr. MCGILVARY.

136. The British Philosophers of the Eighteenth Century. Locke, Berkeley, and Hume, prefaced by Bacon and Hobbes. The development of their thought, and their relationship to literature and history. *First semester; M., W., F.*, 10. Mr. WRIGHT.

137. Kant. *The Critique of Pure Reason.* Its social and philosophic background, its influence upon subsequent conceptions of the world and the individual in religion, art, politics, literature, and philosophy. *Second semester; M., W., F.*, 10. Mr. KALLEN.

138. Typical Theories of Life. Analysis and Criticism of the more representative theories of life of ancient medieval and modern times. Historic definitions of the ideals of Happiness, Duty, Salvation and Progress. The Life of Reason. *Second semester; M., W., F.*, 9. Mr. KALLEN.

145. The Evolution of Morality. *First semester; two credits.* (Omitted 1912–13.) Mr. SHARP.

146. Contemporary Moralists. *Second semester; two credits.* (Omitted 1912–13.) Mr. SHARP.

154. The Philosophy of Art. Historic conceptions of beauty, comedy, and tragedy. Basis and material of Art. Character and value of design, architecture, music, sculpture, painting, literature, and drama. Art in its relations to society, science, religion. Place of Art in civilization. *Second semester; M., W., F.*, 11. Mr. KALLEN.

For Graduates

210. Psychological Seminary. *Alternate weeks.* Mr. JASTROW.

213. Advanced Logic. *Two credits.* (Omitted 1911–12.) Mr. OTTO.

240. Metaphysical Seminary. *Throughout the year; Tu.*, 2 *to* 4. Mr. MCGILVARY.

247. Ethical Seminary. *Throughout the year; W.*, 4 *to* 6. Mr. SHARP.

PHYSICAL EDUCATION

See Department of Physical Education, p. 507.

PHYSICS

PROFESSORS MASON, MENDENHALL, SNOW (Chairman); ASSOCIATE PROFESSOR INGERSOLL; ASSISTANT PROFESSORS GAGE, TERRY; DR. FORSYTHE, DR. FULCHER, DR. ROEBUCK, MR. STEVE; MR. BIRGE, MR. DAHM, MR. DE BRA, MR. GRAY, MR. JOHNSON, MR. KILLEBREW, MR. LIBBY, MR. MEGGERS, MR. MILLER, MR. RHODES, MR. STOEKLE, MR. TARRELL, MR. WEGEL, MR. ZOBEL.

Following the general lectures, seven other elementary courses are given for those who desire a further knowledge of the subjects treated in course 1, or for those who are preparing to teach.

Courses 110–116 are more advanced in nature, and presuppose a working knowledge of the calculus; while courses 210–220 are strictly graduate in character, and are designed primarily for those who are making a special study of the higher branches of physics.

For Undergraduates

1. General Lectures and Introductory Laboratory Practice. This course is open to election by all students, and may be taken without difficulty by those who have not had the mathematics of the freshman year.
   Throughout the year; Lectures M., Tu., W., Th., 11. Mr. SNOW. *One recitation by the class in smaller sections.* Mr. ROEBUCK, Mr. STEVE, Mr. BIRGE. *Laboratory practice twice a week at hours to be arranged.* Mr. GAGE, Mr. STEVE, Mr. DE BRA, Mr. GRAY, Mr. JOHNSON, Mr. KILLEBREW, Mr. LIBBY, Mr. MEGGERS, Mr. MILLER, Mr. RHODES, Mr. STOEKLE, Mr. TARRELL, Mr. WEGEL, Mr. ZOBEL.
2. Advanced Lectures on Heat and Light. The subjects here treated are discussed more fundamentally than is possible in course 1, and lead to the still more advanced work given in course 113. *First semester; M., W., F.* 8, *and one quiz.* Mr. MENDENHALL.
3. Advanced Laboratory Practice in Heat and Light. A laboratory course of advanced measurements in heat and light, designed to accompany course 2. *First semester; Th.*, 1:30 *to* 5:30, *S.*, 8 *to* 12; *two credits.* Mr. MENDENHALL, Mr. DAHM.
4. Advanced Lectures on Electricity and Magnetism. This course deals with the important principles and theories in electricity and magnetism, and is preparatory to the higher treatment of the subject given in course 112. *Second semester; M., W., F.*, 8, *and one quiz.* Mr. TERRY.
5. Advanced Laboratory Practice in Electricity and Magnetism. A higher laboratory course, designed to accompany course 4. *Second semester; S.*, 8 *to* 12, *two credits.* Mr. FORSYTHE.
6. The Teaching of Physics. A course of experimental lectures and demonstrations given by the members of the class, and designed to serve as a practice course for those

who are preparing to teach. The main purpose is to train each person in the clear presentation of the topics treated, and to acquaint him with the details of manipulating demonstrational apparatus. The course is open to all who elect physics either as a major or as a minor study. *Second semester; Tu., Th.*, 4:30. Mr. SNOW.

7. Photography. This course is designed to give instruction in a number of photographic methods, including the making of lantern slides, enlarging, microphotography, color photography, and such other processes as will enable the student to make practical use of photography in the various lines of scientific work. *Second semester; one lecture and two laboratory periods a week at hours to be arranged; two credits.* Mr. ROEBUCK.

8. Thesis. At the beginning of the first semester of his senior year, the student who chooses physics as his major study is expected to select a special line of investigation, in which, under the guidance of the instructors, he is to conduct an independent research throughout the year. *Each semester; two credits.* Mr. MENDENHALL, Mr. INGERSOLL, Mr. TERRY.

For Undergraduates and Graduates

110. Laboratory Arts. A course designed to familiarize students with the more common mechanical and other processes which are useful in advanced laboratory practice. *First semester, at hours to be arranged; one credit.* Mr. MENDENHALL, Mr. INGERSOLL, Mr. TERRY, Mr. ROEBUCK, Mr. FOERST, Mr FULCHER.

111. High and Low Temperature Measurement. Recent developments in theory and practice are considered, and laboratory exercises with the various methods are given. *First semester; one lecture and one laboratory period a week at hours to be arranged; two credits.* Mr. INGERSOLL.

112. Introduction to the Theory of Electricity. This course furnishes a working knowledge of the more important concepts and methods used in the mathematical study of electricity and magnetism. *First semester; Tu., Th., S.*, 10. Mr. MASON.

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

114. Electrical and Magnetic Measurements. A laboratory course for the careful measurement of the more complex electrical and magnetic quantities, and the determination of constants. Elective for all who have completed courses 5 or 54. *Second semester; Tu., Th.*, 1:30 *to* 3:30. *Two credits.* Mr. TERRY, Mr. FORSYTHE.

115. Modern Optical Instruments. An advanced laboratory course in light and radiation, designed to follow courses 2 and 3, which are prerequisites. *Second semester; two laboratory periods a week, at hours to be arranged; two credits.* Mr. INGERSOLL.

116. 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.*, 3:30 *to* 5:30. Mr. MENDENHALL.

For Graduates

210. Elements of Theoretical Physics. This course, which includes, among other topics, the kinetic theory of gases, the potential function, and the conduction of heat, is designed as a first graduate course, and is required of all candidates for the master's degree offering physics as a major. *Throughout the year; M., W., F.*, 9. Mr. INGERSOLL.

211. Advanced Dynamics. This course deals with the mechanics of rigid, fluid, and elastic bodies; wave motion, sound. A first course in mechanics is a prerequisite. *Throughout the year, M., W., F.*, 11. Mr. MASON.

212. Applications of the Electron Theory. A course dealing with the electron hypothesis and some of its consequences. *First semester; two credits.* Mr. MENDENHALL.

213. Molecular Mechanics. Special topics treating of the constitution and properties of matter from the mechanical stand point. *Second semester; two credits.* (Omitted 1912–13). Mr. MASON.

214. Ionization and Luminescence. Alpha, beta, cathode, canal, anode, and similar rays are considered with reference to their power of penetrating matter and of producing ionization and luminescence. Special emphasis is laid upon the interpretation which experiments with these rays give as regards the structure and properties of atoms. *Second semester; two credits.* Mr. FULCHER.

215. Thermodynamics. The treatment in this course is substantially the same as that given in Bryan's *Thermodynamics*, with additional applications to problems of radiation. *Throughout the year, M., W., F.*, 10. (Omitted 1912–13). Mr. MENDENHALL.

216. Theory of Electricity. A mathematical treatment of the Maxwell theory and its later developments, based on the electron hypothesis and the principle of relativity. *Throughout the year; M., W., F.*, 9. Mr. MASON.

217. The Electromagnetic Theory of Light. A mathematical treatment of electromagnetic waves and their relations to the phenomena of light. *Throughout the year; M., W., F.*, 10. Mr. MENDENHALL.

218. Magneto and Electro-optics. Special topics in magneto and electro-optics, thermal radiation, and similar problems. *Throughout the year; Tu., Th.*, 11. Mr. MASON.

219. The Theory of Relativity. A study of the principle of relativity and its applications. *Throughout the year; one credit.* (Omitted 1912–13). Mr. MASON.

220. Graduate Research. This course is designed for those who have completed the equivalent of the laboratory practice represented by the undergraduate courses, and who now desire to devote some time to investigation in special lines. Mr. MASON, Mr. MENDENHALL, Mr. INGERSOLL.

Engineering Courses

51. Mechanics, Sound, and Light, with Laboratory Practice. *First semester.*

52. Heat, Electricity and Magnetism, with Laboratory Practice. *Second semester.*

These courses are similar in many respects to course 1, but are more technical in nature, and are particularly designed to meet the needs of engineering students. *Lec-*

tures, M., W., 3:30. Mr. TERRY. *Two recitations a week by the class in smaller sections.* Mr. TERRY, Mr. INGERSOLL, Mr. FORSYTHE, Mr. FULCHER. *Laboratory practice twice a week, throughout the year.* Mr. GAGE, Mr. STEVE, Mr. DE BRA, Mr. GRAY, Mr. JOHNSON, Mr. KILLEBREW, Mr. LIBBY, Mr. MEGGERS, Mr. MILLER, Mr. RHODES, Mr. STOEKLE, Mr. TARRELL, Mr. WEGEL, Mr. ZOBEL.

54. Precision of Measurements. A laboratory course in the exact determination of electrical quantities. Required of juniors in Electrical Engineering, and elective for students in other engineering courses. *First semester; two credits.* Mr. TERRY, Mr. FORSYTHE.

PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY

PROFESSOR EYSTER (Chairman); ASSISTANT PROFESSORS BRADLEY, MEEK; MR. PETERSEN, MR. GASSER.

For Undergraduates

1a. Elements of Human Anatomy and Physiology. Lectures, quizzes, and demonstrations giving a general knowledge of the structure and functions of the human body, and specially adapted to teachers. Students electing this course should have some chemistry. *First semester; M., W., F.*, 9. Mr. MEEK.

1b. Laboratory Course in Elements of Physiology. Required of sophomores in Home Economics, whose work in 1a will be so reduced that their total credits in physiology will still remain 3. Open to others taking 1a, as an elective. *First semester; hours to be arranged; one credit.* Mr. MEEK, Mr. PETERSEN.

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

4. Physiological Chemistry. (a) Lectures. (b) Laboratory course. (c) Conferences. *Second semester, Tu., Th., S.*, 10 *to* 12; *F.*, 8 *to* 12; *four credits.* Mr. BRADLEY, Mr. GASSER.

5. Physiology. Lectures and demonstrations. *Second semester; M., W.*, 11; *two credits.* Mr. EYSTER, Mr. MEEK, Mr. GASSER.
6. Physiology. Course 5 continued. *First semester; M., Tu., W., Th., F.*, 11. Mr. EYSTER, Mr. MEEK, Mr. PETERSEN.
7. Laboratory work. Required of all students taking course 6. *First semester until the Christmas recess; M., W., F.*, 1:30 *to* 4:30; *two credits.* Mr. EYSTER, Mr. MEEK, Mr. PETERSEN.
8. Advanced Laboratory course in Physiology (including research). Mr. EYSTER.
10. Advanced Laboratory Course in Physiological Chemistry. Mr. BRADLEY.
12. Journal Club. Advanced students are expected to report from time to time upon papers of physiological and physiological-chemical interest that may appear in the current journals. *Throughout the year; one credit.*

POLITICAL ECONOMY

PROFESSORS ADAMS, COMMONS, ELY, GILMAN, ROSS, SCOTT, TAYLOR, URDAHL (Chairman); ASSISTANT PROFESSOR HESS; SPECIAL LECTURER L. A. ANDERSON, DR. GRAY, MR. HAYES, MR. BEECHER, MR. BIRD, MR. DUDGEON, MR. FREEMAN, MR. GRUHL, MR. KERSCHENSTEINER, MR. KIEKHOEFER, MR. KING, MR. LEONARD, MR. LEWIS, MR. ODEGARD, MR. TRUMBOWER, MR. VALENTINE, MR. WITTE.

GENERAL STATEMENT

The purpose of the department is to afford means for systematic and thorough study in economics and social science. The courses are graded and arranged so as to meet the wants of students in the various stages of their progress, beginning with elementary and proceeding to the most advanced work. They are also designed to meet the needs of different classes of students; as, for instance, those who intend to enter the public service, business, the professions of law, journalism, the ministry, charity work, or teaching, and those who wish to supplement

their legal, theological, or other professional studies with courses in economics or social science. Capable students are encouraged to undertake original investigation and assistance is given them in the prosecution of such work through seminaries and the personal guidance of instructors. Special funds or equivalent arrangements have been secured for the investigation of the American labor movement, taxation in Wisconsin, railway transportation and the manufacturing industries of Wisconsin. A means for the publication of the results of investigations of merit and importance is provided in the University Bulletin.

Working Fellowships

An arrangement has been made between the University and certain departments of the State Government whereby six positions, bearing an annual salary of $600.00 each, are available for graduate students in Economics during the academic year 1911–12.

Two of these positions, known as Working Fellowships in taxation are provided by the Tax Commission of this state; two others known as Working Fellowships in Transportation and Public Utilities, are connected with the Railroad Commission; and two, known as Working Fellowships in Insurance, in the office of the State Insurance Commissioner.

The nomination of these fellows is made to the regents by the President of the University, following the methods used in the appointment of persons to the regular university fellowships, and appointment made after the candidate has satisfied the Commission to which he is nominated that he is qualified for the work.

The working fellows are required to work half time on statistical and other investigations in taxation, insurance, railway and public utilities regulation, as well as any other work assigned by the commission, or commissioner by whom they are employed, but it is expected that the services rendered to these departments will be in part, at least, of the nature of research work, furnishing a valuable supplement to academic studies in the Department of Political Economy.

The fellowships are open to university and college graduates on the same terms as the regular University fellowships, but it is desirable that candidates shall have had considerable graduate

work in economics, or at least special training along the lines indicated above.

It is hoped that the arrangement will be continued by the regents and commissions for the coming year.

For further information, application may be made to the University Registrar.

Aims

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

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

1. To provide instruction in economics and sociology for undergraduates in all the courses of the University.
2. To provide advanced and graduate work in the studies falling within its field.
3. To assist and encourage the development of these studies.
4. With the co-operation of other departments to provide special training courses for various practical pursuits.
5. To supplement the work of the Law School.

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

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

Political Economy as an Undergraduate Major

The requirements for an undergraduate major, in addition to the thesis, are twenty-four credits as a minimum, selected in part from the advanced courses.

Political Economy as a Graduate Major

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

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

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

Candidates for the master's degree must present in their principal subject the equivalent of at least two full graduate courses during one year, and in their subordinate subject the equivalent of at least one such course.

Political Economy as a Graduate Minor

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

General Requirements

I. Economics 1a is a prerequisite for all other courses in Economics.

II. Courses open to students who have completed Economics 1a are 1b, 3, 5, 120, 122, 123a, 123b, 125, 130, 135, and 138.

III. As a rule, no person will be admitted to other courses unless he has had 1a and the elementary course in the field in which the course in question belongs.

IV. Ordinarily no student will be admitted to courses designated, "For Graduates," unless he has had at least a year's work in Economics and the elementary work in the field covered by the graduate course.

For Undergraduates

1a. The Elements of Economics. A general survey based upon *Ely's Outlines of Economics*, supplemented by lectures, assigned reading, and exercises. Required of sophomores in the Course in Commerce and of all students beginning the subject of economics. *Repeated each semester; lectures Tu., Th.*, 9 *and two quizzes; quiz sections Tu., Th.*, 8, 9, 11, 1:30, 2:30, 3:30. Mr. URDAHL, Mr. BEECHER, Mr. BIRD, Mr. GRAY, Mr. FREEMAN, Mr. KING, Mr. KIEKHOEFER, Mr. LEONARD, Mr. LEWIS, Mr. ODEGARD, Mr. TRUMBOWER.

1b. Elements of Economics. A continuation course in general economics intended primarily for students who have had course 1a and wish to take up a survey of the chief economic problems of modern industrial society. *Tu., Th.*, 9 *and two quizzes, quiz sections to be arranged, four credits, second semester.* Mr. URDAHL and instructors.

1. Agr. Principles of Agricultural Economics. The outlines of economics in their application to agriculture. *First semester; three credits; second semester; two credits.* Mr. TAYLOR.

2a. Social Evolution. A synoptic course, consisting of lectures copiously illustrated with lantern slides in order to give a graphic idea of the variety of social forms, and to show the actual evolution in the great departments of social life. Attendance only. *First semester; M., W., F.*, 10; *one credit.*

2b. Social Problems. Problems of the family, the race, and the social order. Divorce, child welfare, women in industry, status of women, the negro, immigration, race suicide, alcoholism, the cityward trend, conservation of human resources, business morality, etc. *Second semester; M., W., F.*, 10. Mr. Ross.

3. Elements of Public Finance. An introductory study of the general principles of public expenditure, revenue, and indebtedness. *First semester; M., W., F.*, 10; *three credits.* Mr. GRAY.

5. The Elements of Money and Banking. An introductory course, based on Scott's *Money and Banking.* Repeated each semester. *M., W., F.*, 8 and 9. Mr. SCOTT, Mr. TRUMBOWER.

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

8 Agr. Farm Records and Accounts. Inventories, bookkeeping, and accounting as applied to farm operation. *Second semester; two credits.* Mr. VALENTINE.

*8a. The Elements of Accounting. Business forms, methods, and documents. Double-entry drills, modern forms of accounting and practice in the use of essential books, and in treating and properly stating partnership accounts. *Throughout the year; M., W.*, 1:30 *to* 3:30, *or Tu., Th.* Mr. GILMAN, Mr. HAYES, and assistants.

8b. The Theory and Practice of Accounting. Corporation accounts, analysis of classified statements, manufacturing and trading accounts. Practical problems in accounting procedure. Prerequisite, course 8a. First semester's work may be taken without the second. *Throughout the year; Tu., Th.*, 10 *to* 12. Mr. GILMAN, and assistants.

8c. Advanced Accounting and Auditing. This course is designed to prepare special students for employment as public accountants and auditors. Lectures, analysis of accounting systems and laboratory practice. Must be preceded by 8a and 8b. *Throughout the year; M., W.*, 1:30 *to* 3:30 *F.*, 9. Mr. GILMAN, Mr. FRAZER.

*8d. Business Organization and Management. A practical study of the typical industries and occupations and of the fundamental principles and methods of modern business pro-

---

* These courses will not be counted as a part of the 120 credits required for graduation in the College of Letters and Science.

cedure. Course open to seniors only. *Throughout the year; Tu., Th.*, 9. Mr. GILMAN, Mr. BUTLER.

9. Commercial Law. The law of contracts, commercial paper, agency, partnership, corporations, and property. Principles of law underlying business transactions. *Throughout the year; M., W., F.*, 11; *four credits.* Mr. GILMAN.

For Undergraduates and Graduates

120. Industrial Evolution and Its Problems. A survey of industrial development followed by an examination of special problems, such as custom and competition, monopolies and trusts, concentration of wealth, municipal ownership, the inheritance of property, etc. *First semester; lectures, Tu., Th.*, 11; *and one hour for recitation and textbook work to be arranged; three credits.* Mr. ELY, Mr. GRAY, Mr. TRUMBOWER.

121. History of Economic Thought. 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. (Omitted 1911–12). *First semester; Tu., Th.*, 10. Mr. ELY, Mr. GRAY.

122. Modern Socialism. *First semester; Tu., Th.*, 9.

123a. Labor Problems. Races, immigration, trade unions, employers' associations, etc. *First semester*, 1911–12; *Tu., Th.*, 9. Mr. COMMONS.

123b. Labor Legislation. American and foreign. Trade unions, factories, accidents, industrial hygiene, etc. *First semester*, 1910–11; *Tu., Th.*, 9. Mr COMMONS.

124. Problems in Taxation. A continuation of Course 3. Comprehends a study of specific forms of taxation; customs and excises, income, inheritance, insurance, mortgage, corporation, railway, and general property taxes; followed by a survey of tax systems. *Second semester; M., W., F.*, 9. Mr. GRAY.

125. Tariff History of the United States. A study of economic principles underlying our tariff legislation, with particular attention to the economic forces dominant in each of the important periods. *Second semester; F.* 8. (Omitted 1911–12).

127. Economic History of Agriculture. A study of agriculture past and present, explaining historical changes and geographical differences in methods of farming. In 1912–13 this course will deal with the United States, in 1913–14 with Europe. *First semester; two credits.* Mr. TAYLOR.

128. Research Work in Agricultural Economics. Opportunity is given for advanced students to do research work on selected problems in agricultural economics. *Second semester; two credits.* Mr. TAYLOR.

130. Statistics. A treatment of general statistical methods followed by the discussion of concrete problems in economic and social statistics. *Four hours laboratory work; hours to be arranged. Throughout the year; lectures M., W.,* 1:30; *three credits.* Mr. HESS, Mr. KING, Mr. LEWIS.

132. Teachers' Course. Students electing this course meet each week with the conference of instructors of elementary economics. They are also required to visit regularly quiz sections and to report on methods and devices used in secondary school teaching. *First semester; W.,* 5; *two credits.* Mr. URDAHL.

133. Financial History of the United States. The main lines of our financial development, including our monetary and banking history. *First semester; lectures Tu., Th.,* 11. *Quiz hour to be arranged.* Mr. SCOTT.

134a. The Money Market. Lectures on the machinery, methods, and movements of the American and English money markets. *First semester; lectures Tu., Th.,* 11. *Quiz hour to be arranged.* (Omitted 1912–13). Mr. SCOTT.

135. 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. *First semester; M., W., F.,* 8. Mr. HESS.

137. Corporation Finance. A study of corporations, corporation securities and the methods of the stock market. *Second semester; M., W., F.,* 10. Mr. URDAHL.

138. Insurance Economics. Principles and methods of insurance, rise, progress, and problems of associations for indemnity. Special attention will be given to the various forms of life insurance, including an elementary survey

of life insurance mathematics. *Second semester; Tu., Th.*, 8. Mr. ANDERSON.

139. Social Psychology. The social mind and its reaction upon the individual mind. The laws of mob-mind, "craze," fashion, conventionality, custom, public opinion, leadership, and innovation. Interpretation of contemporary society. *First semester; M., W., F.*, 11. Mr. Ross.

140. General Sociology. A systematic survey of social processes with the view of establishing principles and laws. The inductive method is followed, and a large amount of classified data is presented. *Second semester; M., W., F.*, 11. Mr. Ross.

141. Charities and Corrections. A study of dependents and their relief, of defectives and their institutional treatment, of delinquents, causes and prevention of crime, prison management and discipline. Public institutions will be visited. *Second semester; M., W., F.*, 10. Mr. Ross.

142a. Public Utilities. Municipal; American and foreign; public and private ownership and regulation; economic and legal principles. Seniors and graduates. *First semester; M., W., F.*, 8. Mr. DUDGEON, Mr. GRUHL.

142b. Public Utilities. Research at office of Railroad Commission. *Throughout the year; three credits each semester.* Mr. GRUHL.

143. Economics of Production Socially Considered. A critical study of the process of production from the social view point. The merits of the existing economic order, in this respect, are compared with those of the various programs of reform. *Tu., Th.*, 11. Mr. GRAY.

144. Socialism. Historical causes of the socialist movement, and survey of the various schools of socialist thought. A critical and impartial study of socialism as a philosophy and as a program of economic reform. *Summer Session.* (Omitted 1912). Mr. ELY.

145a. American Labor History to 1860. Industrial and political evolution. Lectures. *Second semester* 1910–11; *Tu., Th.*, 9. Mr. COMMONS.

145b. American Labor History since 1860. Lectures. *Second semester*, 1911–12; *Tu., Th.*, 9. Mr. COMMONS.

For Graduates

250. Seminary in Finance. For seniors and graduate students who desire training in the investigation of financial topics. *Weekly at hours to be arranged.* Mr. SCOTT.

251a. The Classical Economists. The evolution and characteristics of the classical political economy of England. Lectures and round-table discussions. *Second semester; Tu., Th.*, 10. (Omitted 1912–13). Mr. SCOTT.

251b. Political Economy since John Stuart Mill. The reaction against the classical political economy of England and the chief lines of development since John Stuart Mill. Given alternate years with course 51a. *Second semester; Tu., Th.*, 10. Mr. SCOTT.

252. The Distribution of Wealth. Part II. This course is an introduction to the economic philosophy of distribution. Special attention will be paid to Landed Property and the Rent of Land. *First semester; M., W., F.*, 10. Mr. ELY, Mr. GRAY.

253. Distribution of Wealth. Part III. The shares of the various factors in distribution, viz.; rent, interests, profits, and wages. May be taken by those who have not had Part I, course 252. *First semester; M., W., F.*, 10. (Omitted 1911–12). Mr. ELY, Mr. GRAY.

254. Trust Movements. A series of lectures on the evolution of trusts and cartells in Germany and continental Europe, supplemented by reports and collateral reading on trusts and pools in the United States. *First semester; M., W., F.*, 10. Mr. URDAHL.

255. American Public Finance. Part I. A critical and historical discussion of the finances of the federal government. *Second semester; Tu., Th.*, 2:30 *to* 4.

256. 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. (Omitted 1910–11).

257. Principles of Taxation. A discussion of the history, principles, and problems of American taxation. Open only to students who have had previous training in Public Finance. *Tu., Th.*, 11. Mr. URDAHL.

260. Seminary on Cities. Comparison of city with country in respect to sex, age, race, birth rate, longevity, marriage, divorce, criminality, vice, education, moral character, intellectual traits, and political tendencies. *First semester; W.*, 7:15 *to* 9:15. (Omitted 1912–13). Mr. Ross.

261. Seminary on the Psychology of the American People. Comparison of one American community or section with others in respect to pauperism, criminality, migrancy, industriousness, forcefulness, socialibiity, conservatism, etc. *First semester; W.*, 7:15 *to* 9:15. Mr. Ross.

262. Seminary on the Family. Study of the nature, extent and significance of the changes taking place in the American family under the stress of modern industrial, economic, and cultural forces. *Second semester; W.*, 7:15 *to* 9:15. (Omitted 1911–12). Mr. Ross.

263. Seminary on the Dynamics of Population. The economic, religious, military, political, legal, and social factors affecting the quantity and quality of population. Natural, social, and artificial selection. Outlines of eugenics. *Second semester; W.*, 7:15 *to* 9:15. (Omitted 1912–13). Mr. Ross.

264. Seminary in Taxation. *Throughout the year; Tu.*, 4:30 *to* 6. Mr. Adams.

265. Seminary in Labor and Industry. *Throughout the year; Tu.*, 3:30 *to* 5:30. Mr. Commons.

266. Seminary in Economic Theory. Land and Rent will be the subject during 1912–13. *Throughout the year; Tu.*, 7:30 *to* 9:30. Mr. Ely.

270. Economic Conference. The faculty and graduate students of the department meet once each month for conference and discussion of individual investigations, current economic literature, and other suitable topics.

SPECIAL LECTURES

In addition to the regular courses of class instruction and lectures described above, special lectures are given by scholars and public men from without the University.

POLITICAL SCIENCE

EMERITUS PROFESSOR PARKINSON, PROFESSOR REINSCH; ASSOCIATE PROFESSORS LLOYD-JONES, MCBAIN (Chairman); ASSISTANT PROFESSOR HALL; DR. MCCARTHY, MR. BAILEY, MR. CURTIS, MR. DUDGEON, MR. LOOMIS, MR. LOWRIE, MR. MACGREGOR, MR. MAYERS.

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. Course 7 (four fifths credit) is repeated each semester and must be taken either precedent to, or along with, any other of the more specialized courses in American government, politics, and law, including the following: 106, 112, 114, 115, 116, 117, 122, 126, 127, 130, and 134. Sophomores of advanced standing may make arrangements to take one or more of the following courses: 1, 7, 112, 115, 119, 120, and 122. The requirement for an undergraduate major in Political Science, in addition to the thesis, is twenty-one semester hours as a minimum.

In order to enable students, whose main work is in fields not allied to political science and who may lack the time to take the longer courses, to obtain a general view of the problem of politics, the following arrangements have been made; certain brief lecture courses are given (see courses 1, 4, and 119) which deal with subjects of interest to students in general, and in which only a limited amount of outside reading is required.

For Undergraduates

1. General Political Science. An introductory course in comparative and historical politics. *First semester; M., W., F.*, 8. Mr. BAILEY.
7. Government and Politics in the United States. A general study of the American system of government, national, state, and local. *Repeated each semester; lectures M., W., F.*, 9 *and one quiz.* Mr. MCBAIN, Mr. LOOMIS, Mr. MAYERS.
2. Elementary Law. The nature and sources of law and the methods of its application, including a general view of

the system of private law. *First semester; M., W., F.*, 11. Mr. HALL.

4. The Constitution of the United States. A course of lectures designed primarily for those who cannot give more time to this subject, and for students preparing to teach civics in secondary schools. *Throughout the year; Th.*, 10. Mr. HALL.

For Undergraduates and Graduates

106. Administrative Problems. A study of important administrative activities of the chief states of Europe and the United States. *Second semester; W.*, 5. Mr. MCBAIN.

108. Introduction to the History of Continental European Law.

109. Roman Law. *First semester;* The historical development of the Roman law and its influence in other countries. *Second semester;* The Institutes of Roman law. The principles of the law of persons and property. *Tu., Th.*, 2:30.

110. History of English and American Law. A study of the development of legal institutions in connection with political and social history. *Second semester; M., W.*, 12. Mr. REINSCH.

111. Jurisprudence. Analysis of the main concepts of the science of law, on the basis of the juristic classics. Open to advanced students who have had an elementary course in law. *Second semester; M., W., F.*, 11. Mr. HALL.

112. American Constitutional Law. A study of federal and state constitutional principles and limitations. *Throughout the year; M., W., F.*, 9. Mr. HALL.

113. Constitutional Law. Thayer's Cases on Constitutional Law. *The Law School Course.* Mr. SMITH.

114. Municipal Functions. A comparative study of the leading activities of European and American cities. (Partly illustrated). *Second semester; Tu., Th.*, 9. Mr. MAC GREGOR.

115. Municipal Government in the United States and Europe. A comparative study of municipal organization and administration. *First semester; M., W., F.*, 10. Mr. MCBAIN.

116. State Administration. A study of the local and state administrative systems of the United States. *Second semester; M., W., F.*, 11. Mr. McBain.

117. Federal Administration. A study of the organization, functions, and actual operation of the various branches of our national administration. *First semester; M., W., F.*, Mr. McBain.

118. International Law. The work during the first semester will deal with relations in time of peace; during the second semester arbitration and the law of war will be studied. *Throughout the year; M., W., F.*, 2:30. Mr. Reinsch.

119. Contemporary International Politics. A course of weekly lectures on questions of international or foreign politics which are of special importance at the present time. May be elected in successive years, as subject matter is changed annually. *Throughout the year; W.*, 5. Mr. Reinsch.

120. Oriental Politics and Civilization. The relations of the European powers and the United States to China and Japan, as well as the principal factors in the social and political life of Japan, China, and India, will be studied. *Second semester; M., W., F.*, 10. Mr. Reinsch.

121. Colonial Politics. A study of the principal systems of colonial government and administration in the dependencies. Given in 1911–12 and alternate years. *First semester; M., W., F.*, 10. Mr. Bailey.

122. Party Government. A study of the development, organization and methods of action of political parties in the United States; the legal control of parties; and reform tendencies. *First semester; Tu., Th.*, 10. Mr. Lloyd Jones.

123. Consular Service. A study of the American foreign service with special emphasis upon the consular service. *First semester; Tu., Th.*, 8. Mr. Lloyd Jones.

124. The Self-governing Colonies. A study of the political organization and activities of Canada, Australia, South Africa, and New Zealand. *First semester; M., W., F.*, 10. (Given 1910–11 and alternate years). Mr. Bailey.

125. The Law of the Press. The law of copyright, literary property, libel, privileged publications and other topics relat-

ing to the publication of books and newspapers. *Second semester; Th.*, 2:30. Mr. HALL.

126. The Theory and Practice of Legislation. A study of the methods of procedure of legislative bodies and the preparation of the subject matter and form of bills. The legislature is in session from January to June, in the odd-numbered years. *Throughout the year; Tu., Th.*, 11. Mr. LLOYD JONES, Mr. MCCARTHY.

127. European Governments. A study of the constitutional organization of the principal governments of Europe; with considerable attention to political parties and current political questions. *First semester; M., W., F.*, 9. Mr. LLOYD JONES.

128. Comparative Study of Constitution Making. Mr. LOWRIE.

129. Teachers' Course. Methods of teaching government in secondary schools. *Second semester; Th.*, 4 *to* 6. Mr. MCBAIN.

130. Judicial Administration. A study of the organization, jurisdiction, and actual operations of the courts with an inquiry into their defects in the administration of justice. *First semester; Tu., Th.*, 2:30. Mr. HALL.

131. Latin-American Political Institutions. A comparative study of the constitutional and administrative systems of the Latin-American Republics. *First semester; M., W., F.*, 10. Mr. REINSCH.

132. Current Political Topics. Study of current political problems with training in the use of sources and in literary presentations designed for students preparing for journalism. *Throughout the year; Tu., Th.*, 10. Mr. BAILEY, Mr. CURTIS.

133. Practical Bill Drafting. A study of the technique of bill drafting with practice in drafting actual measures. Open to senior and graduate students. *Second semester; M., F.*, 7. Mr. MCCARTHY, Mr. LLOYD JONES.

134. Rural Government. A study of the development and present condition of county, township, and village government. *First semester; M., W., F.*, 11. Mr. BAILEY.

135. Conservation of Natural Resources. A study of the problems of conservation and reclamation in the United States. *Second semester; Tu., Th.*, 8. Mr. BAILEY.

136. American Diplomacy. A study of the principal contemporary problems of the United States in foreign affairs; the participation of the United States in the development of International Law; the organization of the diplomatic service; the product of diplomatic action. (Given 1910–11 and alternate years.) Mr. LLOYD JONES.

137. Contemporary International Politics and Diplomatic Problems. A study of the present grouping of the powers and their mutual relations. *First semester; M., W., F.*, 11. (Given 1911–12 and alternate years). Mr. REINSCH.

142. Public Utilities. A comparison of public regulation and public and private ownership of municipal utilities in American states and foreign countries, including constitutional and judicial limitations, delegation of legislative power to commissions, physical valuation, reasonable rates and service, organization of public employees, cost, efficiency, social, and political results. *First semester; M., W., F.*, 8. Mr. COMMONS, Mr. DUDGEON, Mr. GRUHL.

144. The Legal and Political Status of Women. A study of the legal and political rights of women in the United States and the principal European countries with a review of the development of their status and of the movement for more complete political rights. *First semester; Tu., Th.*, 10.

145. History of Political Thought. The development of political philosophy from the Greeks to the present time, and its connection with political history. *First semester; M., W., F.*, 9. Mr. LLOYD JONES.

For Graduates

252. Seminary in Comparative Legislation. This course is open to undergraduates who have had course 126. *Throughout the year; F.*, 4 *to* 6. Mr. LLOYD JONES, Mr. MCCARTHY.

256. Philosophy of the State. A critical study of contemporary political thought and terminology. *Second semester; Tu.*, 4 *to* 6. Mr. REINSCH.

257. Juristic Classics. The Institutes of Gaius, first two books; reading and commentary. *Second semester; F.*, 12.

258. Seminary in Administration. *Second semester; Th.*, 7:30 *to* 9. Mr. MCBAIN.

259. Seminary in Municipal Problems. *Throughout the year; Tu.*, 7:30 *to* 9.

260. Seminary in International Law and Politics. A study of some selected topics in international law and diplomacy. 1910–1911, The codification of international law. *Throughout the year; W.*, 7:30 *to* 9:30. Mr. REINSCH.

261. Seminary in American Constitutional Law. Some important constitutional problem will be studied. *Second semester; Th.*, 4 *to* 6. Mr. HALL.

For groups of studies in the departments of History, Political Economy, and Political Science, arranged as special training courses in practical sociology, statistics, public service, and journalism, see the special announcement of the above departments, which may be had upon application to the Registrar. Students desiring to arrange their courses with a view to preparing for work in connection with the public service are invited to consult or correspond with the Chairman or the individual professors of the department of Political Science.

PUBLIC SPEAKING

ASSOCIATE PROFESSOR LYMAN (Chairman), MISS JOHNSON, MR. BUCHEN, MR. GARDNER.

The courses in public speaking are designed to give preparation in two general lines of work:—in elocution, interpretative reading, and dramatic presentation; and in the composition and delivery of public addresses. The courses are so arranged as to make possible systematic and progressive study in either branch of public speaking during the sophomore, junior, and senior years.

The University of Wisconsin participates in several inter-collegiate contests in oratory and debate. For these contests, the courses in public speaking are designed to give preparation. Men desiring to make inter-collegiate debating teams are advised to consider courses 5a, 5b, 11, 8, and 15. Men desiring to enter oratorical contests should consider courses 5a, 5b, 4a, 4b, and 15. In addition, the University, through its dramatic societies, pre-

sents several plays. Students interested in dramatic presentation or who wish to become public readers or teachers of English literature should consider courses 12, 16, 17, and 18.

Courses 3, 5a and 5b, 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. Course 3, Argumentation, listed as a course in English, is a part of the work of this department.

COMPOSITION COURSES

For Undergraduates

5a. The Composition of Public Addresses. This course deals with the structure and substance of the most important forms of public address. During the first semester the argument is studied. *First semester; M., W., F.*, 10. Mr. LYMAN.

5b. The Composition of Public Addresses. Continuation of 5a. The eulogy, the commemorative address, the after-dinner speech, the legislative address and other forms. This course is recommended to sophomores. *Second semester; M., W. F.*, 10. Mr. LYMAN.

3. Argumentation. Scheduled in the announcement of the Department of English as course 3 in Composition. Training in analysis, brief drawing, evidence, refutation, study of the principles of conviction, persuasion, and rhetorical presentation. *Throughout the year; Tu., Th.*, 2:30. Mr. LYMAN, Mr. GARDNER.

COURSES INCLUDING DELIVERY

For Undergraduates

1. Elementary Public Speaking. For freshmen only. The purpose of this course is to promote effective delivery by starting correct habits of breathing, vocalization, ease of presence and movement. The course is limited in number. The consent of instructors is required. *Second semester; twice a week; hours to be arranged; no credit.* Mr. LYMAN.

4a. Oratorical Delivery. Study of the principles of oral expression for the cultivation of a natural and direct style. Daily practice in speaking. Small sections for voice training. *First semester; Tu., Th.*, 10. Mr. LYMAN, Mr. BUCHEN.

4b. Oratorical Delivery. Continuation of course 3a. *Second semester; Tu., Th.*, 10. Mr. LYMAN.

15. Practical Public Speaking. Presentation of the various forms of public address, voice training, study of gesture, bearing, and the elements of ease, grace, and force in presentation. Designed for upper classmen who desire some general training in public speaking. *First semester; two sections; Tu., Th.*, 9, 2:30. Mr. BUCHEN.

11. Debating. Practical work in brief-drawing, the collection and handling of evidence and debating. The course can be taken only with the consent of the instructor, and is open only to those who have had course 3 or 5a. *Second semester; hours to be arranged; two credits.* Mr. LYMAN, Mr. BUCHEN.

8. Ex-tempore Speaking. Practice in the rapid preparation of speeches on the topics of the day and in the impromptu delivery of the same. Lectures on the short speech and ex-tempore speaking. *Second semester; two sections; Tu., Th.*, 9, 2:30. Mr. BUCHEN.

INTERPRETATION

For Undergraduates

Scope and Method. Work arranged in sequence through three years. First year, fundamental training. Second year, review and fuller exemplification. Various literary forms dramatically interpreted. Third year, advanced study in character and impersonation.

12a. Principles and Practice. Essential training in mind, voice and body, preparatory for any line of public speaking. Sections not exceeding fifteen. *Throughout the year; M., W., F.*, 9, 10. MISS JOHNSON.

12b. Beginning section in the work of 12a. Limited to sophomores and juniors. *Second semester; M., W., F.*, 11. Miss JOHNSON.

16a. Interpretative Reading. 12a reviewed. Study and presentation of various literary forms. Lyric, epic, story, drama. Classic authors. Course to begin in alternate years with 17. Prerequisite, 12a or permission of instructor. *First semester; Tu., Th.*, 10 *and* 11. (Given 1911–12). MISS JOHNSON.

16b. Interpretative Reading. Modern authors. Short story particularly considered. One modern play. As You Like It. The Tempest. *Second semester; Tu., Th.*, 10 *and* 11. (Given 1911–12). MISS JOHNSON.

17a. 12a reviewed. One classic comedy. One modern comedy. Romeo and Juliet. Hamlet. Prerequisite as in 16a. *First semester; Tu., Th.*, 10 *and* 11. (Omitted 1911–12). MISS JOHNSON.

17b. Browning. Pillars of Society. Tennyson. Merchant of Venice. Katherine and Petruchio. *Second semester; Tu., Th.*, 10 *and* 11. (Omitted 1911–12). MISS JOHNSON.

18. Dramatic Seminary. Intended for those who wish to teach English and Expression, or who aspire to platform work. Lectures on platform art. Particular study of impersonation in monologue, scene, and play. Repertoire. Prerequisite, 12a, 16a, and 16b, or permission of instructor. *Throughout the year; M.*, 3:30 *to* 5:30. MISS JOHNSON.

ROMANCE LANGUAGES

PROFESSORS OWEN, SMITH (CHAIRMAN); ASSOCIATE PROFESSOR GIESE; ASSISTANT PROFESSORS CERF, COOL, GAY, REED, SCHLATTER, ZDANOWICZ; MR. CATTELL, MR. DONDO, MR. GALLAND, MR. HERRICK, DR. MICHELL, MR. MILLER; MR. COUSINS, MR. ERNST, MR. HILL, MR. WERNLI, MR. DE VRIES.

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

Courses 10–17 are for students who have had one year of college French, or two years of high school French. Students who have had more than two years of high school French should consult with the department before entering any French course.

Courses in Comparative Literature require no knowledge of foreign language and are not accepted in fulfillment of language requirements.

All courses above nineteen require at least French 10, or an equivalent course in second year French, as prerequisite. Students entering these courses with the minimum prerequisite are advised to begin, if possible, with 21 or 23. If only two hours can be taken, the most suitable courses for such students are 120, 128, and 139. These are also suitable to take in addition to 21 or 23 to give five credits. Other suitable supplementary courses of a special nature are 124, 127, and 133.

Students with the minimum prerequisite should consult the instructor before entering 122, 131, 132, 136, 137, or 138. These are intended primarily for students who have already taken one course above French nineteen.

Graduates and other advanced students who take 21, or 23 may be required to do additional work to receive full credit.

French 134 is open only to seniors and graduates.

All courses above 139 are for graduates, but some may be taken by unusually well prepared undergraduates.

Courses in all the Romance languages marked C and E are intended for Commerce and Engineering students. Similar courses are nearly always given for the students of the College of Letters and Science, who will not be allowed to take Commerce and Engineering courses except by special permission of the chairman of the department.

Major and Minor

Students are allowed to major in French, Spanish, or Italian, or in a combination of these. In French the student must take at least twenty-four hours in advance of first year French. Those desiring to major in Spanish or Italian or in Romance Languages should consult the department for complete details. In combining these three languages the first and second year courses of more than one of the three will not count toward the hours necessary to make up the major, nor are they counted in the maximum forty hours that can be taken in one subject. Students preparing to teach French as a major are required to take courses 135, 138, one composition, one conversation, and at least one three-credit course in French literature.

Students who are preparing to teach some other subject as a major, with French as a minor, must take at least one year-course in French literature and one course in composition or conversation.

FRENCH

I. Language

For Undergraduates

1. Elementary French. Grammar, reading, composition, oral exercises. *Four credits; thirteen sections.* Mr. CATTELL, Mr. CERF, Mr. DONDO, Mr. GALLAND, Mr. HERRICK, Mr. MICHELL, Mr. REED, Mr. SCHLATTER, Mr. ZDANOWICZ, Mr. COUSINS, Mr. ERNST, Mr. HILL, Mr. WERNLI.

2. Elementary French. Special course for students who have had at least four years of Latin or German. *Tu., W., Th., F.*, 8. MISS GAY.
3. Elementary French. Same as French 1, but five times a week instead of four. Intended for those students who desire a five hour language course. *M., Tu., W., Th., F.*, 8 *and* 1:30. Mr. CERF, Mr. MICHELL.
4. Advanced Elementary French. Covers the second half of French 1 and the first half of second year French. Open to students who have commenced French in the summer session or who enter with one year of high school, or one semester of college French. *Three sections; four credits.* Mr. DONDO, Mr. GALLAND, Mr. SCHLATTER.

5e. Elementary French for Engineers. For the most part the same as course 1, except that more attention will be paid to reading. *Three sections; four credits.* Mr. GALLAND, Mr. HERRICK.

6c. Elementary French for students in Commerce. Reading, composition, oral exercises. *Tu., W., Th., F.*, 9. Mr. CATTELL.

7. Elementary French. Begins the second semester, and covers the work done in the first semester of course 1. Students may continue their work in the summer session of the following year with course 4. *Second semester; three*

sections; four credits. Mr. COUSINS, Mr. HERRICK, Mr. GALLAND.

10. Second year French. Modern prose narrative and comedies. Drill in pronunciation written and oral work, review of grammar. Prerequisite, one year of college or two years of high school French. *Seven sections; three credits.* Mr. CATTELL, Mr. DONDO, MISS GAY, Mr. MICHELL, Mr. SMITH, Mr. ZDANOWICZ.

To secure four or five credits French 10 should be combined with 13, 14, or 15.

11. Second-year French. Reading and grammar. *Le Roman d'un Jeune Homme Pauvre, La Petite Fadette,* two plays *of Molière. M., W., F.,* 11. Mr. OWEN.

13. Rapid Sight-reading. The work will be largely confined to the class room. Except by special permission it can be taken only in connection with some other French course. *Tu., Th.,* 9; *one credit.* Mr. SCHLATTER.

14. French Composition. Intended to supplement the second year courses given above, and, except by special permission of the instructor, can be taken only by students of some other French course. *S.,* 8, Mr. WERNLI; *Th.,* 10. Mr. COUSINS.

15. French Conversation. Except by special permission, it can be taken only in connection with some other French course. *Two hours per week; five sections; one credit.* Mr. CERF, Mr. ERNST, Mr. HERRICK, Mr. WERNLI.

16. Conversation and reading. Based on phases of modern French life and current thought. Open to students who have had work in elementary conversation. *M., W., F.,* 8; *two credits.* Mr. HERRICK.

17c. Second-year French for students in Commerce. A practical course in conversation, composition, reading. *Tu., Th., S.,* 10. Mr. CATTELL.

29c. Third-year French. For students in Commerce. Conversation, composition, reading, commercial correspondence. *Tu., Th.,* 8. Mr. CATTELL.

30c. Four-year French. For students in Commerce. Conversation, reading, commercial correspondence. *Two credits.* Mr. CATTELL.

For Undergraduates and Graduates

120. Advanced Reading. Continuation of course 11. *Cinq-Mars, Ursule Mirouet. M., W.*, 1:30. Mr. OWEN.

124. Advanced Composition. Conversation and reading. Conducted in French. Based on 19th century prose authors representative of modern French thought and style. *Tu., Th.*, 10. MISS GAY.

127. Advanced Conversation. Open to students who have had two or more years of French. Of suitable grade to follow French 15. Can be taken only in connection with some other French course unless by consent of the instructor. *Tu., Th.*, 9; *one credit.* Mr. DONDO.

133. Advanced Reading. Of suitable grade to follow course 20. Hugo, *Les Travailleurs de la Mer. M., W.*, 2:30. Mr. OWEN.

135. The Teaching of French. Aims and methods, lectures and reports. (*First semester; one credit.*) A review of work in first and second year French. Practice teaching and visiting classes. (*Second semester; one credit*). Mr. SMITH.

138. French Pronunciation. The elements of phonetics in their application to the pronunciation of French. Passy-Rambeau, *Chrestomathie Phonétique. Second semester; Tu.*, 9. Mr. CERF.

For Graduates

240. Old French. An introductory course. Phonology and grammar. Lectures and reading. *Two credits.* Mr. SCHLATTER.

244. Old Provençal. Language and literature of the troubadours. Grandgent, *Old Provençal;* Appel, *Chrestomathie;* Restori, *Letteratura Provenzale.* (Omitted 1912–13). Mr. REED.

245. Principles of Language. Explanation of linguistic thought, its special nature, and the less obvious verbal means of indicating both the elements of thought and their mode of combination. Mr. OWEN.

249. Chrestien de Troyes. Open to students who have had work in Old French. *Second semester; two credits.* Miss GAY.

II. Literature

For Undergraduates

21. Modern French Literature. An elementary survey of the literary movements of the nineteenth century, with a preliminary study of the seventeenth and eighteenth centuries. *M.*, *W.*, *F.*, 9. Mr. MICHELL. *M.*, *W.*, *F.*, 11. Mr. CATTELL.

23. French Literature. The modern drama, beginning with the Romantic movement. Lectures and assigned reading. Authors read in class are Hugo, De Musset, Scribe, Augier, Dumas, Rostand, Hervieu. *M.*, *W.*, *F.*, 10. Mr. SMITH.

See Comparative Literature A. Masterpieces of Romance Literature in English translations. *Tu.*, *Th.*, 11. Mr. CERF.

For Undergraduates and Graduates

122. Romantic Poets. The work of Hugo will form the center of the course. Lectures and collateral readings. (Omitted in 1912–13). *Tu.*, *Th.*, 8. Mr. GEISE.

126. French Lyric Poetry and Versification. From Villon to recent times. Reading from Villon, Ronsard, Chénier, Lamartine, Hugo, Verlaine, Leconte de Lisle. Conducted in French. *Second semester; Tu.*, *Th.*, 2:30. (Omitted in 1912–13.) Mr. DONDO.

128. Romantic School. Lectures and reading. Conducted in French. *Tu.*, *Th.*, 2:30. Mr. DONDO.

131. General Survey of French Literature. An outline course treating the main currents of the literature and works of prime importance. Class reading, lectures, reports. *M.*, *W.*, *F.*, 8. Mr. REED.

132. French Literature. A study of literary movements in the eighteenth century. Lectures and reading from representative authors. (Omitted 1912–13.) Mr. MICHELL.

134. Thesis Course. George Sand, Balzac, and Daudet. Open only to seniors and graduates. May be modified to meet needs of the class. *Two credits.* Miss GAY.

136. French Literature. The French novel. Lectures on the development of the novel in Romance countries. Reading of

representative French novels of the seventeenth, eighteenth, and nineteenth centuries. *Second semester; Tu., Th., S.*, 10. Mr. CERF.

137. Molière. All of Molière's plays will be studied. Several representative comedies will be read in class. Lectures and assigned reading on Molière and the theater of the time. *First semetser; Tu., Th., S.*, 10. Mr. ZDANOWICZ.

139. French Comedy. The origin and development of French comedy to the middle of the nineteenth century. Lectures and reading of representative plays. (Omitted 1912–13.) *Tu., Th.*, 1:30. Mr. ZDANOWICZ.

For Graduates

242. Old French Literature. Old French epic poetry. The history of the *Chanson de Geste* will be traced and several representative poems read during the year. Theories of G. Paris, Rajna and Bédier on the origin of the French epic. *M.*, 2:30 *to* 4:30. Mr. SMITH.

243. Seminary in Old French. First semester, a study of the French versions of the *Sept Sages de Rome* with related versions in other languages. Second semester, *Tristan et Isolt* and its various versions in other literatures. *M.*, 2:30. (Omitted 1912–13.) Mr. SMITH.

247. Literature of the Middle French Period. General survey of the 14th, 15th, and 16th centuries; particular attention will be devoted to Froissart, Commines, Villon, Rabelais, Montaigne. (Omitted 1912–13.) Miss GAY.

248. Medieval Literature. Its beginnings in Europe with special reference to the influence of the French and Provençal literatures. Lectures and assigned reading. Mr. REED.

252. Medieval French Drama. The liturgical drama, miracle and mystery plays. The development of the French drama from the Latin liturgical drama and its relation to the early religious plays of other countries. *Second semester.* (Omitted 1912–13.) Mr. SMITH.

253. Seminar in French Literature. Classicism. (Omitted 1912–13.) Mr. GIESE.

254. Seminar in French Literature. Romanticism. *First semester; two credits.* Mr. CERF.

See Comparative Literature 16. Modern Classical Satire in

Italian, French, and English. *Second semester; F.*, 4 to 6. Mr. DODGE.

See Comparative Literature 17. French and Italian Influences in English poetry in the second half of the sixteenth century. *Two hours a week.* Mr. DODGE.

See Comparative Literature 218. The Renaissance in Romance Countries. First semester: Italian; second semester: French. *Two credits.* Mr. CERF.

ITALIAN

I. Language

For Undergraduates and Graduates

101. Elementary Italian. Grammar, pronunciation, composition. Reading from modern writers. *M., W., F.*, 11. Mr. SCHLATTER.

II. Literature

For Undergraduates and Graduates

102. Italian Literature. A continuation of Italian 1, combined with a rapid survey of the main works in Italian literature. Alternated with Italian 60. *Three credits.* Mr. SCHLATTER.

160. Dante. An introduction to the life and times of Dante, with special study of the *Divine Comedy.* (Omitted in 1912–13.) *Three credits.* Mr. SCHLATTER.

See Comparative Literature 2. Renaissance Epic. *Second semester; Tu., Th.*, 9. Mr. DODGE.

SPANISH

I. Language

For Undergraduates

1. Elementary Spanish. Grammar and reading. Composition and oral exercises. For students of the College of Letters and Science. *Two sections; three credits.* Mr. COOL, Mr. MILLER.

2EC. Elementary Spanish for students in Commerce and Engineering. Grammar, easy prose. Practice in speaking and writing Spanish. *Three sections; four credits.* Mr. Cool, Mr. Miller.

6C. Second Year Commerce. Conversation, composition, reading. Students in the College of Letters and Science who have had one year of Spanish must take course 3 or 4 unless allowed by special permission to enter this course. *Tu., Th., S.*, 10. Mr. Miller.

7C. Third Year Commerce. Conversation, commercial correspondence, and reading. Special attention to the vocabulary of commerce. *Tu., Th.*, 8. Mr. Cool.

8C. Fourth Year Commerce. Conversation, commercial correspondence, and reading. *Two credits.* Mr. Cool.

9. Composition and Conversation. Supplementary to 103, 104, 6C, 7C, and 8C, and can be taken only in connection with some other Spanish course, unless by consent of the instructor. *One credit; Tu., Th.*, 11. Mr. Cool.

II. Literature

For Undergraduates and Graduates

103. Nineteenth Century Spanish. The modern novel, drama, and poetry. Open to students who have had elementary Spanish. *Tu., Th., S.*, 9. Mr. Cool.

104. Spanish Literature. Cervantes (*Don Quijote*), Calderón (*Mágico Prodigioso*). Open to students who have had elementary Spanish. *Tu., Th.*, 8. Mr. Reed.

For Graduates

270. Spanish Drama from the *Reyes Magos* to *La Vida es Sueño. Two credits.* Mr. Reed.

PORTUGUESE

271. Portuguese. Language and literature. Class reading (*Os Lusiades*), with lectures on the development of the language and the history of the literature. *Two credits.* (Omitted 1912–13.) Mr. Reed.

VULGAR LATIN

272. An introductory course treating of principal divergencies of the *Sermo Plebius* from classical Latin. (Omitted 1912–13.) Mr. REED.

273. Romance Philology. A study of the differentiation of the *Lingua Vulgaris* into the dialects known as Spanish, Portuguese, French, Provençal, and Italian. Mr. REED.

SCANDINAVIAN LANGUAGES

PROFESSOR OLSON (Chairman), DR. HOLLANDER.

This department offers instruction in all of the Scandinavian languages (Norwegian, Danish, Swedish, and Old Norse). From one year's instruction in Modern Norse the student is expected to be able to read both Norwegian and Danish authors. The principal courses are devoted mainly to Norwegian authors, but additional instruction in Danish and Swedish literature is offered to students desiring to pursue these branches beyond the limits of the prescribed courses.

Courses 2a and 2b, taken together, or courses 3 and 4, may be taken as part of the required language work. (See Index under Required Studies.)

For Undergraduates

1. Modern Norse. Olson's *Norwegian Grammar and Reader*, together with easy selections in prose and poetry. For beginners. *Throughout the year; three credits.*

2a. Modern Norse. Selections from the *Reader*, Björnson's *Synnöve Solbakken* (Flom's edition), and his shorter peasant stories. *Throughout the year; three credits.*

2b. Written and Oral Translation into Norse. The reading of prose selections as a basis for work in composition and conversation. *Throughout the year; one credit.*

3. Kielland's *Skipper Worse* and Gundersen's *Norske Digte*. Two dramas by Holberg and three by Oehlenschlaeger are assigned for outside reading. *Throughout the year; two credits.*

4. Ibsen's *Brand* and *Peer Gynt*. As these dramas are of great importance in Scandinavian literature, they are read critically and studied from a linguistic, literary, and ethical point of view. *Throughout the year; two credits.*

5. History of Dano-Norwegian Literature. Hofgaard's *Norsk Litteraturhistorie* and Prestgard's *Norske Kvad*, with lectures, and papers presented by students, on the authors under discussion. *Throughout the year; two credits.*

6. Swedish Literature. Tegner's *Frithiofs Saga*. Runeberg's *Fänrik Stals Sägner*, Vinsnes and Aanrud's *Svenske Digtere*, and Warburg's *Svensk Litteraturhistoria*. Selma Lagerlöf's *Gösta Berlings Saga* and *Jerusalem* are assigned for outside reading. *Throughout the year; two credits.*

7. Lectures on Norse Mythology and the Volsunga Saga. These subjects are also considered with reference to their relation to the *Nibelungenlied* and especially to Wagner's *Ring des Nibelungen*. *First semester; Tu.*, 1:30.

7a. Lectures on early Scandinavian Literature and Antiquities, with illustrative readings in translation. Special attention is given to the Saga literature. *First semester; Th.*, 1:30.

Courses 7 and 7a are given in alternate years; the former will be given in 1912.

7b. Lectures on modern Scandinavian authors and literary epochs, with illustrative readings in translation. A study of Ibsen's life and works is the main feature of the course. *Second semester; Tu.*, 1:30.

7c. An intensive study of Ibsen's *Brand* and *Peer Gynt* in English. *Second semester; Th.*, 1:30.

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

For Undergraduates and Graduates

108. Old Norse. Introductory course. Norreen's *Abriss der Altisländischen Grammatik* and Holthausen's *Altisländisches Lesebuch*. *Throughout the year; two credits.* Dr. HOLLANDER.

102c. Modern Norse. Olson's *Grammar and Reader*, Björnson's *Synnöve Solbakken* and the shorter peasant stories, Ibsen's *Samfundets Støtter*, *Et Dukkehjem*, *Kongsemnerne*, *Brand*, and *Peer Gynt*. A rapid reading course for graduates who have a good knowledge of other modern languages. *Throughout the year; two credits.*

109. Modern Norwegian Literature. The critical reading of representative dramas and novels. The principal authors studied are Ibsen, Björnson, Lie, and Kielland. *Throughout the year; two credits.*

110. Studies in Norwegian Poetry. Selections from Wergeland, Welhaven, Munch, Moe, Björnson, and Ibsen, to illustrate the different epochs in the development of modern Norwegian literature. *First semester; one credit.*

111. Norwegian Dialect Writers. The principal authors considered are Aasen, Vinje, Garborg, and Sivle. Some attention is also given to the language reform movement. *Second semester; one credit.*

112. Scandinavian Literature. A general survey, with critical study of special periods. *Throughout the year; two credits.*

ZOOLOGY

Professor Guyer (Chairman); Associate Professor Marshall; Assistant Professors Allen, Holmes, Wagner; Mr. Juday, Mr. Wodsedalek, Mr. Fasten, Miss Smith, Mr. Jones, Mr. Glascock.

Students who make zoology their major study are expected to obtain a minimum of thirty credits (exclusive of thesis) selected as follows:

a. Zoology 1a and 1b, or biology 1; zoology 102a, 104a, 105, and 109b. One elementary course in botany is required of those who have not taken biology 1.

b. Additional courses in zoology, or in special cases by permission of the chairman of the department, courses in allied departments.

For the advanced courses training in chemistry and ability to read French and German is very desirable.

For Undergraduates

1a. General Zoology. The general characteristics and relationships of the main groups of animals together with life-histories of representative forms. Courses 1a and 1b combined may be substituted for biology 1 in satisfying the natural science requirement. *First semester. Lectures, M., W., F.,* 9. *Lab. sect. I, M., W.,* 1:30 *to* 4:30. *sect.* II, *Tu., Th.,* 1:30 *to* 4:30 *or* 9 *to* 12. *Five credits.* Mr. GUYER, Mr. ALLEN and assistants.

1b. Animal Biology. The second semester of biology 1 and of zoology 1a. Lectures and discussions dealing in an elementary way with the general problems of animal structures, activities and adaptations, sex, development, heredity, and evolution. *Lectures M., W.,* 2:30. *Four two-hour laboratory periods per week; five credits.* Mr. GUYER, Mr. WAGNER, Mr. ALLEN and assistants.

3. Elementary Zoology. For agricultural students only. *Second semester; three credits.*

For Undergraduates and Graduates

102a. Invertebrate Zoology. A discussion of the structure, development, classification, instincts and life-histories of invertebrate animals. *First semester; lectures M., W.,* 10; *three laboratory periods; five credits.* Mr. HOLMES.

102b. Protozoology. A study of the structure, life history, and pathogenic relations of the Protozoa. *Second semester; two credits; hours to be arranged.* Mr. HOLMES.

104a. Comparative Anatomy of Vertebrates. Dissection and study of selected types of vertebrates together with lectures and discussions on general vertebrate anatomy with special reference to the evolution of the various organ systems. *First semester; five credits. Tu., Th.,* 9; *Tu., Th., S., Mornings.* Mr. WAGNER.

104b. Vertebrate Zoology. A study of the structure, physiology, habits, classification, and distribution of vertebrates. Supplements course 104a. *Second semester; lecture, laboratory, and field work; hours to be arranged; three credits.* Mr. WAGNER.

105. Embryology of Vertebrates. Lectures upon general problems. Laboratory work upon the development of the frog. *First half of second semester; Tu., Th., S.,* 8 *to* 10; *one and one-half credits (to be followed by Anatomy 15 during the remainder of the semester; one and one-half credits).* Mr. ALLEN.

125. Embryology of the Turtle and Chick. Studied as examples of reptilian and avian development. Attention will be given to the technique of fixing, sectioning and staining embryological material. Course 105 is a prerequisite. *First semester; three credits; Tu., Th.,* 1:30 *to* 4:30. Mr. ALLEN.

108. Micro-Technique and Zoological Preparations. The first part of the course consists of drill in the processes incident to modern microscopy. Later the student will choose some particular line of methods (*e. g.* in entomology, histology and embryology, cytology, experimental work, anatomical preparation, collection and preservation of specimens) under a corresponding specialist in the department. *First semester; two credits; W., F.,* 1:30 *to* 4:30. Mr. GUYER and others.

121. Ornithology. A study of the main facts relating to birds. *Second semester; one lecture and one laboratory or field period a week; hours to be arranged; two credits. Tu.,* 4:30. Mr. WAGNER.

109a. Entomology. Morphology, anatomy, and embryology of insects. Lectures and laboratory. *First semester; three credits; hours to be arranged.* Mr. MARSHALL.

109b. Entomology. Classification and life histories of insects and the more general problems of insect life. Lectures, laboratory, and field work. *Second semester; three credits. Lecture, W.,* 10. Mr. MARSHALL.

111. Elementary Entomology. On the structure, life history, and habits of insects, and their relation to man and other animals. Open to all students. *First semester; lectures M., W.,* 11; *two credits.* Mr. MARSHALL.

112. Entomology. Life-history and structure of economic insects, giving the life-history, structure and classification of those insects which are of economic importance.

First semester; three credits. (Omitted 1912–13.) Mr. MARSHALL.

113. Forest Entomology. The principal insects injurious to forest and shade trees. *Second semester; two lectures a week; time to be arranged.* Mr. MARSHALL.

123. Entomology. Advanced work for students who desire to continue some special line of work. *Throughout the year.* Mr. MARSHALL.

106. Heredity. An exposition and discussion of the main facts and theories of heredity and its mechanism; applications to man. *First semester; Tu., Th.*, 3:30, *two credits.* Mr. GUYER.

107. Evolution Problems. A critical discussion of the theory of organic evolution, and the general development of evolutionary speculation since Darwin. *Second semester; Tu., Th.*, 3:30 *two credits.* Mr. HOLMES.

114. Anatomy and Physiology of the Cell; Non-Developmental Phenomena. Particular attention is given to the physics and chemistry of the cell, the colloidal nature of protoplasm, the effects of electrolytes on living substance, and the phenomena of metabolism, stimulation and transformation of energy. *First semester; Tu., Th.*, 11; *two credits.* Mr. GUYER.

115. Anatomy and Physiology of the Cell; the Germ-Cell. A study of the cell with special reference to the problems of development and inheritance. *Second semester; Tu., Th.*, 11; *two credits.* Mr. GUYER.

116. Cytology, Laboratory. A laboratory course intended to serve as an introduction to cytological technique and to the general field of cellular biology. *Tu., Th.*, 1:30 *to* 4:30; *three credits.* Mr. GUYER.

117. Bionomics. The relation of animals to their environment. This course should be preceded by courses 102a, b and 104a, b. *First semester; two lectures a week at hours to be arranged. Laboratory and field work once a week; three credits.* Mr. WAGNER.

119. Animal Parasites. Designed to meet the needs of medical and agricultural students and those interested in problems of public health. *Second semester; Tu., Th.*, 1:30 *to* 4:30; *three credits.* Mr. ALLEN.

118. 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. *Two lectures a week during the first semester; two credits.* Mr. HOLMES.

122. Animal Behavior. A discussion of the analysis and evaluation of animal behavior. *Lectures, Tu., Th.,* 2:30; *two credits.* Mr. HOLMES.

120. The Teaching of Zoology. A consideration of the aims, methods and subject matter of zoological instruction in the schools. The work will include reviews and criticisms of current textbooks of zoology and biology, and discussions on planning, equipping and conducting a laboratory. *One lecture or conference a week during the first semester; one credit.* Mr. GUYER.

124a. Limnology. A course of lectures on the geology, physics, chemistry, and biology of lakes. The various methods used in making limnological investigations will be presented. Especial attention will be given to the results that have been obtained in studies on Wisconsin lakes. *Two lectures per week at hours to be arranged; first semester; two credits.* Mr. JUDAY.

124b. A continuation of course 124a. A study of plankton organisms, especially their identification, variation, distribution, and economic importance. The field work will consist of practice in making physical, chemical, and biological observations on lakes. *Second semester; lectures, laboratory and field work; two credits.* Mr. JUDAY.

For Graduates

228. Research. Work under different members of the staff. Problems will be assigned, and students prepared for independent investigation will be given all the opportunities available for carrying on their work.

THE COURSE IN CHEMISTRY

LOUIS KAHLENBERG, Director, Professor of Chemistry.

THE PURPOSE OF THE COURSE

The primary purpose of this course is to offer facilities for the training of those who desire to become chemists. The demand for competent chemists has very greatly increased in recent years. Not only has there been a greater call for able teachers of chemistry for high schools, colleges and universities, but an unusual demand has arisen for chemists of ability for agricultural experiment stations, hygienic laboratories, health and sanitary departments of municipalities, food testing laboratories, and industries engaged in the preparation of foods and other articles of consumption, textile and other fabrics, metallurgical products, and building materials. The cause for this demand is readily discerned. The growing realization that the best way to combat disease is to live under hygienic conditions and use wholesome food, proper clothing, and shelter has made physiological chemists, food chemists, and sanitary chemists indispensable. The fact that careful study of the soil in its relation to the crops it is to produce has greatly increased both the quantity and quality of the yield of the land, and that a proper study of the breeding and feeding of animals raised on the farm has added very materially to the wealth and well-being of the nation, has made the soil and agricultural chemists necessary. And again, since the exploitation of the more readily accessible resources of our country, such as its wealth in timber and minerals, for example, is fairly well accomplished, attention is naturally being directed more and more toward manufacturing articles from materials whose value is not obvious at sight, materials that have indeed often been discarded as worthless. It is in this work that the services of the analytical and industrial chemist are an absolute necessity. Naturally these demands for chemists have also resulted in an increased call for teachers of chemistry. Nor is the need of chemists of temporary character, for obviously activity in the various lines mentioned will grow of necessity and increase the demand for men and women skilled in chemistry. Indeed, in many of our

industries it is already realized that it is necessary to have the service of a chemist continually in order to properly inspect the raw materials bought, to control and improve the process of manufacture so as to avoid waste of power and material, and to test the grade of the finished article.

It is not the purpose of this course to prepare chemists for each individual industry; for that would be well-nigh impossible, since it requires special practical experience to become proficient in any particular line of work. The aim is rather to give the student a training in the fundamental principles of chemistry and the cognate sciences, which, of course, also necessitates a proper grounding in mathematics, French, and German. With this preparation a chemist will readily be able to adapt himself to any special industry with which he may later on be connected.

Special attention is called to the fact that chemistry offers opportunities for women as well as for men. Not only in teaching chemistry in high schools and colleges, but also in lines like analytical, physiological, sanitary and food chemistry, there is a growing field of work for women.

Since the course in chemistry has been established there has been a steady increase in the number of students who are devoting themselves to the study of chemistry. Nevertheless the University has thus far been utterly unable to supply a sufficient number of chemists to colleges, universities, experiment stations, and various industrial firms that have applied for persons of thorough chemical training.

REQUIREMENTS FOR ADMISSION

Students will be admitted to this course on compliance with the conditions imposed for entrance to the College of Letters and Science. See Index under Admission.

Persons twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to enter as adult special students upon giving satisfactory evidence that they are prepared to profit by the course desired.

Students who have satisfied all the requirements for entrance, but do not wish to be candidates for a degree, will be admitted to any of the studies of this course for which they are properly prepared.

PLAN OF THE COURSE OF STUDY

Six courses of study have been outlined, namely, a general course, a course for industrial chemist, a course for agricultural chemist, a course for soil chemist, a course for physiological chemist, and a course for food chemist. The latter course is also well adapted for those fitting themselves for sanitary work in hygienic laboratories. The general course is intended for those desiring to become analytical chemists, and those that prefer a course relatively free from biological studies and work which is strictly applied in character. The first two courses are almost free from biological work, containing only a short course in bacteriology, which it is extremely desirable that every chemist should have. The other four courses are primarily distinguished from the first two in that they contain a considerable amount of biology and consequently present less opportunity for further work in other lines.

The work for the first year is the same for all of the courses. It is, therefore, detailed in connection with the general course only. It will be observed that differentiation in the various lines begins in the second year of the general course, the main difference being, as already stated, that biology is introduced in the last four courses.

In all the courses, general inorganic, analytical, organic, and physical chemistry are required. Physics, mathematics consisting of trigonometry and analytical geometry, and a short course in mechanical drawing are also required of all. The English is the regular course required of all freshmen in the College of Letters and Science. Both German and French are required; these languages must be pursued in not less than one-year courses. A student coming prepared in but one of these languages would naturally continue work in that language during the freshman year. The equivalent of at least course 2S in German and course 1 in French is required for graduation. The special courses required in connection with each of the six courses are selected because they are calculated to fit the student for the definite end in view. Each course contains a certain number of hours for free electives, and while freedom of election is not restricted, the student is strongly urged to choose his electives from subjects outside of the natural sciences.

In each of the courses, 140 unit-hours are required for graduation. As the work outlined is necessarily difficult in character, students would often find it advantageous to absolve a part of the required studies during one or more summer sessions.

COURSES OF STUDY

General Course

First year: *First semester.* General Chemistry, 5; Mathematics, 3; German or French, 4; English, 3. *Second semester.* Mechanical Drawing, 3.

Second year: *First semester.* Quantitative Analysis, 6; German or French, 4; Physics, 5; Calculus or Mineralogy, 3. *Second semester.* Calculus or Bacteriology, 3.

Third year: Organic Chemistry, 5; Physical Chemistry, 5; German or French, 4; Electives, 4.

Those that took Calculus in the second year must take Mineralogy 3 in the first semester and Bacteriology 3 in the second semester, which leaves for them but one hour as elective for each semester.

Fourth year: *First semester.* Chemistry Thesis, 2; Water and Gas Analysis, 2; Proximate Organic Analysis, 3; History of Chemistry, 2; Electives, 3. *Second semester.* Chemistry Thesis, 2; Chemistry (elective), 5; Fire Assay, 2; Electives, 9.

Course for Industrial Chemist

The first and second years are the same as in the general course.

Third year: Organic Chemistry, 5; Physical Chemistry, 5; German or French, 4; Technical Fuel and Gas Analysis, 2; Electives, 2.

Fourth year: *First semester.* Chemistry Thesis, 2; Water Analysis, 1; Proximate Organic Analysis, 3; Industrial Chemistry, 3; History of Chemistry, 2; Electives, 7. *Second semester.* Chemistry Thesis, 2; Chemical Machinery, 2; Fire Assay, 2; Bacteriology, 3; Chemical Manufactures, 5; Electives, 4.

Course for Agricultural Chemist

Second year: Quantitative Analysis, 4; German or French, 4; Biology, 5; Physics, 5.

Third year: *First semester.* German or French, 4; Organic

Chemistry, 5; Bacteriology, 3; Electives, 6. *Second semester.* German or French, 4; Organic Chemistry, 5; Agricultural Chemistry, 5; Agricultural Bacteriology, 3 or 5, or Electives, 4.

Fourth year: *First semester.* Physical Chemistry, 5; Agricultural Chemistry, 5; Agricultural Chemistry Thesis, 2; Electives, 6. *Second semester.* Physical Chemistry, 5; Soils, 5; Agricultural Chemistry Thesis, 2; Dairy Chemistry, 3; Electives, 3.

Course for Soil Chemist

Second year: *First semester.* Quantitative Analysis, 6; German or French, 4; Physics, 5; Bacteriology, 3. *Second semester.* Quantitative Analysis, 5; Soils, 5; Physics, 5; Agricultural Bacteriology, 3.

Third year: *First semester.* German or French, 4; Organic Chemistry, 5; Soil Chemistry, 4; Systematic Botany, 2; Electives, 3. *Second semester.* German or French, 4; Organic Chemistry, 5; Soil Chemistry, 4; Mineralogy, 3; Electives, 2.

Fourth year: *First semester.* Soils Thesis, 2; Physical Chemistry, 5; History of Chemistry, 2; Geology, 5; Electives, 4. *Second semester.* Soils Thesis, 2; Physical Chemistry, 5; Soils Physics, 2; Agricultural Chemistry, 5; Electives, 4.

Course for Physiological Chemist

Second year: Same as for agricultural chemist.

Third year. *First semester.* German or French, 4; Organic Chemistry, 6; Physiology, 3; Physical Chemistry, 5. *Second semester.* German or French, 4; Organic Chemistry, 5; Physiological Chemistry, 4; Physical Chemistry, 5.

Fourth year: *First semester.* Bacteriology, 5; Advanced Physiological Chemistry, 4; Toxicology, 3; Physiological Chemistry Thesis, 2; Electives, 4. *Second semester.* Bacteriology, 5; Seminary Physiological Chemistry, 1; Histology of Foods, 2; Chemistry of Foods, 5; Physiological Chemistry Thesis, 2; Electives, 3.

Course for Sanitary Chemist or Food Chemist

Second year: Same as for agricultural chemist, except that in the second semester Biology 5 is replaced by Bacteriology 3, and Biology of Water Supplies, 3.

Third year: *First semester.* German or French, 4; Organic Chemistry, 6; Vegetable Histology, 3; Physical Chemistry, 5.

Second semester. German or French, 4; Organic Chemistry, 6; Microscopic Examination of Foods and Drugs, 3; Food Chemistry, 5.

Fourth year: *First semester.* Thesis in Food or Sanitary Chemistry, 2; Water and Gas Analysis, 2; Proximate Organic Analysis, 3; Toxicology, 3; History of Chemistry, 2; Electives, 6. *Second semester.* Thesis in Food or Sanitary Chemistry, 2; Physical Chemistry, 5; Physiological Chemistry, 4; Electives, 7.

DEPARTMENTS OF INSTRUCTION

For detailed information regarding any of the following courses see Chemistry, College of Letters and Science; also College of Agriculture and College of Engineering.

Chemistry

1. General Chemistry, including Qualitative Analysis.
4. Thesis.
107. History of Chemistry.
11. Quantitative Analysis.
15. Quantitative Analysis, for students in agricultural, sanitary, food, and physiological chemistry.
113. Water Analysis.
114. Gas Analysis.
119. Proximate Organic Analysis.
120. Organic Chemistry.
130. Physical Chemistry.
146. Chemistry of Foods, and their Adulterations.

Agricultural Chemistry

1. Agricultural Chemistry.
2. Agricultural Analysis.
4. Dairy Chemistry.
5. Animal Chemistry.
19. Thesis in Agricultural Chemistry.

Physiological Chemistry

4. Physiological Chemistry.
10. Advanced Physiological Chemistry.
11. Toxicology.
12. Seminary in Physiological Chemistry.

Assaying

20. Assaying.

Chemical Technology

11. Chemical Machinery and Appliances.
12. Technical Fuel, Gas, and Oil Analysis.
14. Chemical Manufacture.
15. Industrial Chemistry.

Bacteriology

For detailed information see Bacteriology, College of Letters and Science.

1. General Bacteriology.
2. Medical Bacteriology.
104. Advanced Work in Bacteriology.
1. Agricultural Bacteriology.

Botany

For detailed information see Botany, College of Letters and Science.

5. Vegetable Histology.
20. Systematic Botany.
111. Microscopic Examination of Foods and Drugs.

Biology

For detailed information see Biology, College of Letters and Science.

1. General Biology.

English

For detailed information see English, College of Letters and Science.

1. Freshman English.

French

For detailed information see French, College of Letters and Science.

1. Elementary French.
4. Elementary French. For students that have had the equivalent of one year of French in high schools.
10. Second Year French.

Geology

For detailed information see Geology, College of Letters and Science.

1. General Geology.

German

For detailed information see German, College of Letters and Science.

1. Beginners' German.
2S. Second Year German.
3S. Scientific German.

Mathematics

For detailed information see Mathematics, College of Letters and Science.

2. Trigonometry.
3. Analytic Geometry.
5. Calculus.

Mechanical Drawing

For detailed information see Mechanical Drawing, College of Engineering.

1. Elements of Drawing.

Physics

For detailed information see Physics, College of Letters and Science.

1. General Lectures and Introductory Laboratory Practice.

Physiology

For detailed information see Physiology, College of Letters and Science.

1. Physiology.

Soils

For detailed information see Soils, College of Agriculture.

1. Introductory Lecture and Laboratory Course.
19. Thesis.
121. Soil Chemistry.
122. Soil Physics.

Toxicology

For detailed information see Toxicology, Medical School.

1. Toxicology, Lectures.
2. Toxicology, laboratory work.

Information concerning additional courses in any of the departments of instruction may be found by referring to the index.

LABORATORIES

A description of the various scientific laboratories of the University may be found by referring to the index.

LIBRARIES

For detailed information concerning general library facilities see Libraries. The various scientific departments have excellent reference libraries in connection with the laboratories. These departmental libraries contain those books and periodicals which are most frequently used. In chemistry and allied sciences the University offers most excellent library facilities.

REQUIREMENT FOR GRADUATION

Students who have successfully completed any of the above courses of study will be admitted to graduation from the University and will receive the degree of Bachelor of Science.

CHARGES AND FEES

For the fees to be paid in this course and in the various scientific laboratories see Index under Fees.

THE COURSE IN COMMERCE

W. A. Scott, Director, Professor of Political Economy.

REQUIREMENTS FOR ADMISSION

Students will be admitted to this course on compliance with the conditions imposed for entrance to the College of Letters and Science. (See Index under Entrance Requirements).

Persons twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to enter as adult special students upon giving satisfactory evidence that they are prepared to profit by the courses desired.

Students who have satisfied all the requirements for entrance, but do not wish to be candidates for the degree, will be admitted to any of the studies of this course for which they are properly prepared.

PLAN OF THE COURSE OF STUDY

The studies of the course may be classified under the following heads:

I. *Foundational Studies.*

To this group belong the studies which are regarded as essential in a liberal education and as a necessary foundation for more specialized subjects to be pursued later on. They comprise courses in natural science, mathematics, English, foreign languages, history, and economics. In natural science, physical geography and the physiography of the United States are required as a basis for economic geography, upon which in turn are built several specialized courses in applied economics. In addition students elect a year's laboratory course in either physics or chemistry. The course in English is the general training course required of all freshmen in the University. Two foreign languages are required, the choices given being French, German, and Spanish. In these courses special attention is devoted to the acquisition of a speaking and writing command of the language for commercial purposes. Economics and history reveal the forces which produce changes in commercial conditions and institutions and the laws of such changes. The courses pre-

scribed along these lines are the economic and social history of England, the elements of political economy, money and banking, and transportation.

II. *Professional Studies.*

The aim of these is to teach students to understand and actually to perform the various processes common to all branches of commerce. They comprise business correspondence, business forms and documents, accounting, auditing, salesmanship, advertising, credits and collections, and the management of factories and other business concerns. In these courses the study of general principles is always accompanied by practice work in a well equipped laboratory.

This class of studies is distributed throughout the course, beginning with the sophomore year. It is so correlated with the other lines of work as to receive re-enforcement from them and to furnish constant tests of their efficiency.

III. *Elective Studies.*

Besides the two classes of studies described above which are with few exceptions prescribed, each student is obliged to elect a group of related courses and a sufficient number of other courses to complete the minimum prescribed for a bachelor's degree. These groups must be arranged at the beginning of the junior year on consultation with the director, and are designed to give the student an opportunity to study intensively a particular field and to learn how to collect and utilize data bearing upon the problems of commerce and industry. His attainments in this direction are tested by a thesis prepared during the senior year. Among the fields available for group work and thesis writing are banking, transportation, accountancy, organization, insurance, corporation finance, foreign commerce, commercial law, and agricultural problems.

Approximately one-half of the student's time in the junior and senior years is available for free election from the great variety of courses offered in the various colleges and departments of the University. The opportunity here presented may be utilized to broaden the student's outlook into fields of knowledge not covered by the requirements of his course or to supplement the studies already pursued.

ARRANGEMENT OF STUDIES

FRESHMAN YEAR

Physical Geography, 3 (first semester); Economic Geography, 3 (second semester); German, French, or Spanish, 4; English, 3; Mathematics, 3; History, 3; Physical Education, 2; Drill, 2.

SOPHOMORE YEAR

Economic Geography, 3 (first semester); Foreign language (continued) 2, or second language, 4; Chemistry or Physics, 5; Elementary Economics, 4 (first semester); Money and Banking, 3, or Transportation, 3 (second semester); Elements of Accounting, 2; Free Electives, 2 or 0; Physical Education, 2; Drill, 2.

JUNIOR YEAR

Foreign language (continued), 2, or second language (if not taken in sophomore year), 4; Theory and Practice of Accounting, 2; Elective Group, 3; Free Electives, 8 to 10.

SENIOR YEAR

Foreign language (continued), 2; Commercial Law, 4; Advanced Accounting and Auditing, 2; or Business Organization and Management, 2; Elective Group and Thesis, 4 or 6; Free Electives, 4 or 6.

DEPARTMENTS OF INSTRUCTION

Algebra

1. Algebra. For detailed information see Mathematics, College of Letters and Science. *First semester; three times a week.*
7. Commercial Algebra. Theory of probabilities, series, and the application of mathematics to insurance and finance.
124. The Mathematics of Life Insurance. *Throughout the year; Tu., Th.*, 3:30.

Business Administration*

a. The Elements of Accounting. Section 1, *M.*, *W.*, 2 *to* 4; Section 2, *Tu.*, *Th.*, 2 *to* 4; Section 3, *M.*, *W.*, 8 *to* 10.

b. The Theory and Practice of Accounting. Prerequisite, course a. First semester's work may be taken without the second. Section 1, *Tu.*, *Th.*, 10 *to* 12; section 2, *Tu.*, *Th.*, 2 *to* 4. *Second semester; lecture, Th.*, 11.

c. Advanced Accounting and Auditing. Prerequisite, courses a and b. *M.*, *W.*, 1:30 *to* 3:30; *F.*, 9.

d. Business Organization and Management. *Tu.*, *Th.*, 9.

Chemistry

For detailed information see Chemistry, College of Letters and Science.

1. General Chemistry. A general introductory course.

English

For detailed information see English, College of Letters and Science.

1. Freshman English. English prose style. Composition.

4. Commercial Correspondence. Prerequisite, course 1. *Second semester, Tu., Th.*, 10.

French

For detailed information see Romance Languages, College of Letters and Science.

6C. Elementary Course.

17C. Conversation, Composition, and Reading, *Tu.*, *Th.*, 11.

29C. Conversation, Commercial Correspondence, and Reading. *Twice a week.*

30C. Conversation, Commercial Correspondence, and Reading.

Geology

For detailed information see Geology, College of Letters and Science.

4a. Physical Geography. *First semester.*

---

* Courses in this field are officially classified with those in political economy and designated as political economy 8a, 8b, 8c, and 8d.

German

For detailed information see German, College of Letters and Science.

2C. Modern Prose.

3C. Reading, Conversation, and Composition.

4C. A continuation of the work of the preceding year.

5C. The work of this course will be of a strictly practical character, being devoted chiefly to oral and written work on topics connected with the actual demands of a commercial career. *Tu., Th.*, 11.

History

For detailed information see History, College of Letters and Science.

4. History of the United States.

4a. To the Presidency of Jackson. *First semester.*

4b. From Jackson to the present time. *Second semester.*

5. English History.

115. Diplomatic History of the United States.

Physics

For detailed information see Physics, College of Letters and Science.

1. General Lectures and Introductory Laboratory Practice.

Political Economy

For detailed information see Political Economy. College of Letters and Science.

1. The Elements of Economics. *Repeated each semester; lectures, Tu., Th.*, 9.

3. The Elements of Public Finance. *First semester.*

5. The Elements of Money and Banking.

4b. Geology.

7. Economic Geography of the United States. *First semester.*

8. See Business Administration.

9. Commercial Law. Open only to juniors and seniors of suitable preparation.

18. Senior Seminaries. For thesis students.

26. Agricultural Economics.

127. Historical and Comparative Agriculture. *First semester.*
130. Elements of Statistics.
31. Economic Statistics.
133. Financial History of the United States. *Second semester.*
134a. The Money Market. *First semester.*
135. Transportation and Communication. *Second semester.*
137a. Corporation Economics. *Second semester.*
137b. Corporation Finance. Prerequisite, course 37a.
138. Insurance Economics. *Second semester.*

Political Science

For detailed information see Political Science, College of Letters and Science.

117. Federal Administration. *Second semester.*
118. International Law. *Throughout the year.*
119. Contemporary International Politics.
121. Colonial Politics. *First semester.*
123. The Consular Service. *First semester.*
131. Latin-American Political Institution. *First semester.*

Spanish

For detailed information see Romance languages, College of Letters and Science.

2EC. Elementary.
6C. Conversation, Composition, and Reading.
7C. Conversation, Commercial Correspondence, and Reading.
8C. Conversation, Commercial Correspondence, and Reading
9. Composition and Conversation.

COMMERCIAL COURSE FOR ENGINEERS

The College of Engineering offers a five-year course which permits a combination of the studies of the various engineering courses with the essential studies of the Course in Commerce. Students making this combination will take the engineering studies as prescribed, for which see Index under Engineering, and the studies of the Course in Commerce as follows:

FRESHMAN YEAR

Physical Geography and Economic Geography, 3.

SOPHOMORE YEAR

Economic Geography, 3; Elementary Economics (*second semester*) 4.

JUNIOR YEAR

Money and Banking (*first semester*) and Transportation (*second semester*), 3; Elective Group, 3.

SENIOR YEAR

Elective Group, 3; Business Administration, 3.

FIFTH YEAR

Business Administration, 3; Commercial Law, 4.

At the end of the fifth year the appropriate engineering degree will be conferred. Students who so desire may, during the senior year, write a thesis in connection with their elective group in Commerce, and receive the degree of Bachelor of Science.

GRADUATE STUDENTS

Graduates of this or other colleges and universities of good standing will be admitted to this course, and arrangements will be made so that they may take its peculiar studies in two years, or in less time, provided they have already pursued some of them in their undergraduate courses.

PREPARATION OF TEACHERS

Students who wish to prepare themselves to teach commercial subjects in secondary schools will be aided in so arranging their elective work as to attain this end. Special facilities for pedagogical practice will be given such students in connection with the course in Business Administration, and work in addition to that prescribed may be arranged in subjects of especial importance to teachers.

SPECIAL LECTURES

Special lectures are provided from time to time for the purpose of acquainting students with present business conditions and opportunities. So far as possible, men representing the chief business enterprises of the United States are secured for this purpose.

REQUIREMENTS FOR GRADUATION

Students who have successfully completed the above course of study will be admitted to graduation and will receive the degree of Bachelor of Arts.

COURSE IN JOURNALISM

WILLARD G. BLEYER, Chairman, Associate Professor of Journalism.

PURPOSE AND PLAN OF THE COURSE

The courses preparatory to journalism have been selected and arranged with the purpose of indicating to students preparing for journalistic work the studies best adapted to give the broad training necessary for the successful pursuit of this profession. The increasing demand for editors of newspapers and periodicals for college graduates indicates a recognition of the value of a college course as preparation for journalism. It is believed that the value of such a course may be greatly increased by having it include those subjects a knowledge of which is essential for journalism of the best type.

The courses included in the list are of three kinds: (1), those designed to familiarize the student with present social, political, and economic conditions in the light of their origin and development, as well as with the literature of his own and other languages; (2), those designed to develop the student's power of expressing his ideas effectively in writing; (3), those intended to give the necessary technical instruction in the history, organization, and methods of modern journalism. The course of study has been arranged in the belief that the greater part of the time should be devoted to a study of the subjects of the first group,

such as history, political science, economics, sociology, philosophy, psychology, language, and literature, which are fundamental to journalistic work. Instruction in the principles of effective written expression and practice in writing are given by the courses in composition.

The technical work includes courses in newspaper writing of the several kinds and in newspaper editing, with a consideration of the metnods of practical journalism, the history of the American press, and a study of the organization and the 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 courses in newspaper work special lectures on various phases of journalistic work are given by newspaper men in active service.

TECHNICAL AND TRADE JOURNALISM

Although the course in journalism has been arranged primarily for those preparing for newspaper and magazine work, provision has also been made for those interested in technical and class journalism. Two courses are offered in this field, one in the technique of printing and publishing, and one in the methods of technical and trade journalism. These as well as the courses in newspaper and magazine work may be elected by students in the professional schools and courses. Provision is also made by which students in the College of Letters and Science may elect courses in the College of Mechanics and Engineering, the Law School, and the College of Agriculture, as well as in the Course in Pharmacy and the Course in Commerce in the College of Letters and Science. In the same manner students in the Colleges of Mechanics and Engineering, Agriculture, and the Law School, may elect courses in the College of Letters and Science, such as those in newspaper writing and editing. The Course in Commerce in the College of Letters and Science includes a number of special groups of studies designed to furnish opportunity for a more thorough study of the various principles of commerce and industry, such as banking and finance, transportation, manufacturing industries, and agricultural industries. By combining studies in commerce, agriculture, engineering and other technical subjects with those outlined in preparation for journalism,

students can obtain the necessary preparation for practically all lines of technical and trade journalism.

Courses in agricultural journalism are given in the College of Agriculture for those who desire special training for that kind of work.

LABORATORY EQUIPMENT

A laboratory is maintained for the use of the students in the course in journalism. The equipment includes standard typewriters on which students may prepare their work. Several thousand clippings of typical news reports from representative papers are mounted and filed as models. Magazine and special feature articles taken from various periodicals are filed to furnish examples of magazine work. Files of representative daily and weekly papers are provided for reference use by the students. Methods for preserving biographical, descriptive, and statistical information as well as illustrations, are shown in the laboratory. Reference books, with descriptive matter and illustrations of typesetting and typecasting machines, printing presses, and stereotyping machinery also form a part of the equipment. A large collection of typical foreign newspapers serves as a basis for the study of comparative journalism.

STUDENT PUBLICATIONS

The students of the University edit and manage a number of publications all of which offer excellent opportunities for practical experience in various kinds of journalistic work. Places on the editorial and the business staffs of these publications are awarded for the most part on a basis of literary and executive ability, and are open to practically all students of the University. The Daily Cardinal, published as an afternoon newspaper, is edited by a staff organized from the students and students in journalism may thus get systematic practice in all the details of newspaper making. The Sphinx, an illustrated humorous monthly; the Wisconsin Magazine, a monthly devoted to short stories, verse, and essays; and the Badger, the University annual edited and published by the members of the junior class, all give opportunity for a variety of experience in journalism. The Wisconsin Engineer, a quarterly edited and published by the students of the College of Engineering, and the Wisconsin

Country Magazine, a monthly edited and managed by the agricultural students, furnish practice for those interested in technical and trade journalism.

UNIVERSITY PRESS CLUBS

Six clubs are maintained by the students interested in journalism. The All-University Press Club, which was organized in 1892, is composed of those preparing to do journalistic work. The Cubs' Club consists of the freshmen and sophomores interested in newspaper work. The Hoard Press Club was organized in 1908 by a number of students in the College of Agriculture. A chapter of a national professional journalistic fraternity is maintained by the junior, senior and graduate men in the course of journalism and a chapter of a national journalistic sorority is maintained by the young women of the junior and senior classes. The Advertising Club is composed of students interested in advertising.

SCHOLARSHIPS AND PRIZES

University graduate scholarships are open to students of journalism. Several undergraduate prizes in journalism offered by the Daily Cardinal Association are awarded each semester to editors and reporters for excellent work.

GENERAL REQUIREMENTS

Students will be admitted to these courses on compliance with the conditions imposed for entrance to the College of Letters and Science. (See Index under Requirements for Entrance).

Persons over twenty-one years of age, who are not candidates for a degree, and who wish to take special studies, are permitted to enter as adult special students upon giving satisfactory evidence that they are prepared to profit by the courses desired.

Students who have satisfied all the requirements for entrance but do not wish to be candidates for a degree, will be admitted to any of the courses for which they are properly prepared.

For the requirements for a degree of Bachelor of Arts, see Index.

ARRANGEMENT OF COURSES

In accordance with the elective system of the University, students preparing for journalism are not restricted to a fixed course of study, but are permitted to elect any studies which they are qualified to pursue. The following list contains the courses in journalism, and those courses in history, economics, political science, philosophy, and English, which bear most directly upon journalistic work. The courses in each subject have been arranged under the four years in the order in which they normally follow each other. Courses marked with an asterisk are required of all students; the number in parentheses indicate the number of the course in the department; Arabic figures following the parentheses indicate the number of hours a week; and the Roman figures, the semester in which the course is given.

FRESHMAN YEAR

Elements of Newspaper Writing (Journalism 1), 1; *Freshman English (1), 3; *Foreign Language, 4; English History (5), 3; Medieval History (1), 3; *Mathematics, 3, or *Science, 5.

SOPHOMORE YEAR

Newspaper Reporting and Correspondence (Journalism 2), 3; Sophomore Composition (2, 3), or Advanced Composition (6), 3; General Survey of English Literature (30), 3; History of the United States (4), 3; Elements of Economics (1), 3, I, II; Elements of Money and Banking (5), 3; General Political Science (1), 3, I; *Foreign Language, 4.

JUNIOR YEAR

Newspaper Editing (Journalism 3), 2; American Literature (40), 2; Argumentation (Public Speaking 5a), 3, I; Modern European History (2), 3; The British Empire Since 1688 (143), 2; Elementary Law (2), 3, I; Government and Politics in the United States (7), 2, II; International Law (18), 2; Party Government (122), 3, I; Charities and Corrections (141), 3, II; Labor Problems (123), 2, II; Social Psychology (139), 3, I; Ele-

ments of Public Finance (3), 3, I; Problems of Taxation (124), 2, II; History of New England (113), 3, II; Psychology (1), 3, I; Ethics (41), 3, II; History of Modern Philosophy (32), 3 II; Logic (11), 2, II; *Foreign Language, 2.

SENIOR YEAR

Editorial Writing, and Special Feature Work (Journalism 104, 105), 2; History of the West (111), 3; Nineteenth Century Europe (139), 3, II; Diplomatic History of the United States (115), 2; History of Europe and Asia (148), 2; Social and Economic Statistics (130), 3; Transportation and Communication (135), 3, II; Financial History of the United States (133), 3, I; The Money Market (134a) 3, I; Industrial Evolution and Its Problems (120), 2, I; Administrative Problems (106), 2, I; The Law of the Press (125), 1, II; Theory and Practice of Legislation (126), 3; Oriental Politics and Civilization (120), 3, II; Municipal Government in Europe and the United States (115), 3, II; Contemporary International Politics (119), 1; Social and Political Ethics (142), 2, I; Philosophic Thought in Nineteenth Century English Literature (123), 2, II; Abnormal Psychology (107), 2, II; Modern Drama (107), 2; Drama and Shakspere (36), 3; American Literature (247), 2; Current Political Topics (132), 2; *Foreign Language, 2.

DEPARTMENTS OF INSTRUCTION

Journalism

For detailed information regarding courses in Journalism, see Journalism, College of Letters and Science.

1. Elements of Newspaper Writing.
2. Newspaper Reporting and Correspondence.
3. Newspaper Editing.
20. Technique of Printing and Publishing.
104. Editorial Writing.
105. Special Feature and Magazine Writing.
110. Seminary in Journalism.
121. Technical and Trade Journalism.

See also Current Political Topics (course 32 in political science), The Law of the Press (course 26 in political science), Psychological Principles of Advertising (course 19 in philosophy), and courses in agricultural journalism.

Agricultural Journalism

For detailed information see Agricultural Journalism, College of Agriculture.

1. Agricultural Journalism.

English

For detailed information see English, College of Letters and Science.

1. Freshman English.
2. Sophomore Composition.
3. Argumentation.
5. Advanced Sophomore Composition.
6. Advanced Composition.
7. Narration.
8. Dramatic Composition.
30. General Survey of English Literature.
36. The Drama.
40. American Literature.
247. Significant Movements in American Literature.
107. Modern Drama. (cp. Comparative Literature.)

History

For detailed information see History, College of Letters and Science.

1. Medieval History.
2. Modern European History.
4. History of the United States.
5. English History.
111. History of the West.
113. History of New England.
115. Diplomatic History of the United States.
139. The Nineteenth Century, 1815–1900.
143. The British Empire since 1688.
148. Europe and Asia.

Philosophy

For detailed information see Philosophy, College of Letters and Science.

1. Psychology. Introductory Course.

11. Logic.
119. Psychology of Advertising.
23. The Philosophic Thought of the Nineteenth Century as Reflected in English Literature.
32. History of Modern Philosophy.
41. Ethics.
42. Social and Political Ethics.
107. Abnormal Psychology.

Political Economy

For detailed information see Political Economy, College of Letters and Science.

1. The Elements of Economics.
2. Elementary Sociology.
3. Elements of Public Finance.
5. The Elements of Money and Banking.
8. Business Administration.
120. Industrial Evolution and Its Problems.
123. Labor Problems.
123a. Labor Legislation.
124. Problems in Taxation.
130. Statistics.
134a. The Money Market.
135. Transportation and Communication.
139. Social Psychology.
141. Charities and Corrections.
142. Public Utilities.
145. American Labor History.

Political Science

For detailed information see Political Science, College of Letters and Science.

1. General Political Science.
2. Elementary Law.
106. Administrative Problems.
7. Government and Politics in the United States.
115. Municipal Government in Europe and the United States

118. International Law.
119. Contemporary International Politics.
120. Oriental Politics and Civilization.
122. Party Government.
125. The Law of the Press.
126. The Theory and Practice of Legislation.
132. Current Political Topics.

THE COURSE IN PHARMACY

EDWARD KREMERS, Director, Professor of Pharmaceutical Chemistry.

THE OBJECT OF THE COURSE

The prime object of the Course in Pharmacy is to furnish a thoroughly scientific foundation for the pursuit of the profession of pharmacy. The elements of the fundamental natural sciences, chemistry, botany, 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 outined above, *e. g.*, German, physiology, or bacteriology, etc. The four-year student has the great advantage of supplementing his high school preparation during the freshman and sophomore years by acquiring a reading knowledge of German and French, and by the study of university mathematics, all of which studies are of the greatest importance when the more advanced work of the natural sciences is taken up during the junior and senior years.

Special attention is called to the four-year course offered to graduates of accredited high schools. This course was created in order to accommodate those students who desire to obtain a general scientific education and to include in their course the pharmaceutical studies, and with the hope of stimulating a broader pharmaceutical education. For the more applied courses special laboratories have been equipped.

Like the sister profession, medicine, pharmacy, is in need, not only of the general practitioner, but also of the specialist. To meet the demands of such, the University offers graduate courses. Graduates who desire to prepare themselves as chemists for manufacturing establishments, as analytical, food or sanitary chemists, or as bacteriologists, will find that the graduate work in the Course in Pharmacy, as well as the other departments of the University, offers excellent opportunities for advanced and more specialized study. Special lines of research can also be pursued in various departments by those who desire to work for a higher degree. The attention of advanced students is especially called to the graduate work. (See Index.)

Laboratories

A description of the various general laboratories of the University may be found by reference to the Index.

The Pharmaceutical Laboratories. These laboratories are located in the west wing of the second floor of the new Chemistry

Building. One of these is equipped as a dispensary, a second for the manufacture of galenical and chemical preparations, and a third for analytical purposes. The work of these three laboratories and of the milling room in the basement is carefully co-ordinated and culminates in the prescription work of the dispensary.

Collections

The collections of the University, including the drug cabinet, are described elsewhere. See Index under Collections.

Libraries

For a statement as to general library facilities at the University and in the city of Madison, see Index under Library. The department library for ready reference is now housed in the library of the new Chemistry Building, a large, well lighted and equipped room on the third floor, unusually well supplied with reference works and the best periodicals. The other department libraries, as well as the general library, are all on the same campus and, therefore, easy of access.

Terms of Admission

The requirements for admission to the several colleges of the University are described on previous pages. See Index under Admission.

The special requirements for admission to the two-year pharmacy course are herewith repeated.

I. Graduates from high schools are admitted without examination and without practical experience in a drug store.

II. Non-graduates are admitted if they comply with the following requirements:—

1. They must be at least eighteen years of age.

2. They must present satisfactory certificates of *at least* one year's attendance from some standard high school, or its equivalent from a similar educational institution.

3. The time intervening between the secondary education and the college course should have been spent in a drug store where physicians' prescriptions are regularly compounded.

Degrees

The first degrees given in pharmacy are that of *Graduate in Pharmacy*, upon completion of the two-year course, and that of *Bachelor of Science, Pharmacy Course*, conferred upon candidates who have successfully met the requirements of the four-year course.

The degree of *Master of Pharmacy* is conferred as a second degree upon graduates in pharmacy.

The degrees of *Master of Science* and *Doctor of Philosophy*, are conferred as higher degrees upon candidates who have a baccalaureate degree.

Fees and Expenses

The tuition and laboratory fees and an estimate of expenses for board and lodging are given on previous pages. (See Index.)

COURSES OF STUDY

Two-Year Course

FIRST YEAR. FIRST SEMESTER.

Chemistry 3.* General Chemistry. The laboratory work accompanying this course is especially designed for pharmacy students. *Eight credits.* Mr. KAHLENBERG, Mr. WALTON, Mr. LYNN.

Botany 1. General Botany.† Introductory to both botany and zoology, and required as preliminary to all work in either department. *Two recitations, or lectures, and eight hours' laboratory work a week; five credits.* Mr. ALLEN and assistants.

Botany 135. The Collection and Commerce of Crude Drugs. Laboratory and field work supplemented by lectures and recitations. *One credit.* Mr. DENNISTON.

Pharmacy 1. Pharmaceutical Technique. *Three credits.* Mr. KREMERS, Mr. LYNN.

---

* The figures refer to the number of the courses as given in statements under departments of instruction.

† Students who have had a year high school course in botany, including laboratory work, can substitute an elective for this semester's work.

FIRST YEAR. SECOND SEMESTER

Chemistry 3. General Chemistry continued as a three-credit study during the entire semester, with qualitative analysis as five credits during the first half of the semester. *Five and one-half credits.* Mr. KAHLENBERG, Mr. WALTON, Mr. LYNN.

Chemistry 15. Quantitative Analysis. *Second half of semester; daily. Two and one-half credits.* Mr. LENHER, Mr. LYNN.

Chemistry 20b. Organic Chemistry for pharmacy students. Recitations and laboratory work. *Two credits.* Mr. FISCHER, Mr. LYNN.

Botany 130. Identification and Classification of Seed Plants. A study of the floral structure of types of seed plants, with especial attention to those of economic importance. Practice in the determination of species by the use of a systematic key. Lectures, laboratory, and field work. *Second semester; M., Tu., W., Th., F.,* 8 *to* 10, *and Saturday excursions; five credits.* Mr. DENNISTON, Mr. STEWART.

Pharmacy 10. History of Pharmacy, 1911–12; Drug Store Practice, 1912–13. *One credit.* Mr. KREMERS and special lecturers.

SECOND YEAR. FIRST SEMESTER

Chemistry 6. Advanced Inorganic Chemistry. *Lectures and recitations, Tu., Th., F.,* 10; *laboratory work daily; five credits.* Mr. KREMERS, Mr. HANSON.

Chemistry 40. Plant chemistry. As a three credit study supplementary to pharmacognosy. *Recitations, M.,* 10; *two laboratory periods.* Mr. KREMERS, Mr. HANSON.

Botany 110. Plant Histology. A systematic study of the tissues of the phanerogams and ferns. *Three credits.* Mr. DENNISTON.

Botany 132. Pharmacognosy. A study of Materia Medica, including the origin, history, properties, and uses of drugs. Required of all students in pharmacy. *Throughout the year; two credits.* Mr. DENNISTON.

Pharmacy 2. Pharmaceutical Technology. The study and manufacture of galenical and other preparations; waters, tinctures, fluid extracts, spirits, oleo-resins, etc.; also of pills, suppositories, ointments, plasters, etc. *Lectures and recitations, Tu.,*

Th., 11; *three laboratory periods; five credits.* Mr. KREMERS, Mr. LANGENHAN.

Pharmacy 10. History of Pharmacy 1911–12; Drug Store Practice 1912–13. *Lectures and topics; one credit.* Mr. KREMERS, and special lecturers.

Thesis. *Two credits.*

SECOND YEAR. SECOND SEMESTER

Chemistry 27. Advanced Organic Chemistry. *Lectures and recitations, Tu., Th., F.*, 10; *laboratory work daily; five credits.* Mr. KREMERS, Mr. HANSON.

Chemistry 40. Plant Chemistry. Continued from first semester. Mr. KREMERS, Mr. HANSON.

Chemistry 18. Alkaloid Assay. *One credit.* Mr. R. FISCHER, Mr. LANGENHAN.

Botany 111. Microscopical Examination of Drugs and Foods. The characteristics of powdered drugs and food products, and methods of detecting adulterations. *Second semester; three credits.* Mr. DENNISTON, Mr. HERREN.

Botany 132. Pharmacognosy. Continuation of first semester's work. Mr. DENNISTON.

Pharmacy 3. Prescription Practice. The study of the prescription and of the materials that enter into it; practice in the compounding of physicians' prescriptions; also the study of physical, chemical and therapeutical incompatibilities. *Lectures and recitations, Tu., Th.*, 11; *two laboratory periods; four credits.* Mr. KREMERS, Mr. LANGENHAN.

Pharmacy 10. History of Pharmacy 1911–12; Drug Store Practice 1912–13. Continued from first semester. Mr. KREMERS, and special lecturers.

Thesis. Continued from first semester.

Four-Year Course

Students who desire to include pharmaceutical studies as a part of their general college education will have to elect the prerequisite studies enumerated below to accomplish this end. Such a course, if to lead to the degree of *Bachelor of Science, Pharmacy Course*, must include courses 1, 2, 3, 4, and 10, in Pharmacy, and course 132 in Botany.

Basal sciences: Chemistry 3, 15, 20b or their equivalents. Botany 1 and 130 or its equivalent. Physics 1. These should be taken during the first and second years.

Advanced sciences: Chemistry 6 and 27. Botany 110 and 111. 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, or their equivalents, which should be taken during the first and second years.

The major study and thesis may be taken in chemistry, botany, pharmacy, or any department in which the student is sufficiently prepared to do such work. For the rules governing the major study and thesis see index under Major Study.

Additional electives sufficient to make 120 unit-hours may be chosen upon consultation with the adviser for Pharmacy students.

THE LIBRARY SCHOOL

MATTHEW S. DUDGEON, Director.
MARY EMOGENE HAZELTINE, Preceptor.

ORGANIZATION

The Wisconsin Library School was established in 1906 by the Free Library Commission. The school was made possible by the action of the Legislature, which in 1905 increased the appropriation of the Commission to provide for its support. The laws of 1909 authorized the regents of the University to co-operate with the Commission in the maintenance of the Library School. The same act also provided that the name of the School should thereafter be "the school of library science of the university."

In 1908 a joint University and Library School course was established, whereby a student, with the opportunities afforded by the summer session of the University, could, in four years, take the degree of Bachelor of Arts, and at the same time complete the technical training required by the Library School. Because of lack of funds, it was not until 1911 that the regents were en-

abled to co-operate in the maintenance of the School. The appropriation granted by the Legislature of 1911 made it possible, however, for the University thus to co-operate and the Library School has since been closely affiliated with the University.

PURPOSE OF THE SCHOOL

The purpose of the school is to provide a course of study in library technique, methods, and administration, that shall fit its students to become well rounded library workers. The fundamental principles of library work in all of its branches, developed on practical rather than theoretical lines, are included in the course of instruction. These principles are essentially the same for all classes of libraries, but the interests and needs of the small institutions constituting the majority of the libraries of the Middle West receive special attention. Nevertheless, the graduates of the School will be so well grounded in the essentials of library work, that they should without difficulty fulfill the requirements of positions in all types of libraries.

COURSE OF INSTRUCTION

The course of instruction offered in the School, comprises the various bibliographical, technical, and administrative courses that are necessary to meet the demands of the library world. This course of study can be taken:

(a) As an independent library course of one year, by all who meet the entrance requirements of the School. There is no opportunity to take other work while pursuing the one year's course. The certificate of the Library School is given to those who successfully complete this course.

(b) As a joint course with the University. For this course, during the first two years, students take the regular freshman and sophomore work of the College of Letters and Science, choosing such courses as will enable them to pass the entrance examinations of the Library School. In the junior and senior years, students substitute equivalent courses in the Library School for ten credits of University work each year. Of the twenty credits of Library School work accepted by the University, four may be counted toward an English major, if the candidate chooses that subject. This joint

course leads to the degree of Bachelor of Arts from the University, and to the certificate of the Library School.

ENTRANCE REQUIREMENTS

Each candidate for admission to the School must fill out an application blank, copies of which can be obtained by addressing the Preceptor, *Miss Mary Emogene Hazeltine, Library School, Madison, Wis.* This blank should be returned promptly to the School; but the order in which applications are received does not affect the applicant's chance of admission.

Without exception, all applicants are required to take the entrance examinations, which are held on the second Friday in June of each year. These examinations are competitive, and can be taken only at the time specified. Only those who by personal interview or otherwise demonstrate a fitness for the work will be considered eligible.

All who intend to take the entrance examinations are urged to report in Madison, as a personal interview with prospective students is highly desirable. If the applicant's residence is at so considerable a distance from Madison that this is impracticable, the examinations may be taken in some accredited library near the candidate's home, provided its librarian will consent to conduct them for the School. These local examinations must take place on the same date as those in Madison, and applications must be made sufficiently in advance to make possible all necessary provisions for the examinations. In forwarding applications, candidates should state whether or not they can take the examinations in Madison, and if not, should advise the Preceptor as to the local library where they can be taken.

Applicants for the joint University and Library School course take these examinations as sophomores. Experts are agreed that the best foundation for success in library work is a sound general education, and the ideal plan of preparation is a four year's college course, followed by one or two years of technical training. It is for those who are not able to afford so much time, that the joint course has been arranged.

Applicants for the independent course of one year should bear in mind the importance of a college course as an educational

equipment for library work. It is desirable that all candidates should have such an education, or at least two years of college training. The examinations presuppose *at least* a high school education or its equivalent, and are designed to test the education, reading, and general information of the applicant, especially in history, general literature, and current events. Ability to translate from the German is also required. Applicants who have not had a high school course or its equivalent should not even attempt the examinations.

Students will be admitted only at the beginning of the first semester.

Accepted candidates must meet several extra entrance requirements before joining the classes in the fall. All who have not had experience in library work, must spend at least one month in actual work in a designated library before the School opens in September. This applies both to one year students and to the juniors of the joint course. Candidates must be skillful with the typewriter before entering, as the School requires its use in the preparation of many of the lessons, and no instruction in this is given in the school. It is also required that the standard "library handwriting" be mastered. Accompanying the application blank is a required list of books, to be read in preparation for the first recitation of the school year in book selection. The last three requirements apply both to the one year students and to the seniors of the joint course.

TUITION AND EXPENSES

For students taking the one year of library instruction alone, the fee is $50 for the course for residents of Wisconsin, $25 being payable at the opening of each semester. For non-residents, the fee is $100 for the course, $50 being payable at the opening of each semester. These fees are payable to the cashier of the Library School. Out of these fees the Commission pays the traveling expenses of students incurred in going to and from the required field practice. The average cost of text-books and supplies for each student is estimated to be $25 for the year.

For students taking the joint course, the fee will be the difference between that required by the University as registration and incidental fees, and the stated Library School fees. These

students will pay their fees at the bursar's office of the University, and on presentation of his receipt, will pay the difference to the cashier of the Library School.

PLAN OF THE COURSE OF STUDY

(a) For the joint course with the University, students in the junior year will arrange their schedule to spend Tuesdays and Thursdays at the Library School, taking Monday, Wednesday and Friday work at the University. In the senior year, the days will be reversed, Monday, Wednesday, and Friday being spent at the School. The plan of the joint course follows:

Junior Year

First semester. Reference (2 credits), Loan (1), Classification (2). *Second semester.* Reference (2), Public Documents (1), Library Economy (1), Children's Literature (1); with practice work, for which facilities will be offered by the Free Library Commission and in the Madison Free Library.

Senior Year

First semester. Cataloguing (3), Library Economy (1), Book Selection and Publishing Houses (1). *Second semester.* Book Selection (1), Administration (1), Library Economy (1), Subject Bibliography and Bibliography for thesis (2). The thesis will be under the direction of the University department in which the student chooses his major subject, and the bibliography included in it will be accepted by the Library School in satisfaction of its thesis requirements. Two months of actual library work in an approved library, preferably a Wisconsin library, will be required by the Library School before its diploma is granted. This work, for which the Preceptor of the school will arrange, can be done during the summer, following either the junior or senior year, and is more fully described in the paragraph below.

Field Practice

During eight weeks of the course the regular schedule of class work is suspended and the students are placed in the larger libraries of the state, where they do actual library work

of all kinds, under the supervision of the local librarian and the members of the faculty. Practice is also given in such libraries as are in process of organization or reorganization under the auspices of the Free Library Commission. The time selected for this work is February and March of each year; this is the busiest season in public libraries, and the time, therefore, that will afford the best experience.

This actual library experience seeks to cover all phases of technical library routine, and enables the students to test the theories discussed in the class room. Students thus acquire poise and confidence in meeting and serving the public, and ascertain for themselves how library work reaches out to all interests in a community, and becomes a vital element in its life. This practical work is possible in the Wisconsin Library School because it is maintained under the joint auspices of the University and the Free Library Commission, which has supervision of the public libraries in Wisconsin.

SPECIAL CATALOGUES

Detailed information regarding the Library School is given in the special catalogue of the school. A copy of this can be obtained by addressing the Preceptor, Miss Mary Emogene Hazeltine, Library School, Madison, Wis.

There is also a special bulletin, entitled Library Training Courses, which gives in some detail the University courses that are especially advised for those who elect the joint University and Library School course.

COURSE FOR THE TRAINING OF TEACHERS

EDWARD C. ELLIOTT, Director, Professor of Education

GENERAL STATEMENT

In order to correlate and to provide for the further development of those several activities comprising the work of the University for the preparation of teachers, and to contribute to the improvement of the standards of teaching, especially in the secondary schools of the state, the special course for the training of teachers was established, February, 1908.

The course for the training of teachers is intended to prepare students for teaching and for supervising instruction, particularly in the public high schools of the state. This preparation rests upon the basis of a sound general education, and consists, in addition, of the following principal parts: (1) special academic instruction in the subjects to be taught; (2) professional training by means of, (a) departmental teachers courses, (b) courses in the departments of Education and Philosophy, and (c) the observation of teaching, under supervision, in the University Demonstration School and in the Madison Public Schools, and in certain instances by practice teaching.

The demands made upon teachers under modern educational conditions render it highly desirable that preparation for teaching should include one year of graduate study in addition to the four years of college work. Where this is not possible, students are strongly recommended to take two summer sessions, or one semester, of advanced study, entitling them to the special certificate, of which particulars are given below (see page 324). Provision is, however, made for a course to be completed during the four years of undergraduate study, embodying the features outlined above, and leading to the University Teachers Certificate.

UNDERGRADUATE COURSE FOR THE TRAINING OF TEACHERS

The Undergraduate Course for the Training of Teachers is designed to meet the needs of those students who, during the period of undergraduate study, desire to prepare themselves for teaching. For these students, provision is made for such a correlation of

academic and professional study as will meet the minimum requirements for teaching.

ADMISSION AND REGISTRATION.—1. To become a candidate for the University Teachers Certificate, a student must, before December first of the junior year, in addition to the usual registration, register in the Course for the Training of Teachers.

2. Each registrant must indicate for the joint approval of his major adviser and the director of the course, the subject or subjects, preparation for the teaching of which is contemplated. In no case will more than three *related* subjects be approved. (A major subject; a major and one minor subject; a major and two minor subjects.)

REQUIREMENTS FOR COMPLETION.—1. Satisfactory fulfillment of the requirements of preparation for teaching of either:

(a) A major subject; or

(b) A major subject and one minor subject; or

(c) A major subject and two minor subjects.

2. To fulfill the requirements of preparation for the teaching of the selected *major* subject, a student must present a total of not less than *twenty* credits; and, in addition, credit for the departmental teachers course in such major subject. (See section, Departments of Instruction (p. 314 ff.), for the credit requirements prescribed by the different departments.)

3. To fulfill the requirements of preparation for the teaching of the selected *minor* subject or subjects, a student must present a minimum of *ten* credits in each minor subject. This minimum may not include any departmental teachers course. (See section, Departments of Instruction (p. 314 ff.), for the credit requirements prescribed by the different departments.)

4. In addition to the requirements for the major and minor subjects, the special requirements for the University Teachers Certificate, as indicated in the following section, must be completed.

University Teachers Certificates

The requirements for the University Teachers Certificate shall consist, in addition to the work done in the major subject and other work, of *twelve* credits, to be divided as follows: Psychology, (Philosophy 1), *three* credits; one departmental teachers course, *two* credits; Education, *seven* credits; including an op-

tion of *two* credits in a teachers course in a second department (June 3, 1907).

A departmental teachers course may not be credited toward the certificate unless the subject concerned is offered as a major or minor.

The requirement of Education is subject to the following conditions:

(a) Credits must be obtained from the following courses: Education 1, 6, 11, 13 and 41. These courses are the only ones in Education that may be elected in fulfillment of the requirements for the certificate, except as noted in (b).

(b) Graduates of normal schools are *not* permitted to elect Education 1, 6, 11, 13 or 41 in fulfillment of the requirements for the certificate.

Graduates of the long course in Agriculture presenting credit in the following special work will be entitled to receive the certificate. Psychology, *three* credits; Education, *three* credits; Agricultural Education, *two* credits.

Graduates of normal schools, candidates for the bachelor of arts degree, must obtain credit for the following special work in the University in order to receive the certificate. Education, *three* credits; one departmental teachers course, *two credits.*

5. Upon the fulfillment of the foregoing requirements a student will be recommended by the director of the course to the President of the University, to receive the certified statement prescribed by section 458b—2 of the Laws of Wisconsin. This certified statement indicating the subject, or subjects, the requirements for the teaching of which have been fulfilled, when presented to the state superintendent, entitles the holder to receive a license to teach for one year in any public school in Wisconsin. Graduates who have received this certificate and present satisfactory evidence of good moral character, and one year of successful teaching after graduation, are entitled to receive from the state superintendent an unlimited state certificate.

PROFESSIONAL INSTRUCTION—DEPARTMENTAL TEACHERS COURSES

As stated above, this course rests upon the foundation of a sound general education obtained during the first two years of college work. Very naturally during these two years, the student

will begin to direct his study along certain academic lines, until by the beginning of the junior year, his tastes and capacities will enable him to focus his attention more directly upon those subjects, preparation for the teaching of which is contemplated. During the junior year, and in some instances earlier, opportunity will be found to elect certain of the required fundamental professional courses in Philosophy and Education.

The plan of the course involves a considerable concentration of professional study during the junior and senior years. In addition to the courses in Education, this professional training includes courses, within the selected academic departments, especially adapted to the professional needs of students preparing to teach. These departmental teachers courses place their chief emphasis upon the scope and method of presentation of the specific subject matter normally included within the curriculum of the high school and are in charge of instructors especially fitted for the work. They are open only to those students who have previously completed a certain prescribed minimum of academic courses in the subject, usually students of senior or graduate standing. At least one of these courses must be taken by students preparing to teach. Credit for such course is included in the maximum number of credits permitted for a major subject.

For the purpose of affording a practical concrete basis for the work of the several departmental teachers courses, and of the courses in Education, facilities are provided for the observation of teaching in the University Demonstration School and in the Madison public schools. In a few instances opportunities for practice teaching are afforded.

The observation of teaching carried on in the high and elementary schools of Madison, is under a special agreement with the board of education of the city. By this agreement, a number of teachers in the Madison public schools have been specially designated to cooperate with the university instructors in making the departmental teachers courses and the observational work of the fullest value to the students.

THE UNIVERSITY DEMONSTRATION SCHOOL

The University Demonstration School, a six year secondary school, was opened in September, 1911, and is maintained by the University as an integral part of the Course for the Train-

ing of Teachers. The primary purposes of this school are, (a) the exemplification of sound educational theory and organization, with special reference to secondary education, and (b) the provision of appropriate facilities for observation and practice teaching. At the present time the school is conducted in the building formerly occupied by the Wisconsin Academy, at the corner of Gilman and State Streets. A new building, to cost when completed, $150,000, is being provided by the Regents. It will be ready for occupancy in September, 1913.

The details of the organization, program of studies, etc., of the Demonstration School will be found in the annual announcement of the school.

DEPARTMENTS OF INSTRUCTION

Only such departments and courses of instruction are here indicated as are immediately related to the professional work mentioned within the Undergraduate Course for the Training of Teachers. The announcements of the several departments and colleges of the University should be referred to for more extended and detailed information regarding the courses of instruction open to those students intending to teach. The director of the course and the departments concerned should be consulted with reference to the fulfillment of the requirements for the Advanced Course for the Training of Teachers.

Agriculture

For detailed information concerning the equipment, and the courses offered in the College of Agriculture, see index under Agriculture.

REQUIREMENTS FOR TEACHING AGRICULTURE AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—Graduates of the long course in Agriculture, preparing to teach, will be entitled to receive the University Teachers Certificate, upon the recommendation of fitness by the dean of the college of agriculture, and upon completing as a part of their elective work, the following special courses: Psychology, *three* credits; Education, *three* credits; Agricultural Education, *two* credits.

REQUIREMENTS FOR TEACHING AGRICULTURE AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—Students in the College of Letters and

Science are permitted to offer Agriculture as a minor subject in connection with a major subject in physical or biological science. A minimum of *eighteen* credits will be required, including *ten* credits in Animal Husbandry 1, Agronomy 1, Dairy Husbandry 1, Horticulture 1; the remaining *eight* credits to be from *approved* and *related* courses from the following: Agricultural Chemistry 1, 2 and 4; Agricultural Economics 1 and 226; Agricultural Engineering 1, 2, and 4; Agronomy 2 and 120; Animal Husbandry 2, 120; Bacteriology 1, 1a, and 22; Dairy Husbandry 2; Horticulture 2, 6, 7, (8, open to women); Soils 1, 2, and 120.

DEPARTMENTAL TEACHERS COURSE.—Agricultural Education 1. *Second semester, two credits.* Mr. HATCH.

Botany

For a detailed description of the courses offered in Botany, as a preparation for teaching, see index under Botany.

Students preparing to teach botany, either as a major or minor subject, are advised to elect courses in both structural and physiological botany, and also those that involve field work.

REQUIREMENTS FOR TEACHING BOTANY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits from the following courses: Botany 1, 103, 104, 105, 106, 110, 129, 130, 146, 150, 160.

REQUIREMENTS FOR TEACHING BOTANY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits from the following courses: Botany 1, 2, 103, 104, 105, 106, 110, 129, 130, 146, 160. Attention is called to courses 1 and 2, which together constitute a year's work and are especially adapted to the needs of those taking a teacher's minor in botany.

DEPARTMENTAL TEACHERS COURSE.—Botany 160. Botanical Methods. Prerequisite, courses 1, 103, 104, 105, 106. *Second semester; two credits.* Mr. GILBERT.

Chemistry

For a detailed description of the courses offered in Chemistry, as a preparation for teaching, see index under Chemistry.

REQUIREMENTS FOR TEACHING CHEMISTRY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits, including courses 1, 120 (first semester) and 11 or 15 (at least five credits).

REQUIREMENTS FOR TEACHING CHEMISTRY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits.

DEPARTMENTAL TEACHERS COURSE.—Chemistry 5. The Teaching of Chemistry. Prerequisite, major requirements above indicated; course 11 or 15 may be taken simultaneously. *Second semester; two credits.* Mr. WALTON.

Civics

See under Political Science.

Commerce

For detailed information concerning the courses offered in the Course in Commerce, see index under Commerce.

The course in Commerce affords adequate facilities for those students who wish to prepare themselves to teach commercial subjects in secondary schools. Such students are advised to consult with the director of the Course in Commerce in the arrangement of elective work. Special facilities for pedagogical practice will be given such students in connection with the courses in business administration, and work in addition to that prescribed may be arranged in subjects of especial importance to teachers.

Drawing

For detailed description of the courses offered in Drawing, see index under Drawing.

REQUIREMENTS FOR TEACHING DRAWING AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of six credits in courses 1 and 2. This minor may be presented only by students having a major in Manual Arts.

Education

For detailed information concerning the equipment, and the courses offered in Education, see index under Education.

The following courses are open for election by those students fulfilling, within the University, the requirements in Education of the Undergraduate Course for the Training of Teachers. (See Index under University Teachers Certificate).

Education 1. History of Modern Education. *Repeated each semester; two or three credits.* Mr. WELLS.

Education 6. Public Education. *Repeated each semester, two credits.* Mr. Elliott.

Education 11. Mental Development. *Repeated each semester; two or three credits.* Mr. O'Shea.

Education 13. Principles of Education. *Repeated each semester; two or three credits.* Mr. O'Shea.

Education 41. Educational Psychology. *Repeated each semester; two or three credits.* Mr. Henmon.

The above mentioned courses are not open for election by normal school graduates fulfilling the requirements for the University Teachers Certificate. For courses open to such students, see announcement of courses under the department of education.

English

For a detailed description of the courses offered in English, as a preparation for teaching, see index under English.

Requirements for teaching English as a major subject—undergraduate course.—A minimum of twenty-four credits, in addition to the thesis, and exclusive of course 1. Courses 30; 120a or 123 and 25; 50a and 50b must be included. A total of thirty-six credits, in addition to the thesis and course 1, may be taken.

Requirements for teaching English as a minor subject—undergraduate course.—A minimum, (in addition to course 1), of courses 30; 2 or 3 or 5 or 6 (to be taken in the sophomore or junior year) and 50a; and one of the following groups: (a) 34 *and* 35; (b) 36 *or* 137; (c) 40.

Departmental teachers courses.—50a. The Teaching of English. *First semester; two credits.* Mr. Bassett.

50b. The Teaching of English. (Continuation of 50a). *Second semester; two credits.* Mr. Bassett.

French

See under Romance Languages.

Geology

See under Physiography and Geography.

German

For detailed description of the courses offered in German as a preparation for teaching, see index under German.

REQUIREMENTS FOR TEACHING GERMAN AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—Students beginning the study of German in the University with course 1 will find it difficult to prepare to teach German as a major subject. Students taking course 2 in the freshman year will as a minimum have to devote to German from eight to ten semester hours a year for the remaining three years, taking thus, including the thesis, a total of at least twenty-four credits in advance of course 2. For the maximum number of credits that may be elected see p. 177. The following courses are required: courses 10 to 112, 114, 130 or 131, 150 and 151.

REQUIREMENTS FOR TEACHING GERMAN AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of course 10 or 112 (with prerequisite) and at least one year course or two semester courses in German literature selected from courses 21 to 28 inclusive, or 130 or 131.

DEPARTMENTAL TEACHERS COURSE.—German 114. The Teaching of German. *Each semester; two credits.* Mr. PURIN.

Greek

For a detailed description of the courses offered in Greek as a preparation for teaching, see index under Greek.

REQUIREMENTS FOR TEACHING GREEK AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of eighteen credits in courses 1a, 1b, 2a, 3, and either 105a and 105b or 106.

REQUIREMENTS FOR TEACHING GREEK AS A MINOR SUBJECT.—A minimum of courses 1a, 1b, 2a and 3.

DEPARTMENTAL TEACHERS COURSE.—The Department of Greek does not offer a regular departmental teachers course. For those preparing to teach Greek, opportunity is provided to study the methods and aims of the instruction through the university classes in Elementary Greek.

History

For a detailed description of the courses offered in History as a preparation for teaching, see index under History.

REQUIREMENTS FOR TEACHING HISTORY AS A MAJOR SUBJECT—UN-

DERGRADUATE COURSE.—A minimum of thirty credits, of which at least fourteen must be in advanced courses and thesis.

REQUIREMENTS FOR TEACHING HISTORY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of sixteen credits, including at least four in advanced courses.

DEPARTMENTAL TEACHERS COURSES.—History 150. The Teaching of History. *Each semester; two credits.* Mr. CHASE.

History 151. Supplementary Reading for High School Teachers of History. *Second semester; two credits.* Mr. CHASE.

Home Economics

For a detailed description of the courses offered in Home Economics as a preparation for teaching, see index under Home Economics.

REQUIREMENTS FOR TEACHING HOME ECONOMICS AS A MAJOR SUBJECT—UNDERGRADUATE COURSE—A minimum credit of courses 2, 3, 4, 5, 6, 7, 8, 109, 10 and 121.

REQUIREMENTS FOR TEACHING HOME ECONOMICS AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits including courses 2, 3, 5, and 6.

DEPARTMENTAL TEACHERS COURSE.—Home Economics 121. Prerequisite courses, 2, 3, 4, 5, 6, 7, 8, 109, 10. *Second semester; two credits.* Miss MARLATT.

Latin

For a detailed description of the courses offered in Latin as a preparation for teaching, see index under Latin.

REQUIREMENTS FOR TEACHING LATIN AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of thirty-two credits, including courses 1, 2, 3 or 5, and 4, or equivalents, and 116.

REQUIREMENTS FOR TEACHING LATIN AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-four credits, including courses 1, 2, 3 or 5, and 4, and one advanced reading course for one year.

DEPARTMENTAL TEACHERS COURSE.—Latin 116. The Teaching of Latin. *Second semester; two credits.* Mr. SLAUGHTER.

Manual Arts

For a detailed description of the courses offered in Manual Arts, as a preparation for teaching, see index under Manual Arts.

REQUIREMENTS FOR TEACHING MANUAL ARTS AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of thirty credits in selected courses.

REQUIREMENTS FOR TEACHING MANUAL ARTS AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twelve credits, including courses 2, 4, the first semester of 12, and either 3 or 5 or a selected substitute.

DEPARTMENTAL TEACHERS COURSE.—Manual Arts 12. The Teaching and Supervision of Manual Arts. *Throughout the year; four credits (may be elected either semester).* Mr. CRAWSHAW.

Mathematics

For a detailed description of the courses offered in Mathematics as a preparation for teaching, see index under Mathematics.

REQUIREMENTS FOR TEACHING MATHEMATICS AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-five credits, including courses 5, 6, and 112 or 115, and the courses that necessarily precede them.

REQUIREMENTS FOR TEACHING MATHEMATICS AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of fifteen credits, inclusive of course 5.

DEPARTMENTAL TEACHERS COURSE.—Mathematics 122. The Teaching of Mathematics. *Repeated each semester; two credits.* Mr. HART.

Music

For detailed information concerning the courses in music, as a preparation for teaching public school music, see index under Music.

The School of Music has adequate facilities for the training of teachers of public school music. This training includes courses both for those who expect to combine the teaching of other branches with the subject of music in the grades or the high school (see in particular course 5); and for those who desire to fit themselves for the special work of supervision of music in the public schools (see in particular courses announced in public school music). Opportunity is also offered for cultural studies in appreciation of music, history of music, etc.

Attention is called to the special advantages offered in the school of music for the private study of voice culture, pianoforte,

organ, violin and other orchestral instruments, at moderate expense. There is also opportunity for choral practice in the large Choral Union and orchestral practice in the University Orchestra, both of which rehearse weekly throughout the academic year.

Philosophy

For detailed information concerning the courses offered in Philosophy, open for election by students preparing to teach, see index under Philosophy.

The following course (Philosophy 1) must be completed by all students fulfilling the requirements of the Undergraduate Course for the Training of Teachers.

Philosophy 1. Psychology: Introductory Course. *First semester; three credits.* Mr. JASTROW, Mr. SHARP, Mr. OTTO.

Physical Education

For detailed information concerning the courses in Physical Education as a preparation for teaching, see index under Physical Education.

REQUIREMENTS FOR TEACHING PHYSICAL EDUCATION AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of forty credits in courses 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, and four years in course 20.

REQUIREMENTS FOR TEACHING PHYSICAL EDUCATION AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits in courses 5, 8, 9, 10, 11, 12, 13, and 19. Not more than four credits in course 19, and 2 years in course 20.

DEPARTMENTAL TEACHERS COURSE.—Physical Education 19. Special Technique. *Two credits.*

Physics

For a detailed description of the courses offered in Physics as a preparation for teaching, see index under Physics.

REQUIREMENTS FOR TEACHING PHYSICS AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits in approved courses.

REQUIREMENTS FOR TEACHING PHYSICS AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits in approved courses.

DEPARTMENTAL TEACHERS COURSE.—Physics 6. The Teaching of Physics. Open to all who elect physics either as a major or as a minor subject. *Second semester; two credits.* Mr. SNOW.

Physiography and Geography

For a detailed description of the courses offered as a preparation for teaching physiography and geography, see index under Geology.

REQUIREMENTS FOR TEACHING PHYSIOGRAPHY AND GEOGRAPHY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits in approved courses in the department of geology.

REQUIREMENTS FOR TEACHING PHYSIOGRAPHY AND GEOGRAPHY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of ten credits in approved courses in the department of geology.

DEPARTMENTAL TEACHERS COURSE.—Geology 110. The Teaching of Physical Geography. *First semester; two credits.* Mr. WHITBECK.

Physiology

For a detailed description of the courses offered in anatomy, physiology, bacteriology and hygiene as a preparation for teaching Physiology, see index under Anatomy, Physiology, Bacteriology, Hygiene.

The departments of Anatomy, Physiology, Bacteriology and Hygiene, acting conjointly, have outlined the following as a preparation for teaching human physiology.

REQUIREMENTS FOR TEACHING PHYSIOLOGY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty-three credits in the following courses: physiological chemistry 4 (prerequisite, organic chemistry) four credits; anatomy 105 (prerequisite, biology 1) three credits; anatomy 115, three credits; physiology 5, nine credits; bacteriology 1, three credits; general hygiene 7, one credit.

In order to fulfill these requirements, physics 1, chemistry 1, and biology 1, should be completed before the beginning of the junior year.

REQUIREMENTS FOR TEACHING PHYSIOLOGY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of eight credits in the following courses: physiology 1a and 1b, bacteriology 1, general hygiene 7. Physics 1, chemistry 1, and biology 1 should be taken.

Political Science

For a detailed description of the courses offered in Political Science as a preparation for teaching Government see index under Political Science.

REQUIREMENTS FOR TEACHING GOVERNMENT AS A MAJOR SUBJECT—UNDERGRAUATE COURSE.—A minimum of twenty-one credits, in addition to the thesis, in approved courses, and including course 129.

REQUIREMENTS FOR TEACHING GOVERNMENT AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of sixteen credits in approved courses.

DEPARTMENTAL TEACHERS COURSE.—Political Science 129. The Teaching of Government. *Second semester; two credits.* Mr. BAILEY.

Romance Languages

For a detailed description of the courses offered in French as a preparation for teaching, see index under Romance Languages.

Students preparing to teach Spanish or Italian, should consult with the chairman of the department of Romance Languages.

REQUIREMENTS FOR TEACHING FRENCH AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of twenty credits in advance of second year French. The following courses are required: course 135 and one two-credit composition or conversation course, or two one-credit courses of such work. At least one of the three-credit courses dealing with an extensive period of French literature and course 138 in French pronunciation should be taken. For those taking more than the minimum, course 240 is recommended.

REQUIREMENTS FOR TEACHING FRENCH AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—A minimum of eight credits in advance of second year French. At least one course in conversation or composition, and one course in some extensive period of French literature, should be taken. The requirements for preparation to teach French as a minor will vary greatly, depending upon the acquirements of the student in first and second year work. All such students are advised to consult with the chairman of the department of Romance Languages during their second year's work in French.

DEPARTMENTAL TEACHERS COURSE.—French 135. The Teaching of French. *Throughout the year; one or two credits.* Mr. SMITH.

Zoology

For a detailed description of the courses offered in zoology as a preparation for teaching, see index under Zoology.

REQUIREMENTS FOR TEACHING ZOOLOGY AS A MAJOR SUBJECT—UNDERGRADUATE COURSE.—Biology 1; zoology 1a, 1b, 102a, 104a 105, 109b; four credits elective. In special cases other courses may be substituted by permission of chairman of department.

REQUIREMENTS FOR TEACHING ZOOLOGY AS A MINOR SUBJECT—UNDERGRADUATE COURSE.—Biology 1; zoology 1a, 1b, 102a, 104a courses in the list above indicated. The second semester only of Biology 1 may be counted toward the fulfillment of this requirement.

DEPARTMENTAL TEACHERS COURSE.—Zoology 120. The Teaching of Zoology. *First semester; one credit.* Mr. GUYER.

ADVANCED COURSE FOR THE TRAINING OF TEACHERS

The Advanced Course for the Training of Teachers is designed to meet the needs of those students who desire a more intensive preparation for teaching than that provided for by the Undergraduate Course. As planned at the present time, the special advanced study may be accomplished during one semester of *resident* graduate work or through graduate work during two summer sessions.

ADMISSION AND REGISTRATION.—1. Any student eligible to graduate standing in the University, may, upon the recommendation or the departments concerned, be permitted to register in the Advanced Course for the Training of Teachers. Provided, that the previous preparation of the student contains an amount of professional study equivalent to that specified in paragraph 4 of the requirements indicated for the completion of the Undergraduate Course for the Training of Teachers.

2. Any student eligible for entrance to graduate standing in the University, whose previous preparation does not contain an amount of professional study equivalent to that specified in paragraph 4 of the requirements indicated for the completion of the Undergraduate Course for the Training of Teachers, may, upon the recommendation of the departments concerned, be permitted to register in the Advanced Course for the Training of Teachers; provided, that such student must complete, in addition to the

indicated requirements of the Advanced Course, an equivalent of such deficiency.

3. Any student who has completed the work of the junior year of any of the colleges of the University, may, upon the recommendation of the departments concerned, be permitted to register in the Advanced Course for the Training of Teachers, during the following summer session. Under ordinary conditions the requirements for the completion of the Advanced Course may be fulfilled during a second summer session, it being understood that in addition the requirements for the completion of the Undergraduate Course are also fulfilled.

REQUIREMENTS FOR COMPLETION.—1. The satisfactory completion of an amount of work equal to at least twelve credits, in addition to the requirements prescribed for the bachelor's degree and for the Undergraduate Course for the Training of Teachers.

2. For those students making special preparation for high school teaching, the twelve credits shall be divided as follows:

Academic subject or subjects..... 8 credits.
Education ..... 4 credits

3. For those students making special preparation for the work of school superintendents and principals, the twelve unit-hours shall be divided as follows:

Education ..... 8 credits
Academic subject ..... 4 credits

4. In connection with the requirements in Education noted under (2) and (3) the student must fulfill such special requirements regarding the observation of teaching, visitation of schools, and practice teaching as may be indicated by the department of Education.

5. For those students making special preparation for the work of critic teachers in normal schools, or of instructors in Education in normal schools or universities, the entire twelve credits must be taken within the Department of Education.

Special Certificates

Upon the fulfillment of the requirements indicated above, and upon the joint recommendation of "fitness" by the department of Education and the other departments concerned, the student shall be recommended by the director of the course to the Presi-

dent of the University, to receive *The Certificate in the Advanced Course for the Training of Teachers.*

University Summer Session

The announcement of the summer session should be referred to for detailed information regarding the courses open to students in the Advanced Course for the Training of Teachers.

TEACHING FELLOWSHIPS

In accordance with the recognized policy of encouraging graduate study in special directions, and for the purpose of inaugurating a scheme for the more thorough and extended preparation for teaching and supervisory positions in the public schools of the state, the Regents of the University have established six special fellowships, known as "Teaching Fellowships." These are awarded in a manner that will lead to the selection of those graduates of the University of Wisconsin, for whom an additional year of special professional training and experience will result in the attainment of a high degree of efficiency for the public school service of the state. Appointments are made upon the recommendation of the Committee on the Training of Teachers and are for a period of one academic year. Each fellowship has an annual value of Two Hundred and Fifty Dollars ($250). The holders of these fellowships devote one-half year to special graduate study within the University, and one-half year to apprenticeship teaching, under supervision, in one of the so-called "cooperating high schools." A further payment of approximately One Hundred and Thirty-five Dollars ($135) is made for the service rendered by each fellow in the cooperating high school.

Further details, concerning the fellowships, may be obtained from the special bulletin of the Course for the Training of Teachers, or from the Director of the Course.

GRADUATES OF NORMAL SCHOOLS

Graduates of the advanced course of the normal schools of the state, admitted to the University, may obtain the University Teachers Certificate, or the certificate in the Advanced Course for the Training of Teachers, by fulfilling the specified requirements in their university course. Such normal school graduates,

when candidates for the bachelor of arts degree must present a minimum of three University credits in education.

SPECIAL LECTURERS

In order that the Course for the Training of Teachers may be maintained and developed in close relation with the practical educational interests of the state, the University aims each year to enlist the cooperation of presidents and professors of the normal schools, superintendents, principals and others engaged in educational work as special lecturers.

THE COLLEGE OF ENGINEERING

FREDERICK E. TURNEAURE, Dean, Professor of Engineering.

ORGANIZATION OF THE COLLEGE

The College of Engineering is organized in the belief that a thorough-going fundamental training is the first essential to a successful engineer, but that this fundamental training may be best secured not alone by theoretical study, but by giving attention as well to the practical application of the principles involved. It is further a leading thought that after the fundamental principles have been mastered, a certain measure of specialization in the main lines of engineering is advisable because of the great development of engineering in recent years, and the various phases which it is rapidly assuming. It is the endeavor of the college to combine a reasonable amount of specialization, during the later years of its courses, with a thorough grounding in the fundamentals during the earlier portions; and in carrying out this plan, it endeavors to make the mathematical and theoretical courses strong in the earlier years, while the drawing and shop courses continue progressively from the beginning to the end. It also introduces sufficient foreign language to enable its graduates to read the professional German and French literature, and aims to give so much of a mastery of the English language as to enable its graduates to present professional subjects with ease, clearness, and effectiveness.

REQUIREMENTS FOR ADMISSION TO THE COURSES LEADING TO THE B. S. DEGREE

Students are admitted either upon examination at the University or upon certificates from accredited schools, except that students from other colleges and universities and adult special stu-

The College of Engineering Circular giving detailed information concerning the college, may be obtained upon application to the Registrar of the University.

dents are admitted in accordance with the provisions stated on pages 112 and 113.

The requirements for the admission of regular students are stated fully on page 95.

Preparation in Algebra for Engineering

All students entering the College of Engineering will be tested in Algebra by class work and by an examination given shortly after the beginning of the first semester. It is essential that students in the engineering courses shall possess a good working knowledge of algebra *at the beginning of their course*, and it is the purpose of the test to secure this by requiring a review of the subject shortly before entering the University. Students failing the test can not continue with regular freshman mathematics, but will be required to take a review of preparatory algebra during the first semester. A special course is provided for this purpose.

In performing the fundamental operations of algebra, such as multiplication and division, the use of parentheses, the solving of numerical and literal equations of the first and second degrees, the simplification of fractions and radicals, and the putting of problems into equations, it is of the first importance that the student should have distinct notions of the meaning and reasons for all that he does, and be able to state them clearly in his own language. He should be able to perform all these operations, even though somewhat complex, with rapidity, accuracy, and neatness. In his preparatory studies the student is advised to solve a great many practical problems and to describe fully the reasons for the steps taken.

REQUIREMENTS FOR ADMISSION TO THE ADVANCED COURSES LEADING TO THE PROFESSIONAL DEGREE

Students entering the advanced four-year courses leading to the professional degree must present credits for at least thirty semester hours of work of college grade, taken in the College of Letters and Science of the University or in a college of recognized standing having entrance requirements similar to those of the University of Wisconsin. This college work must include a full year of each of the following studies: Mathematics, English, and French or German. The exact number of credits to be of-

fered in these studies is not specified, it being expected that the work will follow the usual curriculum of colleges requiring a four-year high school course for admission. Students who take chemistry in their college year will substitute work in the College of Letters and Science of the University for an equivalent amount of chemistry required in the course. The advanced course may also be taken as a five-year course in engineering, the student registering in the College of Engineering for the entire five years. The admission requirements under this arrangement are the same as for the College of Letters and Science.

STUDENT ADVISERS

In the selection and arrangement of studies, all students are under the supervision of advisers. It is the duty of the advisers to issue class cards at the opening of each semester, admitting students to their classes, to receive the regular semester reports from instructors, and special reports on deficient students, and to report to the faculty all cases requiring special action.

Reports to parents or guardians on the work of students are sent from the Registrar's office at the end of each semester.

FEES AND EXPENSES

Tuition for residents of the State of Wisconsin	FREE
Tuition for non-resident students—per semester	$35 00
General fee per semester	17 00
General fee for four weeks summer term, shop or field work	7 00
Assaying fee (Mining 20)	15 00

The fees for graduate students are the same as for under graduate students, except the incidental fee wnich is $12.00.

A laboratory fee of $2 per unit-hour (two hours per week of actual work) per semester is charged in all the engineering laboratories, and for the use of surveying instruments in the field. Students taking laboratory theses are charged a fee of $5.

Students working in any of the other laboratories of the University are also required to pay a fee or to make a deposit to cover the cost of the materials and repairs to instruments used by them.

At the beginning of the freshman year, students must be prepared to meet an expenditure of about $70 for laboratory fees, drawing instruments, textbooks, and military uniform. For the second semester these expenses will not exceed $10. For subsequent years the fees and textbooks will amount to from $15 to $20 per semester.

Rooms, furnished and unfurnished, can be obtained in the city at reasonable rates. The cost of board in clubs is from $3.50 to $4.00 a week; in private families from $4.00 to $5.00 a week.

EQUIPMENT

Buildings

The work of the college is carried on in five large buildings. The main building is a four-story structure built for the special use of the College of Mechanics and Engineering. It contains the offices, recitation and drawing rooms, the engineering library and laboratories for work in mechanical engineering, steam, and the testing of materials. A second large building of simple construction contains the electrical laboratories and the various departments for shop instruction. A third building contains the laboratories for chemical engineering. Laboratory work in hydraulics is provided for in a large concrete building situated on the shore of Lake Mendota. The mining building contains the ore dressing and assaying laboratories.

For chemistry the engineering students go to the Chemical Building, for physics and other natural sciences to Science Hall, and for language, mathematics, and other similar work, to the literary halls of the University. In this way the students of engineering come into daily contact with the students in the other courses, to the great advantage of all classes.

Libraries

For a general account of the library facilities of the University see Index. The engineering library is housed in the main engineering building, where reading-room facilities are provided for about one hundred students. The collection of technical books is very complete and includes files and current numbers of about one hundred and seventy-five periodicals.

Laboratories and Apparatus

The engineering laboratories are well equipped for purposes of instruction and investigation.

Bacteriological Laboratories.—For a description of these see Index.

The Bridge Engineering Department owns several autographic extensometers and a deflectometer for determining bridge stresses under moving train loads. The department also possesses a large French model of a skew arch bridge, several large size iron models of bridge joints, a good collection of stereotomy models, and a large number of photographs, drawings, and lantern slides illustrating details, erection methods, and complete structures of a great variety of design.

Chemical Engineering and Applied Electrochemistry Laboratories.—In the Chemical Engineering Building are laboratories for instruction in chemical technology and applied electrochemistry. Two rooms are equipped for technical gas and fuel examinations, the equipment comprising all standard forms of analytical apparatus, gas and fuel calorimeters, and pyrometers. Steam stills, evaporators, centrifugals, vacuum dryers, digesters, vacuum and pressure pumps, melting, roasting, and calcining furnaces and other similar apparatus are installed for the study of chemical manufacture.

In the crushing and grinding room are various commercial types of course and fine crushers and disintegrators for treatment of ores and other raw materials. Magnetic, electrostatic, and other forms of separators are included in the equipment.

The applied electrochemistry equipment comprises a great variety of electrochemical appliances, a complete electroplating and refining room, battery room, two electric furnace rooms with various types of furnaces and source of power, both alternating and direct, aggregating over 250 horse-power.

The Electrical Laboratories comprise a dynamo laboratory, a high potential laboratory, a photometry laboratory and a standards laboratory.

These are all housed in the same building, and have recently been extensively remodeled. Their equipment is unusually complete and every facility is offered for efficient work. The Department of Electrical Engineering co-operates with the Wiscon-

sin Railroad Rate Commission in the use of its laboratories for standardizing work.

THE HYDRAULIC LABORATORY, which occupies its own special building, is located on the shore of Lake Mendota. The facilities, therefore, are especially good for studying problems where large quantities of water under low heads are required. The university water works pumping station and pressure storage tank house, which immediately adjoin the hydraulic laboratory, provide a water supply under heads up to about 170 feet. The laboratory is unusually well equipped. It has a thirty-inch centrifugal pump furnishing up to 35,000 gallons per minute, five concrete measuring chambers with a total capacity of about 10,000 cubic feet, various weir boxes and weirs, pipes of different materials and sizes, Venturi, and meters of the disc and piston type, turbines, overshot and tangential wheels, pumps of various types, including two air lift pumps, hydraulic rams, and a full supply of apparatus designed for experimental purposes.

THE MACHINE SHOP affords excellent facilities for mechanical practice. It embraces a main machine room properly equipped; a carpenter shop supplied with wood-working machines; a forge room provided with forges and their equipment with blast and exhaust fan and annealing and case-hardening furnace; a foundry room whose equipment consists of a cupola, brass furnace, and core oven with the necessary small tools; a wood-work room supplied with benches, carpenter tools, and wood turning lathes; and a pattern room furnished with the requisite tools.

MINING AND METALLURGICAL LABORATORIES.—The new assay laboratories include a large furnace room, a chemical laboratory and balance room, equipped with all the important types of assay apparatus. Ore dressing laboratories are still under construction.

THE STEAM AND GAS ENGINEERING LABORATORY.—This laboratory is well equipped with a variety of steam and gas engines, specially arranged for experimental work, and for demonstration of the principles discussed in the class room. The most important of these are a fifty horse-power cross compound steam engine.

There is also installed a fifteen-ton refrigerating plant, consisting of a Corliss engine direct-connected to a horizontal double-acting ammonia compressor. With the above compressor there are installed double pipe condensers and brine coolers, brine tanks, and brine coils.

This laboratory also contains a twenty-five kilowatt steam turbine, a fifty horse-power two-stage air compressor directly connected to a compound condensing engine equipped with the Meyer valve gear; also various other types of steam, gas, gasoline, and hot air engines. The laboratory is well equipped with a large variety of smaller apparatus and appliances for fuel, gas, oil testing, etc.

Transmission dynamometers, belt testing machines, gear transmissions, friction testing machines, etc., are provided for experimental work in the transmission of power.

Excellent facilities are also provided for carrying on engineering research work. Special facilities are available to graduate students who wish to pursue advanced research work.

THE SURVEYING LABORATORY.—By an agreement with the director of Washburn Observatory, the surveying laboratory shares in the free use of the extensive apparatus belonging to that observatory, including, in addition, to the large equatorial telescope and the meridian circle collimators, transit micrometers, chronograph, sidereal and meantime clocks, zenith telescopes, a transit instrument of the broken type, chronometers, an altazimuth, a universal instrument of the German type, spherometer calipers, and a complete set of meteorological instruments.

In addition to this equipment the surveying laboratory contains all the portable, astronomical, and field instruments needed for extensive triangulation, topographic, hydrographic and railroad surveys, including theodolites, altazimuth, tidal gauge, heliotropes, Kern precise-level and new U. S. C. & G. S. precise-level outfits, sounding apparatus, base-line apparatus, including a new "invar" tape, current meters, transits, compasses, levels, plane-tables, telemeters, and such special instruments as planimeters, pantographs, sextants, computing machines, aneroid barometers, etc.

THE TESTING LABORATORY is supplied with a 600,000 pound hydraulic universal testing machine (designed in the laboratory) taking tension and compression specimens 10 feet and beams 20 feet long; a Riehlé torsion machine taking shafts 15 feet long and 3 inches in diameter; a 50,000 pound Johnson beam machine taking beams 18 feet long; 6 Olson and Riehlé universal machines from 10,000 to 100,000 pounds capacity; a Thurston torsion machine; a Russell impact machine; several small beam and

wire machines; a refrigerator and a gas furnace for freezing and heating tests; a Smith concrete mixer; a good equipment for tests of cement and plain and reinforced concrete; and appliances for testing road-building material.

THE CEMENT LABORATORY contains a full supply of necessary apparatus for making standard tests; baths, self-recording thermometers, Boehme hammer, complete one-thousand-pound Riehlé and Fairbanks testing machines, etc.

THE FOREST PRODUCTS LABORATORY.—There has recently been established at the University the Research Laboratory of the United States Forest Service, in which is conducted the research work of the department relative to the utilization of forest products. This laboratory is conducted in cooperation with the work of the University, and offers especially favorable opportunities for engineering students to carry on advanced study and research pertaining to the utilization of forest products. These opportunities are, primarily, of value to students in Mechanical and Chemical Engineering.

The investigative work and equipment of the laboratory includes the following divisions of work: (1) Timber Physics, (2) Timber Tests, (3) Wood Preservation, (4) Wood Distillation, (5) Wood Pulp, (6) Chemistry of Wood, (7) Engineering. The equipment is complete in all respects, and is such that it is possible to approximate commercial conditions much more closely than is done in the ordinary laboratory work.

Detailed information is contained in a special circular, which will be furnished on request.

PAVING MATERIAL MUSEUM.—A beginning has been made toward securing an exhibit of paving supplies and samples of both old and new pavements for use in the course on Roads and Pavements.

THE ENGINEERING MUSEUM contains a collection of models illustrating problems in descriptive geometry, stereotomy and kinematics, besides many models of bridges and hydraulic structures. There are also numerous industrial exhibitions of engineering interest and value.

A further description of the engineering laboratories and museums may be found in the separate bulletin issued by the College of Engineering.

COURSES OF STUDY AND DEGREES

Courses Leading to the B. S. Degree

The College of Engineering offers six systematic four-year courses leading to the B. S. degree.

CIVIL ENGINEERING.
MECHANICAL ENGINEERING.
ELECTRICAL ENGINEERING.
APPLIED ELECTROCHEMISTRY.
CHEMICAL ENGINEERING.
MINING ENGINEERING.

Students who complete any of the above four-year courses are graduated with the degree of *Bachelor of Science*, the diploma containing a specific designation of the course taken.

Advanced Courses Leading to the Professional Degree

Five advanced four-year courses leading to the professional degree are offered. Students are admitted to these courses on presentation of the equivalent of the freshman year in the College of Letters and Science as specified on page 328. These courses are as follows:

CIVIL ENGINEERING.
MECHANICAL ENGINEERING.
ELECTRICAL ENGINEERING.
CHEMICAL ENGINEERING.
MINING ENGINEERING.

Graduates of these advanced courses will receive the professional degrees of *Civil Engineer, Mechanical Engineer, Electrical Engineer, Chemical Engineer, and Engineer of Mines.*

Graduate Work

The graduate work in the College of Engineering is a part of the Graduate School of the University, and is in charge of an Administrative Committee. Excellent opportunities are offered in the various departments for advanced theoretical work and

for research. A special fund is available to be devoted exclusively to experimental work in the engineering laboratories.

The degrees of *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer*, *Chemical Engineer*, and *Engineer of Mines* are conferred as second degrees upon Bachelors of Science in the Civil, Mechanical, Electrical, Chemical, and Mining Engineering courses respectively, (a) upon engineering graduates of approved institutions who pursue advanced professional study at the University for a period of not less than one year, and present a satisfactory project or thesis; or (b) Upon graduates of the College of Engineering of the University of Wisconsin who have spent three years in professional work, at least one of which must have been in a position of responsibility, and who present a satisfactory thesis.

The degrees of *Master of Science* and *Doctor of Philosophy* are conferred upon graduates of the engineering courses under the same requirements as apply to graduates of the College of Letters and Science. For a statement of these requirements see Index under Degrees.

Six-Year Courses Leading to the B. A. Degree and an Engineering Degree

By properly arranging their elective studies, students in the College of Letters and Science secure their *B. A.* degree at the end of four years, and the *B. S.* degree in engineering in two additional years. These students will register in the College of Letters and Science during the first four years of residence. They will elect during their collegiate course the studies of the first two years of the engineering course which they plan to pursue later, with the exception of shop work. This may be taken as an extra study, or may be taken during vacation time. Upon receiving the *B. A.* degree they will be admitted as juniors in the College of Engineering.

By utilizing the opportunities offered in the summer session students may in most cases secure the professional degree at the end of the sixth year.

Modern Language Requirements in all Engineering Courses*

1. When the entrance language requirement is fulfilled (see Index): There are required 8 semester hours in French or German. (When French or German is offered for entrance, then the same language should preferably be continued in the University.)

2. When the entrance language requirement is not fulfilled; Students who present the required number of units for entrance, and who are graduates of accredited schools, will be admitted without a preparation in language, but subject to a condition in the same. In this case there are required 16 semester hours in French or German. If French be taken and an average mark of 85, or over, be made in the first 8 hours, then the remaining 8 hours may be taken in another language.

Two or three years of high school Latin will be accepted as satisfying one-half the entrance requirement in language.

Summer Vacation Work

All engineering students are required to take summer vacation work in addition to the work of the four academic years. For civil engineering students this work consists of four weeks of field work, following either the sophomore or junior year. For mechanical, electrical, and chemical engineers four weeks of shop work is required. The mining engineers are required to take six weeks of surveying, following either the freshman or sophomore year, and class work in mining and geology, following the junior year.

Inspection Trips

Inspection trips, aggregating a week or ten days, are required of all engineering students during the junior and senior years. These trips are arranged for by the various committees, and industries which best illustrate the work of the course are inspected. The students are accompanied by members of the instructional staff.

---

*For satisfactory reasons, the Faculty will permit the substitution of Spanish for French or German.

Non-Resident Lecturers

It is the practice of the college to invite each year a number of prominent engineers to deliver one or more lectures before the student body on various phases of engineering practice. The purpose of these lectures is to enliven the interest of the student, and to broaden his horizon rather than to give specific instruction.

OUTLINE OF ENGINEERING COURSES

CIVIL ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester		Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Chemistry 2	General Chem. and Qual. Analysis	3
Drawing 1	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

Second Semester		
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Anal. Geometry	5
Chemistry 2	General Chem. and Qual. Analysis	3
Drawing 2	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

SOPHOMORE YEAR

First Semester		Credits
Mathematics 104	Differential and Integral Calculus	5
Physics 51	General Lectures and Lab. Practice	5
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr. 3	Elementary Surveying	4
Drawing 3	Descriptive Geometry	3
	Total	18

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 52	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr 4.	Advanced Surveying	3
Railway Engr. 1	Railway Curves	2
	Total	20

* German 2E. or French 5E.

Summer work: Top. Engr. 106. Trigonometrical Survey, 4 weeks. Maybe taken at the end of the Sophomore or Junior year.

Note: In reckoning the hours per week required for various studies, two hours of laboratory, drawing room, field or shop work count as one hour of class room work, which is the unit in this outline.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 51	Materials of Construction	2
Structural Engr. 1	Structural Details	2
Railway Engr. 2a	Railway Location and Construction	2
Railway Engr. 2b	Practice in Field and Office Work	3
Hydraulic Engr. 1	Hydraulics	3
*A Steam Engr. 7	Engines and Boilers, 2 credits	3
*A Steam & Gas Engr. 127	Calibration of Instruments, 1 credit	
*B Chemistry 11	Quantitative Analysis, 3 credits	
	Total	20

Second Semester		
Mechanics 52	Materials of Construction	2
Railway Engr. 3	Maintenance of Way	2
Railway Engr. 110	Masonry Construction	2
Structural Engr. 2	Bridge Stresses	4
Structural Engr. 3	Roof Trusses and Plate Girders	3
Steam & Gas Engr. 127	Calibration of Instruments	1
Hydraulic Engr. 110	Hydrology	2
*A Railway Engr. 106	Railway Design, 2 credits	5
*A †Astronomy 6	Astronomical Practice, 3 credits	
*A ††Top. Engr. 105	Elementary Geodesy, 3 credits	
*B Chemistry 14	Water Analysis, 5 credits	
	Total	21

Summer work: Trigonometrical Survey, 4 weeks. *May be taken at the end of the Sophomore or Junior year.

SENIOR YEAR

First Semester		Credits
Structural Engr. 105, 106	Reinforced Concrete Arches and Dams	4
Structural Engr. 4	Riveted and Pin-connected Trusses	4
Hydraulic Engr. 111	Water Supply	3
Electrical Engr. 105	Testing Direct Current Machinery	1
Electrical Engr. 106	Elements of Electrical Engr.	2
‡Electives		6
	Total	20

Second Semester		
Railway Engr. 111	Substructures	1
Hydraulic Engr. 114	Rivers and Canals	1
Electrical Engr. 105	Testing Direct Current Machinery	1
Electrical Engr. 106	Elements of Electrical Engr.	2
Engr. Contracts 1	Contracts and Specifications	2
‡Thesis and Electives		11
	Total	18

†Astronomy 6 or Top. Engr. 105.

*A or B. Option B should be selected by students specializing in sanitary engineering.

‡Bacteriology 1 and 3, 6 credits, to be taken by students specializing in sanitary engineering.

ADVANCED CIVIL ENGINEERING COURSE

Leading to the Degree of C. E.

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing	3
Physics 51	General Lectures and Lab. Practice	5
Top. Engr. 2	Elementary Surveying	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Chemistry 1	General Chemistry	5
Drawing 2	Elements of Drawing	3
Physics 52	General Lectures and Lab. Practice	5
Top. Engr. 2	Elementary Surveying	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential Calculus	4
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Drawing 3	Descriptive Geometry	3
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr. 3	Elementary Surveying	4
Steam Engr. 7	Engines and Boilers	2
Steam and Gas Engr. 127	Calibration of Instruments	1
	Total	20

Second Semester		
Railway Engr. 1	Railway Curves	2
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 51	Materials of Construction	2
Struct. Engr. 2a	Bridge Stresses	4
Top. Engr. 1	Topographic Drawing and Mapping	1
Top. Engr. 4	Advanced Surveying	3
Steam and Gas Engr. 127	Calibration of Instruments	2
	Total	19

Summer work: Top. Engr. 106, four weeks.

THIRD YEAR

	First Semester	Credits
Hydraulic Engr. 1	Hydraulics	3
Ry. Engr. 2a	Railway Location and Construction	2
Ry. Engr. 2b	Practice in Field and Office Work	3
Political Economy 1	Elements of Economics	3
Structural Engr. 1	Structural Details	2
Electrical Engr. 105	Testing Direct Current Machinery	2
Electrical Engr. 106	Elements of Electrical Engineering	2
Mechanics 52	Materials of Construction	2
	Total	19

Second Semester

Hydraulic Engr. 110	Hydrology	2
Railway Engr. 103	Railway Maintenance	2
Railway Engr. 106	Railway Design	2
Railway Engr. 110	Masonry Construction	2
Political Economy 1	Elements of Economics	3
Structural Engr. 3	Designs and Estimates	3
Electrical Engr. 106	Elements of Electrical Engineering	2
*Astronomy 6	Astronomical Practice	3
*Top. Engr. 105	Elementary Geodesy	
	Total	19

FOURTH YEAR

First Semester

Structural Engr. 105, 106	Reinforced Concrete Arches and Dams	4
Structural Engr. 4	Riveted and Pin-connected Trusses	4
Hydraulic Engr. 111	Water Supply Engineering	3
Elective		5
†Free Electives		5
	Total	21

Second Semester

Railway Engr. 111	Substructures	1
Hydraulic Engr. 114	Rivers and Canals	1
Engr. Contracts 1	Contracts and Specifications	2
Elective and Thesis		11
Free Electives		5
	Total	20

* Astronomy 6 or Top. Engr. 105.

† To be taken preferably in the College of Letters and Science.

MECHANICAL ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester		Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis	3
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Drawing 2	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis	3
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR

First Semester		
Mathematics 104	Differential and Integral Calculus	5
Physics 51	General Lectures and Lab. Practice	5
Drawing 3	Descriptive Geometry	3
Shop Work 4, 5, 6, 7	Machine Work and Tool Making	5
	Total	18

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 52	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	5
	Total	19

*German 2 E or French 5E.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Machine Design 3	Machine Design	5
Steam & Gas Engr. 21	Efficiency of Machine Elements	1
Steam & Gas Engr. 1	Elementary Thermodynamics	5
Shop Work 7, 8	Machine Work and Tool Making	2
	Total	20

Second Semester		
Mechanics 54	Materials of Construction	1
Machine Design 3	Machine Design	5
Steam & Gas Engr. 22	Elementary Steam Laboratory	2
Steam & Gas Engr. 2	Elementary Thermodynamics	4
Hydraulic Engr. 1	Hydraulics	3
Elective		3
Shop Work 7, 9	Machine, Pattern and Foundry Work	3
	Total	21

SENIOR YEAR

First Semester		
Steam & Gas Engr. 105	Steam and Gas Engine Calculations	2
Com'l. Mech. Engr 101	Commercial Mechanical Engineering	3
Electrical Engr. 103	Electrotechnics	3
Electrical Engr. 105	Direct Current Laboratory	2
Steam & Gas Engr. 23	Testing of Heat Engines	2
Hydraulic Engr. 104	Water Power Engineering	3
Thesis and Elective		5
	Total	20

Second Semester		
Steam & Gas Engr. 105	Steam and Gas Engine Calculations	2
Com'l. Mech. Engr. 102	Commercial Mechanical Engineering	2
Electrical Engr. 105	Alternating Current Laboratory	2
Electrical Engr. 103	Electrotechnics	3
Steam & Gas Engr. 124	Advanced Engineering Testing	1
Engr. Contracts 1	Contracts and Specifications	2
Thesis and Elective		8
	Total	20

There is also required four weeks of summer shop work which may be taken during any vacation period.

ADVANCED MECHANICAL ENGINEERING COURSE

Leading to the Degree of M. E.

FIRST YEAR

First Semester		Credits.
Mathematics 102	Trigonometry and Analytical Geom.	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing	3
Physics 51	General Lectures and Lab. Practice	5
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
Mathematics 105	Differential and Integral Galculus	5
Chemistry 1	General Ghemistry	5
Drawing 2	Elements of Drawing	3
Physics 52	General Lectures and Lab. Practice	5
Shop Work 2,3	Bench and Forge Work	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential and Integral Calculus	4
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Drawing 3	Descriptive Geometry	3
Shop Work 3,5,7	Forge, Bench, and Machine Work	4
Top. Engr. 108	General Surveying	3
	Total	19

Second Semester		
Machine Design 1	Mechanism	5
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Shop Work 4,5,6,7	Machine Work and Tool Making	3
Elective		5
	Total	20

THIRD YEAR

First Semester		Credits
Machine Design 3	Machine Design	5
Steam & Gas Engr. 1	Elementary Thermodynamics	5
Mechanics 54	Materials of Construction	1
Steam & Gas. Engr. 21	Efficiency of Machine Elements	1
Electrical Engr. 103	Theory of Direct Currents	3
Electrical Engr. 105	Direct Current Laboratory	2
Shop Work 7, 8	Machine Work and Tool Making	3
	Total	20

Second Semester		
Machine Design 3	Machine Design	5
Steam & Gas Engr. 2	Elementary Thermodynamics	4
Hydraulic Engr. 1	Hydraulics	3
Electrical Engr. 105.	Alternating Current Laboratory	2
Electrical Engr. 103	Elem. Applied Alternating Currents	3
Steam & Gas Engr. 22	Elementary Steam Laboratory	2
Elective		2
	Total	21

FOURTH YEAR

First Semester		
Steam & Gas Engr. 105	Steam and Gas Engine Calculations	2
Com'l. Mech'l Engr. 101	Commercial Mechanical Engineering	3
Political Economy 1	Elements of Economics	3
Hydraulic Engr. 104	Water Power Engineering	3
Steam & Gas Engr. 23	Testing of Heat Engines	2
Elective and Thesis		7
	Total	20

Second Semester		
Steam & Gas Engr. 105	Steam and Gas Engine Calculations	2
Com'l Mech'l. Engr. 102	Commercial Mechanical Engineering	2
Political Economy 1	Elements of Economics	3
Engr. Contracts 1	Contracts and Specifications	2
Steam & Gas Engr. 124	Advanced Engineering Testing	1
Elective and Thesis		10
	Total	20

There is required four weeks of summer shop work which may be taken during any vacation period.

ELECTRICAL ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester		Credits
*German 2E *French 5E	Freshman German Freshman French	4
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chem. and Qualitative Analysis	3
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
*German 2E *French 5E	Freshman German Freshman French	4
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 2	General Chem. and Qualitative Analysis	3
Drawing 2	Elements of Drawing	3
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR

First Semester		
Mathematics 104	Differential and Integral Caculus	5
Physics 51	General Lectures and Lab. Practice	5
Machine Design 1	Mechanism	4
*Top. Engr	Elementary Surveying	3
Shop Work 4, 5	Machine Work	2
	Total	19

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 52	General Lectures and Lab. Practice	5
Mechanics 1 Mechanics 2	Statics Mechanics	5
Drawing 3	Descriptive Geometry	3
Elective		2
	Total	19

*German 2E or French 5E.

Vacation Shop Work. { Tool Making, 2 credits. / General Shop Work, 2 credits.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Electrical Engr 101	Electromagnetism	4
Steam and Gas Engr.6	Thermodynamics	3
Machine Design 2	Machine Design	3
*Physics 54	Electrical & Magnetic Measurements	3 or 2
*Mathematics 110	Higher Mathematics	
†Political Econ.8a	Accounting	
	Total	20 or 19

Second Semester		
Electrical Engr.101	Electromagnetism	2
Elect.Engr. 111	Elementary Alternating Currents	3
Elect.Engr. 102	Testing Direct Current Mach.(Lab.)	2
Steam and Gas Engr.22	Elementary Thermodynamics (Lab.)	2
Steam and Gas Engr.6	Thermodynamics	3
Hydraulic Engr.1	Hydraulics	3
*Machine Design 2	Machine Design, 2 credits	5 or 6
*English 9	Technical Composition, 3 credits	
†English 4	Commercial Correspondence, 2 credits	
†Political Econ.1	Elements of Economics, 4 credits	
	Total	20 or 21

SENIOR YEAR

First Semester		
Hydraulic Engr.104	Water Power Engr.	3
Elect.Engr.121	Electrical Applications	5
Elect.Engr.112	Testing Alternating Cur.Mach.(Lab.)	2
*Elect.Engr.125	Conference, 2 credits	9
*Elect.Engr.113	Alternating Current Mach.3 credits	
*Elect.Engr.102	Testing Direct Cur. Dyn. (Lab.) 1 cred.	
*Elect.Engr.104	Design of Direct Current Dyn.1 cred.	
*Steam and Gas Engr.23	Elem.Thermodynamics (Lab.), 2 cred.	
†Elect.Engr.119	Alternating Current Machinery 3 cred.	
†Political Econ.8	Business Organization.2 credits	
†Political Econ.9	Commercial Law, 4 credits	
Thesis		1
	Total	20

Second Semester		
Elect.Engr.121	Electrical Applications	5
Elect.Engr.112	Testing Alternating Cur.Mach.(Lab.)	2
*Engr.Contracts 1	Contracts and Specifications. 2 cred.	13
*Elective and Thesis	8 Credits	
*Elect.Engr.113	Alternating Current Mach..3 cred.	
†Political Econ.8d	Business Organization, 2 credits	
†Elect.Engr. 125	Conference, 2 credits	
†Elective and Thesis	9 Credits	
	Total	20

*Option A. Option A is intended primarily for students who expect to follow the technical side of Electrical Engineering: Physics 54 or Mathematics 110.

†Option B. Option B is intended for those students who expect to interest themselves more particularly in the business or commercial side.

Either Option A or Option B must be adhered to throughout the Junior and Senior years.

Electrical Engineering 125 may be taken in either semester of the Senior year.

ADVANCED ELECTRICAL ENGINEERING COURSE

Leading to the Degree of E. E.

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Anal. Geom	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing	3
Physics 51	General Lectures and Lab. Practice	5
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Chemistry 1	General Chemistry	5
Drawing 2	Elements of Drawing	3
Physics 52	General Lectures and Lab. Practice	5
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential and Integral Calculus	4
Mathematics 110	Higher Mathematics	3
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	4
Elective		3
	Total	19

Second Semester		
Drawing 3	Descriptive Geometry	3
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Top. Engr. 108	General Surveying	3
Mathematics 110	Higher Mathematics	3
Shop Work 4.5	Machine Work	2
Elective		2
	Total	20

Vacation Shop Work { Tool Making, 2 Credits. / General Shop Work, 2 Credits.

THIRD YEAR

First Semester		Credits
Elect. Engr. 101	Elementary Electromagnetism	4
Steam and Gas Engr. 1	Elementary Thermodynamics	3
Steam and Gas Engr. 2	Elementary Thermodynamics	2
Machine Design 2	Machine Design	2
Political Economy 1	Elements of Economics	4
Physics 54	General Lecture and Lab. Practice	3
English 4	Technical Composition	3
	Total	21

Second Semester		
Elect. Engr. 101	Elementary Electromagnetism	2
Elect. Engr. 102	Testing Direct Current Dynamos (Lab)	2
Steam and Gas Engr. 1	Elementary Thermodynamics	2
Steam and Gas Engr. 2	Elementary Thermodynamics	1
Machine Design 3	Machine Design	2
Elect. Engr. 111	Fundamental Laws of Altern'g Currents	3
Hydraulic Engr. 1	Hydraulics	3
Steam and Gas Engr. 22	Engineering Testing	2
Elective		3
	Total	20

FOURTH YEAR

First Semester		
Elect. Engr. 102	Testing Direct Current Dynamos (Lab)	1
Elect. Engr. 104	Design of Direct Current Dynamos	1
Elect. Engr. 112	Test. Alternating Current Mach. (Lab).	2
Elect. Engr. 113	Alternating Current Machinery	3
Steam and Gas Engr. 23	Steam and Gas Engine Testing	2
Hydraulic Engr. 104	Water Power Engineering	3
Elect. Engr. 121	Electrical Applications	5
Elective and Thesis		2
	Total	19

Second Semester		
Elect. Engr. 112	Test. Alternating Current Mach. (Lab.)	2
Elect. Engr. 113	Alternating Current Machinery	3
*Elect. Engr. 125	Conference	2
Engr. Contracts 1	Contracts and Specifications	2
Elect. Engr. 121	Electrical Applications	5
Elective and Thesis		5
	Total	19

* Elect. Engr. 125 may be taken in either semester.

CHEMICAL ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester		Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis.	3
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Drawing 2	Elements of Drawing	3
Chemistry 2	General Chemistry and Qual. Analysis.	3
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR

First Semester		
Mathematics 104	Differential and Integral Calculus	5
Physics 51	General Lectures and Lab. Practice	5
Drawing 3	Descriptive Geometry	3
Chemistry 11	Quantitative Analysis	5
	Total	18

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 52	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	4
	Total	18

*German 2E or French 5E.
Summer Course in Chemistry or its equivalent in industrial work.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Steam & Gas Engr. 6	Thermodynamics	3
Machine Design 2	Machine Design	3
Chemistry 120	Organic Chemistry	5
Chemistry 130	Physical Chemistry	2
	Total	20

Second Semester		
Steam & Gas Engr. 6	Thermodynamics	3
Steam & Gas Engr. 25	Engineering Testing	2
Chemistry 130	Physical Chemistry	4
Electrical Engr. 105	Elements of Electrical Engineering	2
Chemical Engr. 11	Chemical Machinery and Appliances	2
Chemical Engr. 12	Fuel Gas and Oil Analysis	2
Elective		5
	Total	20

Inspection tour through industrial establishments.

SENIOR YEAR

First Semester		
Electrical Engr. 106	Elements of Elect. Engr.	2
Electrical Engr. 105	Testing Direct Current Machinery	2
Steam & Gas Engr. 26	Engineering Testing	1
Chemical Engr. 15	Industrial Chemistry	2
Chemical Engr. 116	Applied Thermal Chemistry	2
Chemical Engr. 118	Metallurgy of Iron and Steel	2
Thesis and Electives		9
	Total	20

Second Semester		
Engr. Contracts 1	Contracts and Specifications	2
Chemical Engr. 113a	Municipal Gas Manufacture	2
Chemical Engr. 113b	Power and Fuel Gas Manufacture	1
Chemical Engr. 114	Chemical Manufacture	2
Chemical Engr. 116	Applied Thermal Chemistry	2
Thesis and Electives		11
	Total	20

ADVANCED CHEMICAL ENGINEERING COURSE

Leading to the Degree of Ch. E.

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometry	5
Drawing 1	Elements of Drawing	3
Chemistry 1	General Chemistry	5
Physics 51	General Lectures and Lab. Practice	5
Shop Work 1	Elementary Pattern Making	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Drawing 2	Elements of Drawing	3
Chemistry 1	General Chemistry	5
Physics 52	General Lectures and Lab. Practice	5
Shop Work 2, 3	Bench and Forge Work	1
	Total	19

SECOND YEAR

First Semester		
Mathematics 105	Differential Calculus	4
Drawing 3	Descriptive Geometry	3
Chemistry 120	Organic Chemistry	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Chemistry 11	Quantitative Analysis	3
	Total	20

Second Semester		
Machine Design 1	Mechanism	4
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Chem. Engr. 11	Chemical Machinery and Appliances	2
Electrical Engr. 106	Elements of Electrical Engineering	2
Chemistry Elective		5
	Total	20

Summer course in Chemistry or its equivalent in industrial work.

THIRD YEAR

First Semester		Credits
Chemistry 130	Physical Chemistry	2
Steam and Gas Engr. 6	Thermodynamics	3
Electrical Engr. 106	Elements of Electrical Engineering	2
Electrical Engr. 105	Testing Direct Current Machinery	2
Machine Design 2	Machine Design	3
Political Economy 1	Elements of Economics	4
Elective		4
	Total	20

Second Semester		
Chemistry 130	Physical Chemistry	4
Steam & Gas Engr. 6	Thermodynamics	3
Steam & Gas Engr. 25	Calibration of Instruments	2
Political Economy 1	Elements of Economics	4
Chemical Engr. 12	Fuel, Gas and Oil Analysis	2
Elective		5
	Total	20

FOURTH YEAR

First Semester		
Chemical Engr. 118	Metallurgy of Iron and Steel	2
Steam & Gas Engr. 23	Calibration of Instruments	1
Chemical Engr. 15	Industrial Chemistry	3
Chemical Engr. 116	Applied Thermal Chemistry	2
Chemical Engr. 1	Electrolytic Phenomena	5
Elective and Thesis		7
	Total	20

Second Semester		
Chemical Engr. 113a	Municipal Gas Manufact're&Distribut'n	2
Chemical Engr. 113b	Power and Fuel Gas Manufacture	1
Chemical Engr. 116	Applied Thermal Chemistry	2
Chemical Engr. 114	Chemical Manufacture	2
Engr. Contracts 1	Contracts and Specifications	2
Elective and Thesis		10
	Total	19

APPLIED ELECTROCHEMISTRY COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

First Semester		Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Drawing 1	Elements of Drawing	3
Chemistry 2	General Chem. and Qualitative Anal.	3
Shop Work 1	Pattern Making	1
	Total	19

Second Semester		
*German 2E	Freshman German	4
*French 5E	Freshman French	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Drawing 2	Elements of Drawing	3
Chemistry 2	General Chem. and Qualitative Anal.	3
Shop Work 2	Bench and Forge Work	1
	Total	19

SOPHOMORE YEAR

First Semester		
Mathematics 104	Differential and Integral Calculus	5
Physics 51	General Lectures and Lab. Practice	5
Drawing 3	Descriptive Geometry	3
Chemistry 11	Quantitative Analysis	5
	Total	18

Second Semester		
Mathematics 105	Differential and Integral Calculus	4
Physics 52	General Lectures and Lab. Practice	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Machine Design 1	Mechanism	4
	Total	18

* German 2E or French 5E.
Summer Work in Chemistry or its equivalent in industrial work.

JUNIOR YEAR

First Semester		Credits
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Elect. Engr. 101	Electromagnetism	4
Chemistry 120	Organic Chemistry	5
Chemistry 131	Electrochemistry	4
	Total	20

Second Semester		
Elect. Engr. 102	Direct Current Laboratory	2
Elect. Engr. 101	Electromagnetism	2
Elect. Engr. 111	Alternating Currents	3
Elect. Engr. 115	Alternating Current Laboratory	2
Chemistry 131	Electrochemistry	4
Chem. Engr. 12	Fuel, Gas and Oil Analysis	2
Elective		5
	Total	20

Inspection tour through industrial establishments.

SENIOR YEAR

First Semester		
Chem. Engr. 101	Electrolytic Phenomena	5
Chem. Engr. 15	Industrial Chemistry	2
Chem. Engr. 116	Applied Thermal Chemistry	2
Steam & Gas. Engr. 7	Steam Engineering	2
Steam & Gas Engr. 127	Calibration of Instruments	2
Thesis & Elective		7
	Total	20

Second Semester		
Chem. Engr. 102	Electrothermal Processes and Products.	3
Chem. Engr. 6	Batteries	2
Chem. Engr. 11	Chemical Machinery and Appliances	2
Chem. Engr. 114	Chemical Manufacture	2
Engr. Contracts 1	Contracts and Specifications	2
Thesis & Elective		9
	Total	20

MINING ENGINEERING COURSE

Leading to the B. S. Degree

FRESHMAN YEAR

	First Semester	Credits
*German 2E	Freshman German	4
*French 5E	Freshman French	
*Spanish 2EC	Freshman Spanish	
English 1	English Prose Style. Composition	3
Mathematics 101	Algebra	5
Chemistry 2	General Chemical and Qual. Analysis	3
Drawing 1	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

	Second Semester	
*German 2E	Freshman German	4
*French 5E	Freshman French	
*Spanish 2EC	Freshman Spanish	
English 1	English Prose Style. Composition	3
Mathematics 102	Trigonometry and Analytical Geometry	5
Chemistry 2	General Chem. and Qualitative Analysis	3
Drawing 2	Elements of Drawing	3
Top. Engr. 2	Elementary Surveying	1
	Total	19

Summer School Surveying, six weeks.

SOPHOMORE YEAR

	First Semester	
Mathematics 104	Differential and integral Calculus	5
Physics 51	General Lectures and Lab. Practice	4
Chemistry 11	Quantitative Analysis	5
Geology 6	General Mineralogy	5
	Total	19

	Second Semester	
Mathematics 105	Differential and Integral Calculus	4
Physics 52	General Lectures and Lab. Practice	4
Mining 120	Assaying	3
Geology 6	General Mineralogy	5
Drawing 3	Descriptive Geometry	3
	Total	19

*German 2E, French, 5E or Spanish 2EC.

JUNIOR YEAR

First Semester		Credits
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Steam and Gas Engr. 6	Thermodynamics	3
Steam and Gas Engr. 127	Steam Laboratory	2
Railway Engr. 104	Railway Location	2
Geology 1	General Geology	5
Mining 101	Excavation and Quarrying	3
	Total	20

Second Semester

Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Steam and Gas Engr. 6	Thermodynamics	3
Electrical Engr. 106	Elements of Electrical Engineering	2
Geology 2	Applied Geology	5
Mining 102	Tunneling, Boring and Shaft Sinking	3
	Total	20

Summer Mining Work, six weeks.

SENIOR YEAR

First Semester

Hydraulic Engr. 1	Hydraulics	3
Electrical Engr. 105	Testing Direct Current Machinery	2
Electrical Engr. 106	Elements of Electrical Engr.	2
Geology 7a	Petrology	3
Mining 103	Prospecting and Mine Development	1
Mining 104	Exploitation of Mines	2
Mining 105	Mine Engineering	1
Mining 122	General Metallurgy	3
Thesis		3
	Total	20

Second Semester

Structural Engr. 10	Structural Design	3
Engr. Contracts 1	Contracts and Specifications	2
Geology 111	Economic Geology	5
Mining 105	Mine Engineering	1
Mining 107	Ore Dressing and Coal Washing	3
Mining 123	Metallurgy of Base Metals	3
Thesis		3
	Total	20

ADVANCED MINING ENGINEERING COURSE

Leading to the Degree of E. M.

FIRST YEAR

First Semester		Credits
Mathematics 102	Trigonometry and Analytical Geometr	5
Chemistry 1	General Chemistry	5
Drawing 1	Elements of Drawing	3
Physics 51	General Lectures and Lab. Practice	5
Topographical Engr. 2	Elementary Surveying	1
	Total	19

Second Semester		
Mathematics 104	Differential and Integral Calculus	5
Chemistry 1	General Chemistry	5
Drawing 2	Elements of Drawing	3
Physics 52	General Lectures and Lab. Practice	5
Topographical Engr. 2	Elementary Surveying	1
	Total	19

Summer school surveying, six weeks.

SECOND YEAR

First Semester		
Mathematics 105	Differential Calculus	4
Chemistry 11	Quantitative Analysis	5
Mechanics 1	Statics	3
Mechanics 2	Mechanics of Materials	2
Geology 6	General Mineralogy	5
	Total	19

Second Semester		
Drawing 3	Descriptive Geometry	3
Mining 120	Assaying	3
Mechanics 3	Mechanics of Materials	3
Mechanics 4	Dynamics	2
Mechanics 53	Materials of Construction	2
Geology 6	General Mineralogy	5
Electrical Engr. 106	Elements of Electrical Engineering	2
	Total	20

THIRD YEAR

First Semester		Credits
Mining 101	Excavation and Quarrying	3
Mining 122	General Metallurgy	3
Geology 1	General Geology	5
Steam & Gas Engr. 6	Thermodynamics	3
Electrical Engr. 105	Testing Direct Current Machinery	1
Electrical Engr. 106	Elements of Electrical Engr.	2
Hydraulics 1	Hydraulics	3
	Total	20

Second Semester		
Mining 102	Tunneling, Boring and Shaft Sinking	3
Mining 123	Metallurgy of Copper, Lead, etc.	3
Geology 2	Applied Geology	5
Steam & Gas Engr. 6	Thermodynamics	3
Steam & Gas Engr. 127	Calibration of Instruments	2
Electrical Engr. 105	Testing Direct Current Machinery	1
Structural Engr. 10	Structural Design	3
	Total	20

Summer Mining Work, six weeks.

FOURTH YEAR

First Semester		
Mining 103	Prospecting and Mine Development	1
Mining 104	Exploitation of Mines	2
Mining 105	Mine Engineering	2
Mining 124	Metallurgy of Iron and Steel	3
Geology 7a	Petrology	3
R. R. Engr. 104	Railway Location	2
Elective and Thesis		7
	Total	20

Second Semester		
Mining 105	Mine Engineering	2
Mining 107	Ore Dressing and Coal Washing	3
Mining 225	Advanced Metallurgy	3
Geology 111	Economic Geology	5
Engr. Contracts 1	Contracts and Specifications	2
Elective and Thesis		5
	Total	20

COMBINATION ENGINEERING AND COMMERCE COURSE

By electing the following group of studies in economics, students pursuing the five-year course may get all the essential studies of the Course in Commerce, together with a full engineering course.

First Year: Physiography and Physical Geography, 3 credits.

Second Year: Elementary Economics, 3 credits; Commercial Geography, 3 credits for each of two semesters.

Third Year: Money and Banking and Transportation, 3 credits; Commercial Law, 3 credits.

Fourth Year: Group in Banking and Finance, Transportation, or the Manufacturing Industries, 3 credits; Business Administration, 2 credits.

Fifth Year: Business Administration, 2 credits; Group and Thesis, 4 credits (if the thesis is taken in Commerce).

Elective for Students in the College of Letters and Science

Students who plan to graduate in engineering, after taking a degree in the College of Letters and Science, should aim to make the following elections during the undergraduate course, in order that the engineering course may be completed in two additional years:

Mathematics 101 to 105; Physics 1 or 51 and 52; Chemistry 1 or 2; Mechanical Drawing 1, 2, and 3; Topographical Engineering 2, 3, and 4, or Machine Design 1; Applied Mechanics 1, 2.

It is well also to elect some or all of the freshman and sophomore shop work, as an extra study.

Graduation in More than One of the Engineering Courses

Graduates in any of the engineering courses may graduate in any other engineering course after one year of additional study. Students who contemplate doing this should, however, make their elections, especially in the senior year, with this end in view.

DEPARTMENTS OF INSTRUCTION

The unit of reckoning is one hour of class-room work per week, making a one-hour study. Two hours of drawing, laboratory, field, or shop work (which requires no outside preparation) count as one hour of recitation.

COURSES GIVEN IN THE COLLEGE OF LETTERS AND SCIENCE

For detailed description of courses given in the College of Letters and Science see Index under Astronomy, Bacteriology and Hygiene, Chemistry, English, French, Geology, German, Mathematics, Meteorology, Physics, and Spanish.

COURSES GIVEN IN THE COLLEGE OF ENGINEERING

CHEMICAL ENGINEERING

APPLIED ELECTROCHEMISTRY AND ELECTROMETALLURGY

PROFESSOR BURGESS, DR. WATTS; MR. ASTON.

For Undergraduates

4. Short Course, dealing with principles of electrochemistry and their various industrial applications. *First semester; two lectures a week for first half of semester; one credit; one or two credits of laboratory work may also be taken.* Mr. BURGESS, Mr. WATTS.

6. Batteries. Construction, testing, and operation of primary and storage cells. *Second semester; two or three credits.* Mr. WATTS.

For Undergraduates and Graduates

101. The laws and fundamental principles of electrolysis, with their applications to electroplating, the refining of metals, and electrochemical manufacture. For seniors and graduates. *First semester; five credits.* Mr. WATTS.

102. The electric furnace: its construction, operation, and industrial applications. One lecture and four hours in the furnace room. Prerequisite, course 101. *Second semester; three credits.* Mr. WATTS, Mr. ASTON.

For Graduates

203. Laboratory Work. Lines of experimental investigation in electrochemistry assigned by instructors, together with occasional conferences and written dissertations. Prerequisite, courses 101, 102. *Throughout the year; three or five credits.* Mr. WATTS, Mr. KOWALKE, Mr. ASTON.

CHEMICAL TECHNOLOGY

PROFESSOR BURGESS; MR. KOWALKE, MR. ASTON, MR. MANN.

For Undergraduates

11. Chemical Machinery and Appliances. Crushing, grinding, separation by the wet and dry methods, filtration, distillation, evaporation, drying and refrigeration. *Second semester; two credits.* Mr. BURGESS.

12. Technical Fuel, Gas, and Oil Analysis. Laboratory instruction in the calorimetry and technical analysis of fuels, illuminating and fuel gases and oils, products of combustion, etc. Prerequisite, chemistry 2, 11. *First or second semester; two credits each.* Mr. KOWALKE, Mr. MANN.

12a. Short laboratory course for mechanical and electrical engineers. *Either semester; one credit.* Mr. KOWALKE.

15. Industrial Chemistry. Class room work relating to more important chemical industries. Prerequisite, chemistry 2. *First semester; two credits.* Mr. BURGESS.

For Undergraduates and Graduates

113a. Lectures on municipal gas manufacture and distribution. *Second semester; two credits.* Mr. KOWALKE.

113b. Lectures on the chemistry of power and fuel gas manufactures and distribution. Prerequisite, chemistry 2. *Second semester; one credit.* Mr. KOWALKE.

114. Chemical Manufacture. Laboratory practice co-ordinate with course 101. *Second semester; two credits.* Mr. KOWALKE, Mr. MANN.

116. Applied Thermal Chemistry. Class room instruction on the thermochemistry and thermophysics of combustion, of chemical and metallurgical processes, of drying and evaporation, etc. Heat conduction and radiation in furnaces. Prerequisite, chemistry 2, 11. *Throughout the year; two credits each semester.* Mr. KOWALKE.

117. Technical Pyrometry. Laboratory instruction in the calibration and use of pyrometers; tests of refractory materials, slags, and industrial furnaces. Prerequisite, chemistry 2; physics 51. *First semester, two credits; second semester, one or more credits.* Mr. KOWALKE.

118. Metallurgy of Iron and Steel. Ores, fuels and refractory materials. The manufacture of iron and steel. Rolling mill and foundry practice. Properties of special steels. Prerequisite, general physics and chemistry. *First semester; two credits.* Mr. ASTON, Mr. BURGESS.

119. Metallography. Laboratory work in the microscopic examination of metals and alloys with occasional lectures on the effect of heat and mechanical treatment on the structure. Prerequisite, general chemistry and physics. *Repeated each semester; two or more credits.* Mr. ASTON, Mr. BURGESS.

120. Constitution of Alloys. Theory of the solidification of alloys based on the solubility relations. Freezing point curves and the application of the phase rule. Supplementary laboratory work in the microscopic examination of metals and alloys. Prerequisite, general physics and chemistry. *Second semester; two or more credits.* Mr. ASTON.

For Graduates

221. Laboratory Work in Chemical Technology. Experimental investigation on lines assigned by instructors, together with conferences and written reports. This work follows and is based upon preparation offered in courses in Chemical Technology 113, 114, 116, 117, 118, 119, 120. Mr. BURGESS, Mr. KOWALKE, Mr. ASTON.

COMMERCIAL MECHANICAL ENGINEERING

PROFESSOR MACK; ASSOCIATE PROFESSOR THORKELSON; SUPERINTENDANT GODDARD; MR. READ.

For Undergraduates and Graduates

101. A study of the commercial side of mechanical engineering, including patent practice and application of patent record research to engineering, the principal factors controlling cost, methods of determining the depreciation of machinery and industrial plants, inventories and valuations of existing properties. *First semester; three credits.*

102. A study of the principles underlying the selection of power units, including load curves, fixed and operating charges, etc., accompanied by lectures on power plant buildings, designs and estimates. Each student is required to prepare complete designs and estimates, in the drawing room, for a small direct current power plant. A course of lectures is also given on shop equipment and layout for manufacturing a given product in a certain quantity. Each student makes a layout of the machinery for a typical plant. These lectures include shop management, methods of remunerating labor and the effects upon the cost of production. *Second semester; two credits.*

DRAWING

PROFESSOR PHILLIPS; ASSISTANT PROFESSOR MILLAR; MR. ORTH, MR. MACLIN, MR. HAY, MR. THOMAS.

For Undergraduates

1. Elements of Drawing. Working drawings; Third angle projection. Lettering, tracing, and blue printing. *Repeated each semester; three credits.* Mr. PHILLIPS, Mr. ORTH, Mr. MACLIN, Mr. HAY, Mr. THOMAS.
2. Elements of Drawing. Working drawings; lettering and sketching; isometric and cabinet drawing. Prerequisite,

drawing 1. *Repeated each semester; three credits.* Mr. PHILLIPS, Mr. ORTH, Mr. MACLIN, Mr. HAY, Mr. THOMAS.

3. Descriptive Geometry. Problems relating to the point, line, and plane. The generation and classification of lines and surfaces; tangent planes to surfaces; plane sections, intersections and developments. Phillips' and Millars' *Descriptive Geometry.* Prerequisite, drawing 1, 2. *Repeated each semester; three credits.* Mr. MILLAR, Mr. ORTH, Mr. MACLIN.

4. Freehand Lettering. A continuation of the lettering work in courses 1 and 2. *Second semester; one credit.* Mr. ORTH.

5. Perspective. Freehand sketching of machine parts in approximate perspective, involving perspectives of circles; common geometric solids; plane sections and intersections of surfaces. *Second semester; two credits.* Mr. ORTH.

ELECTRICAL ENGINEERING

PROFESSOR BEEBE; ASSOCIATE PROFESSOR BENNETT; ASSISTANT PROFESSORS PRICE, SHUSTER, WATSON; MR. BELSKY, MR. DISQUE, MR. GLOVER, MR. HIGSON, MR. KARTAK, MR. MILLER, MR. SANFORD.

For Undergraduates

29. Inspection Trip. A trip to the large industrial centers is made at about Thanksgiving time, for the purpose of inspecting manufacturing plants and great engineering works in operation or under construction and is required of seniors. Includes visits to Milwaukee and Chicago, and an alternate trip includes visits to Niagara Falls, Buffalo and Pittsburg.

For Undergraduates and Graduates

101. Direct Current Machinery. A study of the laws of the electric and the magnetic circuit. The design, construction, and operation of direct current machinery. Prerequisite, physics 51. *First semester, four credits; second semester, two credits.* Mr. WATSON.

102. Direct Current Laboratory. Laboratory tests of generators, motors, and accessory apparatus. Prerequisite, electrical engineering 101. *Begins second semester, two credits; first half of first semester, one credit.* Mr. PRICE and laboratory instructors.

103. Electrotechnics. A short course dealing with the laws of the electric and the magnetic circuit. Design, construction and operation of electro-magnetic machinery. Generation, transmission, distribution, and applications of electricity. Course intended primarily for mechanical engineers. Prerequisite, physics 51. *Throughout the year; three credits.* Mr. BEEBE, Mr. DISQUE.

104. Dynamo Design. In this course are taken up the complete calculation and design of a direct current dynamo. Prerequisite, electrical engineering 101. *First semester, second half; one credit.* Mr. WATSON.

105. Direct Current Laboratory. A short laboratory course, including tests of dynamos and accessory apparatus, intended primarily for civil, chemical, mining, and mechanical engineers. Should accompany electrical engineering 103 or 106. *First semester. Civil Engineers: Last half of first semester; first half of second semester; two credits.* Mr. PRICE and laboratory instructors.

106. Elements of Electrical Engineering. Similar to Electrical Engineering 103. Intended primarily for chemical, civil, and mining engineers. Prerequisite, physics 51. *Repeated each semester; two credits.* Mr. SANFORD, Mr. SHUSTER.

106a. Same as 106. *Begins second semester.* Mr. SANFORD.

111. Alternating Currents. An introductory course dealing with the fundamental laws of alternating currents. *Second semester; three credits.* Mr. WATSON.

112. Alternating Current Laboratory. Laboratory tests and operation of alternating current generators, motors, transformers, meters, and other appliances. Prerequisite, electrical engineering 111. *Throughout the year; two credits.* Mr. PRICE and laboratory instructors.

113. Alternating Current Machinery. A course dealing with the construction and operation of alternating current machinery and appliances. Prerequisite, electrical engineering

111. *Throughout the year; three credits.* Mr. BEEBE, Mr. DISQUE.

114. Advanced Alternating Current Laboratory. Primarily for graduates. Advanced laboratory tests with alternating current machinery. Prerequisite, electrical engineering 112. *First semester; two credits.* Mr. PRICE.

115. Alternating Current Laboratory. A short course primarily for mechanical engineers. Prerequisite, electrical engineering 105. *Second semester; two credits.* Mr. PRICE and laboratory instructors.

119. A course in alternating current machinery primarily for students choosing option B of the electrical engineering course. Prerequisite, electrical engineering, 111. *First semester; three credits.* Mr. BEEBE.

121. Electrical Applications. A combined course in electrical applications is offered according to the following arrangement:

FIRST SEMESTER

a. Illumination and Photometry. *One and one half credits.* Mr. BENNETT, Mr. KARTAK.

b. Central Stations. *One and one half credits.* Mr. SHUSTER.

f. Electrochemistry. *One credit.* Mr. WATTS.

e. Insulation. *One credit.* Mr. BENNETT, Mr. KARTAK.

SECOND SEMESTER

d. Electric Railway. *One and one half credits.* Mr. SHUSTER.

c. Transmission and Distribution. *One and one half credits.* Mr. BENNETT.

g. Telegraphy and Telephony. *One credit.* Mr. BENNETT, Mr. KARTAK.

h. Industrial Applications. *One credit.* Mr. SHUSTER.

This course aims to present the fundamental principles underlying each of the subjects named. Arrangements may be made for further work in any of the subdivisions, and such advanced work may be combined with thesis work at the discretion of the class adviser and the instructor in charge of the particular subjects in which the advanced

work is selected. May accompany electrical engineering 103 or 106. *Throughout the year; five credits.*

122. Electrical Testing. Laboratory course in general testing of telephones, telegraph, and electrical signaling devices. Location of faults and grounds. Calibration of various types of instruments by engineering methods. Prerequisite, electrical engineering 103, 106, 111. *Second semester; one or two credits.* Mr. BENNETT, Mr. KARTAK.

124. Central Station Design. The design of electrical power plants for city public service, isolated plants, and electric railway service. Complete reports of calculations and drawings. Prerequisite, electrical engineering 121b. *Second semester; two credits.* Mr. SHUSTER.

125. Conference. Presentation and discussion of papers dealing with various phases of electrical engineering. Open to all seniors and graduates in Engineering. Once a month the class meets with the Madison section of the American Institute of Electrical Engineers. *First and second semesters; two credits.* Mr. BENNETT, Mr. DISQUE.

126. Thesis. Wide latitude is given in the choice of a thesis subject. The aim is to develop the student's initiative, originality, and perseverance by a thorough investigation of some problem in which he is interested and which requires him to vigorously exercise his abilities. The problem may be in original research, a design, a test of apparatus, library or statistical work. *Throughout the year; maximum for seniors—five credits.*

For Graduates

230. Illuminating Engineering. A course for graduates. Principles of artificial lighting. Production of light. Physics of light energy, photometric measurements. Characteristics of illuminants and design of lighting systems. *Throughout the year; three credits.* Mr. BENNETT.

231. Transmission and Distribution of Power. A graduate course dealing with the various problems of transmission and distribution circuits. *Throughout the year; three credits.* Mr. BENNETT.

232. Advanced Alternating Current Theory. A graduate course dealing with transient phenomena, traveling, and station-

ary waves, electromagnetic radiation, and similar related matters. The analytical work is supplemented by experimental work where possible. *Throughout the year; three credits.* Mr. BENNETT.

233. Electric Railway Engineering. An advanced course dealing with the principles underlying electric railway problems. *Second semester; three credits.* Mr. SHUSTER.

ENGINEERING CONTRACTS AND SPECIFICATIONS

PROFESSOR PENCE; MR. BURRITT.

For Undergraduates

1. Engineering Contracts and Specifications. The law of contracts as applied to engineering work, including the preparation of engineering specifications. *Second semester; two credits.* Mr. PENCE, Mr. BURRITT.

FORESTRY AND WOOD TECHNOLOGY

MR. CLINE, MR. DUNLAP, DR. HAWLEY, MR. TIEMANN, MR. WEISS, MR. WINSLOW, MR. SURFACE.

For Undergraduates and Graduates

101. General lectures on forestry and forest utilization: History of forestry; descriptive forestry, and general requirements of the principal wood-using industries. *First semester; two credits.* Mr. DUNLAP.

102. Course of lectures dealing with the technical problems of the wood-using industries.

Structures and properties of Commercial Woods. Lectures dealing with the identifications of commercial timbers and the properties which fit them for different uses.

Grading Rules and Specifications for Timber Products. Lectures dealing with the general problems of grading timbers used in structural work.

Seasoning. The air-seasoning of large timbers and the kiln-drying or other artificial seasoning of wood products consumed by wood-using industries.

Wood Preservation. The structure and properties of wood as regards resistance to destructive agencies; conditions of deterioration; preservative process, including surface applications and impregnation with antiseptic materials; theory and effect of pressure in treatment; commercial plants, etc.

Wood Distillation. Principals, processes, and products of hardwood and softwood distillation with special regard to utilization of waste in the lumber industry.

Pulp and Paper Trades. Raw material of the pulp and paper industry. Processes of manufacturing pulp with special reference to the utilization of mill and forest wastes. *Second semester; two credits.*

HYDRAULIC AND SANITARY ENGINEERING

PROFESSOR MEAD; ASSISTANT PROFESSOR DAVIS; MR. WEIDNER, MR. GARNER.

For Undergraduates

1. Hydraulics. The elementary principles of the mechanics of fluids and the theory, calibration, and use of instruments for hydraulic measurements. Recitations, lectures and laboratory work. Prerequisite, mechanics 1, 2. *Repeated each semester; three credits.* MR. DAVIS, MR. WEIDNER.

For Undergraduates and Graduates

102. Hydrometry. Principles and practice of hydraulic measurements and tests of hydraulic machinery, including study of instrumental errors, methods of analysis of data, and the determination of experimental coefficients and empirical formulas. Prerequisite, course 1. *First semester; two credits.* MR. DAVIS.

103. Experimental Hydraulics. Laboratory investigation of the relation of experimental results to the theory of hydraulic machinery and of the flow of water under various conditions. The special field to be studied may be selected by the student with approval of the instructor. Prerequisite, courses 1, 102 (courses 102 and 103 may be taken simultaneously). *Repeated each semester.* Mr. MEAD, Mr. DAVIS, Mr. WEIDNER.

104. Water Power Engineering. The theory, investigation and development of water power. Prerequisite, course 1. *First semester; three credits.* Mr. MEAD, Mr. GARNER.

105. Hydraulic Machinery. The theory of hydraulic motors, pumps, etc., and their economic selection and installation. Prerequisite, course 1. *Second semester; two credits.* Mr. MEAD, Mr. GARNER.

110. Hydrology. Water in its physical, geological, and meteorological relations as applied to water power, water supply, irrigation, drainage, and sanitary work. *Second semester; two credits.* Mr. MEAD, Mr. GARNER.

111. Water Supply Engineering. Theory, development and improvement of water supplies for domestic, manufacturing, and fire service. Prerequisite, courses 1, 110. *First semester; three credits.* Mr. MEAD, Mr. GARNER.

112. Sewerage, Drainage, and Irrigation. Theory and practice of sanitary and agricultural drainage, sewage disposal and application of sewage and water to irrigation of land. Prerequisite, courses 1, 110. *Second semester; three credits.* Mr. MEAD, Mr. DAVIS, Mr. GARNER.

113. Hydraulic Design. First semester: Investigation of water supply for power, irrigation or municipal purposes. Second semester: Design of various features of hydraulic work or sanitary work. Four hours per week in drafting room. Prerequisite, first semester, courses 1, 110; second semester, courses 1, 110, 113, and 104, 111, or 112. *Two credits.* Mr. MEAD, Mr. GARNER.

114. Rivers and Canals. Theory and practice of improvements of internal waterways and harbors. Prerequisite, course 1. *Second semester; one credit.* Mr. MEAD, Mr. GARNER.

Thesis. (a) Students taking experimental work for a thesis subject should fulfill the requirements of course 103.

(b) Students taking the design of hydraulic or sanitary works for a thesis subject should fulfill the requirements of course 113.

MACHINE DESIGN

PROFESSOR MACK; ASSISTANT PROFESSOR KEOWN; MR. READ; MR. COPP.

For Undergraduates

1. Mechanism. The relative motions of machine parts, including belting, toothed gears, cams, chains, ratchets, and linkages. Second semester includes valve gears. Prerequisite, mechanical drawing 1, 2. *First semester; four credits. Second semester; five credits.* Mr. KEOWN, Mr. COPP.
2. Machine Design for Electrical Engineering. A study of mathematical and empirical methods for the design of machine parts and complete machines, with a parallel drawing course conforming to the requirements of modern drawing practice. Prerequisite, machine design 1; mechanics 1, 2. *Beginning first semester; first semester, three credits; second semester, two credits. Beginning second semester; second semester, three credits; first semester, two credits.* Mr. READ.
3. Machine Design for Mechanical Engineering. A continuation of mechanical drawing and kinematics as applied to design. A study of the application of the principles of mechanics to the design of machine elements and complete machines. Prerequisite, machine design 1; mechanics 1, 2. *Throughout the year; five credits each semester.* Mr. MACK, Mr. READ, Mr. COPP.
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. Prerequisites, first semester of machine design 2. *Second semester; two credits.* Mr. READ.
6. Patent Office Drawing. A course giving practice in the preparation of drawings required by the U. S. Patent Of-

fice. Prerequisite, mechanical drawing 1, 2. Time arranged upon consultation. *One credit.* Mr. MACK.

For Undergraduates and Graduates

105. Machine Design. Continuation of course 3. Design of special and automatic machinery, jigs, and fixtures. Prerequisite, course 2 or 3. *Two credits.* Mr. MACK.

107. Logging and Wood Working Machinery. Methods and machinery used in logging, wood working machinery and manufacturing processes, and the design of wood working plants. Prerequisite, first semester of machine design 2. *Second semester; two credits.* Mr. KEOWN.

MECHANICS

PROFESSOR MAURER; ASSISTANT PROFESSORS DOOLITTLE, WITHEY; MR. JOHNSON, MR. KOMMERS, MR. MILLER.

For Undergraduates

1. Statics. Prerequisite, physics 51, and student must be taking or have completed mathematics 105. *First ten weeks of each semester; three credits.*

2. Mechanics of Materials. Prerequisite, mechanics 1. *Last eight weeks of each semester; two credits.*

3. Mechanics of Materials (continued). Prerequisite, mechanics 2. *First ten weeks of each semester; three credits.*

4. Dynamics. Prerequisite, mechanics 1. *Last eight weeks of each semester; two credits.*

51, 52, 53, 54. Materials of Construction. Principally laboratory work; assigned readings and reports; also preparation and manufacture of materials. Students must be taking, or have completed, Mechanics 3.

51, for civil engineering students.

52, continuation of 51.

53, for all engineering students, excepting civil.

54, for mechanical engineering students. Prerequisite, 53.

51, 52, 53 *either semester; two credits.* 54 *second semester; one credit.*

For Undergraduates and Graduates

106. Advanced Mechanics of Materials. Inertia circle and ellipse; kern; beam of unsymmetrical section; curved beams; flat plates; thick cylinders, etc. Prerequisite, mechanics 2, 3. *Second semester; two credits.* Mr. MAURER.

107. Advanced Technical Mechanics. Elaboration of course 4 with applications especially to harmonic motion, vibrations and balancing of machines, whirling shafts and rotating discs; dynamical stability, as of flying machines. Prerequisite, mechanics 1, 4. *First semester; two credits.* Mr. MAURER.

108. Materials of Construction. Laboratory research on the various materials. Work in concrete is given only in one semester of each year. Prerequisite, mechanics 51 or 53. *Either semester.* Mr. WITHEY.

109. Graphics. Development of principles of graphic solutions of certain problems in statics and of certain equations relating to beams and framed structures. Inertia curves, deflection curves, combined stress figures, N-polygons, etc. Prerequisite, mechanics 1, 2, 3. *Second semester; two credits.* Mr. DOOLITTLE.

110. Thesis. The materials laboratory is well equipped to furnish thesis work; eight to ten researches on the various materials of construction can be directed each year. For timber tests the equipment of the National Forest Products Laboratory, located on the campus, is also available. Prerequisite, mechanics 51 or 53.

MINING AND METALLURGY

PROFESSORS HOLDEN; ASSOCIATE PROFESSOR HAVARD; Mr. KENNEDY.

For Undergraduates and Graduates

101. Excavation. Earth and rock excavation, dredging, explosives, drilling and blasting, quarrying, plants, methods, and costs. Prerequisite, physics 52. *First semester; three credits.* Mr. HOLDEN.

102. Tunneling, Boring and Shaft Sinking. Methods of driving, ventilating and maintaining railway and other tunnels.

Methods of deep drilling and core boring. Shaft sinking and maintenance in easy and difficult ground. Prerequisite, mining 101. *Second semester; three credits.* Mr. HOLDEN.

103. Prospecting and Mine Development. Mining geology as affecting exploration. Methods of prospecting, exploration and development. Three hours through October and November. Prequisite, mining 102; geology 1. *First semester; one credit.* Mr. HOLDEN.

104. Exploitation of Mines. Methods of mining ore bodies, placers, coal and other minerals. Three hours, December, January and February. Prerequisite, mining 103. *First semester; two credits.* Mr. HOLDEN.

105. Mine Engineering. The design, installation and operation of drainage, ventilating, lighting, haulage and hoisting systems in mines; surface plant; accidents and their prevention; sampling, valuation and reports. Prerequisite, mining 104. *Throughout the year; two credits each semester.* Mr. HOLDEN, Mr. KENNEDY.

107. Ore Dressing and Coal Washing. Principles and practice of ore dressing. Design of concentrating plants, coal breakers and washers. Lectures and laboratory practice. Prerequisite, geology 6; mining 120. *Second semester; three credits.* Mr. HOLDEN, Mr. KENNEDY.

111. Thesis. The development and equipment of a mine, including the design and working drawings of principal structures and machines, with a detailed report. *Throughout the year; four or more credits.*

120. Assaying. Lectures and laboratory practice in the assaying of ores of gold, silver and lead, of matte, bullion, slag and metallurgical by-products. One lecture and four to eight hours laboratory every week. Prerequisite, chemistry 11. *Repeated each semester; two or three credits.* Mr. HARVARD, Mr. KENNEDY.

122. General Metallurgy. The principles of metallurgy including the applications of chemistry in and the mechanical equipment of general metallurgical practice. Three hours of lectures weekly. Prerequisite, chemistry 11. *First semester; three credits.* Mr. HAVARD.

123. The Metallurgy of the Base Metals. Three lectures weekly. Prerequisite, mining 122. *Second semester; three credits.* Mr. HAVARD.

124. The Metallurgy of Iron and Steel. Two lectures weekly. Prerequisite, mining 122. *Second semester; two credits.* Mr. HAVARD.

For Graduates

208. Gold and Silver Mining and Cyanidation. Stamp-milling, fine grinding and amalgamation processes. Cyanidation, methods of dissolving and recovering the precious metals. Prerequisite, mining 122. *Second semester; one or two credits.* Mr. HOLDEN.

225. Metallurgical Chemistry. Slags, alloys, and furnace products; the chemistry and physics of blast smelting and refining and the chemistry of the wet processes. The recovery of values in by-products. *First semester; two credits.* Mr. HAVARD.

RAILWAY ENGINEERING

PROFESSOR PENCE; MR. VAN HAGAN, MR. BURRITT, MR. JESSUP.

For Undergraduates

1. Railway Curves. An introductory course in the computation and field location of simple, compound, and spiral curves. Prerequisite, mathematics 102; topographic engineering 1, 2. *Repeated each semester; two credits.* Mr. BURRITT.

2a. Railway Location and Construction. The theory of field and office work necessary to survey and construct a new railway line and to improve or reconstruct an old one. Prerequisite, course 1. *First semester; two credits.* Mr. PENCE, Mr. BURRITT.

2b. Practice in Field and Office Work. To be taken only in connection with course 2a. *First semester; three credits.* Mr. VAN HAGAN, Mr. JESSUP.

For Undergraduates and Graduates

103. Railway Maintenance. A course in railway maintenance. Prerequisite, courses 1, 2a, 2b. *Second semester; two credits.* Mr. PENCE, Mr. BURRITT.

104. Railway Engineering. A brief course in railway location and construction. Primarily for students in Electrical and Mining Engineering who have previously had practice in surveying. Prerequisite, mathematics 102 (trigonometry). *First semester; two credits.* Mr. VAN HAGAN.

105. Railway Economics. The economics of railway location and improvements; dealing with train resistance, momentum, grades, tonnage ratings and related matters. Prerequisite, courses 1, 2a, 2b, 103. *Repeated each semester; two credits.* Mr. PENCE, Mr. BURRITT.

106. Railway Design. A course in the design of track details, including frogs, switches, yard layouts and minor railway structures, with field work in yard resurveys, staking out structures, etc. In connection with course 103. Prerequisite, courses 1, 2a, 2b. *Second semester; two credits.* Mr. VAN HAGAN, Mr. JESSUP.

107. Advanced Railway Design. The design of railway yards and structures. Prerequisite, course 106. *Repeated each semester; two credits.* Mr. VAN HAGAN.

108. Signaling and Interlocking. A study of railway signaling and train control, including field inspections of interlocking plants and problems in design. Prerequisite, courses 1, 2a, 2b, 103. *Second semester; one credit.* Mr. VAN HAGAN.

110. Masonry Construction. Theory governing the design of masonry structures and foundations. Prerequisite, mechanics 1, 2. *Second semester; two credits.* Mr. VAN HAGAN.

111. Substructures. Ordinary and deep foundation work; lectures and problems. Prerequisite, course 110. *Second semester; one credit.* Mr. VAN HAGAN.

112. Estimates and Valuations. The methods of valuing railway and public utilities properties. In connection with the work of the engineering staff of the Wisconsin Railroad and Tax Commissions. For senior and graduate stu-

dents. *Repeated each semester; two or more credits.* Mr. PENCE, Mr. BURRITT.

Thesis. (a) Location projects; (b) Design problems; (c) State Commission work; (d) Experimental work; (e) Investigations and library studies.

ROADS AND PAVEMENTS

ASSOCIATE PROFESSOR SMITH.

For Undergraduates and Graduates

101. Roads and Pavements. Location, specification and construction of country highways and city pavements. Text, Baker's "Roads and Pavements." *First semester; two credits.* Mr. SMITH.

102. Roads and Pavements. A library study is made of the most practical problems of road construction. Short trips are made to nearby cities for field examinations and reports. Advanced course in roads and pavements. Prerequisite, course 101 or its equivalent in practical experience. *Second semester; two credits.* Mr. SMITH.

SHOP WORK

SUPERINTENDENT GODDARD; MR. CHISHOLM, MR. DABNEY, MR. PAYTON, MR. SCHUMANN, MR. SLADKY, MR. ZURIAN.

For Undergraduates

1. Elementary Pattern Making. Bench and lathe work in wood. Molding and core making. *First semester; one credit.* Mr. CHISHOLM.
2. Bench Work in Iron. Instruction in the use of chisel, file and scraper. *Second semester; one-half credit.* Mr. DABNEY, Mr. SLADKY.
3. Elementary Forge Work. Forging, welding, tempering, and brazing. *Second semester; one-half credit.* Mr. SCHUMANN, Mr. ZURIAN.
4. Lathe Work in Metals. Turning, boring, and thread cutting. *Repeated each semester; one credit.* Mr. DABNEY, Mr. SLADKY.

5. Planing and Milling. Surfacing, slotting, and gear cutting. *Repeated each semester; one credit.* Mr. DABNEY, Mr. SLADKY.

6. Tool Making. Making and tempering taps, reamers, counter-bores, turret lathe tools, etc. Required in Electrical Engineering Course as vacation shop work. Prerequisite, courses 4, 5. *Repeated each semester; two credits.* Mr. DABNEY, Mr. SLADKY.

7. General Shop Work. Building machines, gas engines, etc. Turret lathe practice. Prerequisite, courses 4, 5. *Repeated each semester; four credits.* Mr. DABNEY, Mr. SLADKY.

8. Heat Treatment of Steel. Annealing, hardening, tempering, case hardening. Heat treatment of open hearth and crucible tool steels, steel castings and high speed steel with investigation of effects upon the physical properties of the material. Prerequisite, course 3. *Second semester; one credit.* Mr. GODDARD, Mr. SCHUMANN.

9. Advanced Pattern Making and Foundry Practice. Building up of large patterns and core boxes, sweeping and molding in sand and loam. Care of cupola. Prerequisite, course 1. *Second semester; one credit.* Mr. CHISHOLM, Mr. PAYTON.

10. Industrial Practice for Mechanical Engineering Course. Not less than seven weeks of work, performed outside of the University, preferably under a well-developed system of methods and discipline. Where necessary, equivalent credit may be secured by substituting four weeks of vacation shop work in University Shops. *Four credits.*

11. Industrial Practice for Electrical Engineering Course. Not less than four weeks of work, performed outside of the University, preferably under a well-developed system of methods and discipline. Where necessary, equivalent credit may be obtained by substituting two weeks of vacation shop work in University Shops. *Two credits.*

Required in Mechanical Engineering Course, Nos. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10. Total, 16 credits.

Required in Electrical Engineering Course, Nos. 1, 2, 3, 4, 5, 6, 11. Total, 8 credits.

STEAM AND GAS ENGINEERING

PROFESSOR THOMAS; ACTING PROFESSOR LUDY; ASSOCIATE PROFESSOR THORKELSON; ASSISTANT PROFESSOR CHRISTIE; MR. BLACK, MR. ROWSE, MR. BERGGREN.

For Undergraduates

1. Elementary thermodynamics of perfect gases and vapors as applied to the study of compressed air, gas engines, steam engines, steam turbines, and boilers, followed by a detailed study of fuels, the principles of combustion, boilers, auxiliaries and engines. Prerequisite, physics 51; mathematics 104, 105. *First semester; five credits.* Mr THORKELSON.
2. Continuation of Course 1, including a detailed analysis of the efficiency and economy of various types of steam engines, steam turbines, gas engines and a study of valve gears. *Second semester; four credits.* Mr. THORKELSON.
6. Special Course in Thermodynamics. A special course in the theory and principles underlying the construction, design and operation of steam engines, gas engines, and boilers of various types. Prerequisite, physics 51; mathematics 104, 105. *Throuhout the year; three credits each semester.* Mr. BERGGREN.
7. Course in Steam Engineering for Civil Engineers. An informational course covering the more important types of engines and boilers. Prerequisite, physics 51, 52; mathematics 104, 105. *First semester; two credits.* Mr. BLACK, Mr. ROWSE.

LABORATORY COURSES

21. Efficiency of Machine Elements including screw and gear friction, belt and similar transmission devices, hoisting machines, transmission dynamometers, friction and oil testing, etc. Course to accompany class work in machine design. *First semester; one credit.*
22. Engineering, Testing, including the determination of the efficiencies, losses and characteristics of simple heat en-

gines. Gas and fuel analysis (Chem. Tech. 12a). *Second semester; one credit.*

23. Continuation of Course 22 covering more complex types of heat engines including air compressors, refrigeration machinery, gas producers and engines, superheated steam, steam turbines, boiler plants and other power plants *First semester; two credits.*

25. Engineering Testing, including calibration of instruments, adjustment and testing of simple heat engines. *Second semester; two credits.*

26. Continuation of Course 25 dealing with adjustment operation and efficiency tests of heat engines of various classes, and including boiler and power plant tests. *First semester; one credit.*

For Undergraduates and Graduates

105. Steam and Gas Engine Calculations. A course devoted to the calculations used and problems met in determining sizes and the more important details of steam engines, turbines, boilers, gas engines, producers, etc. Problems are assigned and discussed, and solved in the drawing room. Prerequisite, courses 1, 2. *Throughout the year; two credits each semester.* Mr. LUDY.

108. Heating and Ventilation. An elective study open to all students who have completed courses 1 and 2, or 6. This study covers the principles and theory of modern systems of heating and ventilating buildings of various types and is accompanied by problems involving the designs and specifications for such systems. *First semester; two credits.* Mr. THORKELSON.

109. Internal Combustion Engines. An elective study open to all students who have completed courses 1 and 2, or 6. This study covers the theory and design of gas and gasoline engines, gas producers and such details as the carburetor, governor, ignition device, etc. *Second semester; two credits.* Mr. LUDY.

111. Compressed Air and its Appliances. An elective study open to students who have completed courses 1 and 2, or 6 or 7, and devoted to the theory and principles governing the economical production and various applications

of compressed air. *Second semester; one credit.* Mr. CHRISTIE.

112. Steam Turbines. An elective study open to students who have completed courses 1 and 2 or 6. Lectures and drawing room work on the theory and design of the principal types of steam turbines. *First semester; two credits.* Mr. LUDY.

113. Refrigeration and Refrigerating Machinery. An elective study open to students who have completed courses 1 and 2, or 6 or 7. The principles and methods of producing low temperatures artificially are studied together with the construction, operation, and application of refrigerating machinery. *Second semester; one credit.* Mr. BLACK.

114. Steam Locomotives. An elective study open to students who have completed courses 1 and 2 or 6 or 7. Lectures on the design and construction of the various types of steam locomotives and their performance under different conditions. *Second semester; two credits.* Mr. LUDY.

LABORATORY COURSES

124. Advanced engineering testing consisting of special tests of heat engines, transmission machinery, heating and ventilating installations, power plant and other commercial tests. *Second semester; one credit.*

127. Abridged Course. Calibration of instruments, adjustment, operation, determination of losses and efficiencies of heat engines, including the principal types of steam and internal combustion engines and including power plant tests. *Two credits.*

128. Advanced Laboratory Work. Advanced courses are offered in various lines of experimental work. Stress is laid on original research and investigation. Credit and hours to be arranged according to work taken. Open throughout the year to graduate students, and to other students upon arrangement with their advisers and with the department.

STRUCTURAL ENGINEERING

PROFESSOR TURNEAURE; ASSISTANT PROFESSOR KINNE; MR. PARKER, MR. GLAETTLI.

For Undergraduates

1. Structural Details. The designing and detailing of simple roof trusses in wood and steel. Prerequisite, mechanics 1, 2. *First semester; two credits.* Mr. PARKER, Mr. GLAETTLI.
2. Bridge Stresses. Simple Structures. Analysis of simple bridge and roof trusses by algebraic and graphical methods. Prerequisite, mechanics 1, 2. *Second semester; four credits.* Mr. KINNE, Mr. PARKER.
3. Bridge Design. Roof Trusses and Plate Girders. Design, detail drawings, and estimates of cost and weight of roof trusses and railway plate girder bridges. Prerequisite, structural engineering 1, 2. *Second semester; three credits.* Mr. PARKER, Mr. GLAETTLI.
4. Bridge Design. Railway Bridge Trusses. Design, stress sheet, general drawing, and estimates of cost and weight of riveted and pin-connected railway bridge trusses. Prerequisite, structural engineering 1, 2, 3. *First semester; four credits.* Mr. KINNE, Mr. PARKER.

10. Structural Design. A short general course in the designing of roofs and buildings. For students in mechanical, electrical, and mining engineering. Prerequisite, mechanics 1, 2. *Second semester; three credits.* Mr. KINNE.

For Undergraduates and Graduates

105. Reinforced Concrete. Principles of reinforced concrete construction; analysis and problems in design. Elective for graduates. Prerequisite, mechanics 1, 2. *First semester; two credits.* Mr. TURNEAURE, Mr. PARKER.
106. Arches, Dams and Retaining Walls. Design and analysis of arches, dams and similar structures. Elective for graduates. Prerequisite, structural engineering 105. *First semester; two credits.* Mr. PARKER, Mr. GLAETTLI.

107. Bridge Stresses Statically Indeterminate Structures. Analysis of swing, cantilever, arch and suspension bridges. Elective for senior civil engineers and graduates in civil engineering. Prerequisite, structural engineering 2. *First semester; two credits.* Mr. KINNE.

108. Bridge Stresses. Advanced Theory and Experimental Work. Secondary Stresses in framed structures. Tests on bridges under moving loads. Elective for senior civil engineers and graduates in civil engineering. Prerequisite, structural engineering 2, 107. *Second semester; two credits.* Mr. TURNEAURE.

109. Bridge Design. Swing Bridges. Design of truss, turntable and machinery for railway swing bridges. Elective for senior civil engineers and graduates in civil engineering. Prerequisite, structural engineering 2, 3, 4, 107. *Second semester; two credits.* Mr. KINNE.

111. Reinforced Concrete. Analysis and problems in design. A continuation of structural engineering 5. One two-hour computing period. Prerequisite, courses 105 and 106. *Second semester; one credit.* Mr. PARKER.

TOPOGRAPHIC AND GEODETIC ENGINEERING

ASSOCIATE PROFESSOR SMITH; MR. OWEN, MR. CUTLER, MR. PARKER.

For Undergraduates

1. Topographic Drawing. The work includes the platting of the field notes taken in T. E. 3 and T. E. 4 and some practice in pen and water color topography and contouring. Prerequisite, courses 3, 4. *Throughout the year; one credit each semester.* Mr. SMITH, Mr. OWEN, Mr. CUTLER.

2. Elementary Surveying. Chaining, compass and level work. *Throughout the year; one credit each semester.* Mr. OWEN, Mr. CUTLER.

3. Elementary Surveying. A continuation of course 2, and includes the field and office work of a variety of practical problems in the adjustment and use of the engineer's transit and level. Special emphasis is placed on methods of computation and arrangement of data. Prerequisite,

course 2. *First semester; four credits.* Mr. SMITH, Mr. OWEN, Mr. CUTLER.

4. Advanced Surveying. A continuation of course 3, and includes a study of the higher instruments of precision, and their use in topographic, city, hydrographic, and mining surveys. Prerequisite, courses 2, 3. *Second semester; three credits.* Mr. SMITH, Mr. OWEN, Mr. CUTLER.

For Undergraduates and Graduates

105. Geodesy. A general treatment of the adjustment and use of theodolites and precise levels in geodetic and astronomic surveys. Computations for the adjustment of a quadrilateral, latitude and longitude, etc. are based on the field work in course 106. (Discussion of the figure of the earth.) Prerequisite, courses 3, 4. *Second semester; two or three credits including field work.* Mr. SMITH.

106. Summer School of Surveying at Devils Lake, Wis. Field work for illustrating courses 4 and 105. Each year a portion of the region in the vicinity of Devils Lake, Wisconsin, will be covered by an accurate triangulation, and also by topographic and hydrographic surveys. Survey begins on Thursday of examination week and continues for four weeks. Prerequisite, courses 3, 4. Mr. SMITH, Mr. CUTLER, Mr. PARKER.

107. Advanced Geodesy. Lectures, assigned readings and field work. Discussion of size and figure of the earth. Prerequisite, course 105. *First semester; two credits.* Mr. SMITH.

108. Short Course. Planned to meet the demands of Mechanical Engineering and Electrical Engineering students for a general study of the subject, including the use of both transit and level. *Repeated each semester; three credits.* Mr. OWEN, Mr. CUTLER.

109. Rapid Topography. Adapted for training topographers for the United States Geological Survey. Use of the plane table and aneroid barometer in sketching topography. *Second semester; two credits.* Mr. CUTLER.

110. City Planning. Topographic and Cadastral, lectures, assigned readings on organization of a city engineer's office, city plan, law of resurveys, etc. *Second semester; two credits.* Mr. SMITH.

THE LAW SCHOOL

H. S. Richards, Dean, Professor of Law.

HISTORY

Plans for the organization of the Law School were formulated in 1857, but owing to lack of funds the actual organization was not effected until 1868. The instructional staff was composed of members of the Dane County bar and the judges of the supreme court.

The course of study covered but one year, and no requirements as to admission were exacted. In 1874 candidates for admission were required to pass examinations in the ordinary English branches. In 1881 the course of study was extended to two years and candidates were required to have a fair English education. In 1894 the course was extended to three years. In 1896 the requirements for admission were made the same as in the College of Letters and Science. In 1905 candidates for degrees were required to present additional credits equivalent to the freshman year of the College of Letters and Science. In 1907 the present requirements of credit equivalent to the freshman and sophomore years of the College of Letters and Science became effective. In April, 1907, the regular summer session of the Law School was established. In 1909 by act of the Legislature, the name of the College of Law was changed to Law School to conform to the uniform nomenclature adopted by the Association of American Universities, which provides that the term school shall be applied to any department conferring professional or technical degrees that requires at least two years of college work as preliminary to professional study. At the time of its organization the school occupied rooms in the capitol building. It now occupies a building especially erected for its use in 1893.

OBJECT OF THE COURSE

The Law School offers a course of study covering a period of three years. It is designed to teach the fundamental principles of the English and American law in a thorough manner, and to fit the student for the active practice of the profession.

ADMISSION

Students applying to the Law School may be admitted as are students in other departments by either of two methods:—

First, on certificates from accredited schools or colleges.

Second, on examination at the University.

Applicants for admission to the Law School as candidates for a degree must satisfy the general requirements of the University (see Index under Admission), and in addition, must present credits equivalent to the freshman and sophomore years in the College of Letters and Science. The above requirements may be satisfied by work done in any reputable college or university. Graduates of the regular course in the several state normal schools of Wisconsin will be admitted as candidates for a degree.

Applicants for admission who can satisfy the general entrance requirements will be admitted as unclassified students and entitled to all the privileges of the school in the way of instruction. An opportunity is thus afforded to prepare for the bar examinations in this and other states. In exceptional cases, unclassified students may become candidates for the degree. (See Requirements for Graduation.)

The examinations are conducted at the same time and by the same members of the faculty as the examination of candidates for admission to the College of Letters and Science.

In addition to the other entrance requirements, all candidates for admission to the Law School, whether graduates of accredited high schools or not, are required to take the regular entrance examination in English required for admission to the College of Letters and Science (see Index under Admission), except,

(a) Students of the university who have already passed such examination;

(b) Graduates of other approved colleges and universities. But the faculty may require any student to take additional work in English, if, in their judgment, it is necessary.

Those intending to apply for examination for admission to the first year class, or for advanced standing, should notify the Registrar of the University before the beginning of the year, and apply for directions, as examinations cannot be taken later.

Examinations for admission to the first year class will be held on June 13–14, and September 23–24, beginning at 9 o'clock.

PRE-LEGAL COURSES

The following courses approved by the Association of American Law Schools are suggested for students preparing for the study of law, where only two years is devoted to such work: English (Rhetoric and Composition), two years; Latin or Greek, two years; German or French, two years; Mathematics, or a natural or physical science, one year; History (including English and American Constitutional History), two years; Psychology. If three or more years be devoted to such preparation, additional courses in History, Natural Science, and courses in Philosophy, Political Science, Economics, and Sociology are suggested.

ADVANCED STANDING

Candidates for advanced standing who can comply with the general entrance requirements of the school as above set out will be given equivalent credit for satisfactory work done in other law schools in good standing having a three-year course, upon presenting properly authenticated certificates of such work. The right is reserved to require examinations in all cases where the credits presented are not regarded as equivalent.

Students who have been graduated from the College of Letters and Science, and who, while students in that college, have elected and earned twenty credits in the Law School, will be admitted to the second year. To meet the above requirement, the student must elect courses offered in the first year of the law course.

All persons from other universities or colleges, who intend to apply for advanced standing under the above rules should forward or present their credentials to the dean of the school at least one week before the opening of the particular session which the student desires to attend.

GRADUATION

The degree of Bachelor of Law will be conferred upon all candidates of good character who are at least twenty-one years of age, and have complied with the following conditions:

(1) Credit for at least seventy-two credit hours with a weighted average of fair (a credit is the equivalent of one hour a week for a semester).

(2) Residence of at least three years in a law school of good standing, having a three-year course, one year of which must have been in this school.

(3) Preparation and presentation of a satisfactory thesis of not less than 3,000 words on some legal subject selected with the approval of the faculty. The subject shall be chosen and the work begun thereon, under the supervision of the instructor in charge, not later than December 1st, and completed by April 15th, preceding the Commencement at which the candidate will apply for his degree. Two unit-hours' credit is given for thesis.

(4) Students completing the course with distinguished ability and presenting a thesis of unusual merit will be recommended for the degree with honor.

(5) Unclassified students who have completed seventy-two credits and who have been in residence for three years may, provided they have displayed unusual ability in their work, by special action of the faculty, be recommended for a degree.

Unclassified students who fail to attain a weighted average of good, will not be considered.

ADMISSION TO THE BAR

The statutes of the state provide that any resident graduate of the Law Department of the University of Wisconsin shall be admitted to the bar of any court upon the presentation of his diploma, and may be admitted to the supreme court when not in session by an order signed by one of the justices thereof and filed with the clerk. (R. S. Wis., sec. 2586.)

Under this statute and a rule of the federal court, it is customary for the graduating class, on motion of a member of the faculty, to be admitted to the supeme court of the state, and to the district and circuit courts of the United States, immediately upon graduation. This entitles them to admission to the bar of any court of record in Wisconsin and all federal courts.

Courses of Instruction

The courses of instruction are arranged to present as far as possible, the fundamental topics of the law during the first year, and the specialized subjects during the second and third years. Unless otherwise indicated, the courses extend throughout the year.

FIRST YEAR

Contracts. Williston's Cases on Contracts. *Six credits.* Mr. Richards.

Criminal Law and Procedure. Beale's Cases on Criminal Law. *Four credits.* Mr. Gilmore.

Equity I. Ames' Cases on Equity. *Second semester; three credits.* Mr. Lorenzen.

Law of Persons. Paige's Cases. *Two credits.* Mr. Jones.

Property I. Gray's Cases on Property. Vols. I, II (2nd ed.) *Five credits.* Mr. Moore.

Torts. Ames' and Smith's Cases on Torts. *Five credits.* Mr. Lorenzen.

SECOND YEAR

Administrative Law I. Selected Cases on Administrative Law. *Second semester; three credits.* Mr. Hall.

Administrative Law II. Selected Cases and Smith's Cases on Municipal Corporations. *Two credits.* (Omitted 1911–12.)

Administrative Law III. Officers and Elections. Goodnow's Cases. *First semester; two credits.* Mr. Hall.

Agency. Wambaugh's Cases on Agency. *First semester; three credits.* Mr. Gilmore.

Bankruptcy. Williston's Cases on Bankruptcy. *Second semester; two credits.* Mr. Moore.

Bills of Exchange and Promissory Notes. Smith and Moore's Cases on Bills and Notes. *Four credits.* Mr. Moore.

Common Law Pleading. Ames' Cases on Pleading. *First semester; two credits.* Mr. Boesel.

Criminal Procedure. Beale's Cases (2nd ed.). *Second semester; one credit.* Mr. Gilmore.

DAMAGES. Beale's Cases on Damages. *Second semester; two credits.* Mr. RICHARDS. (Omitted 1911–12.)

EQUITY II. Ames' Cases on Equity. *First semester; three credits.* Mr. RUNDELL.

EQUITY III. Ames' Cases on Equity. *Second semester; two credits.* Mr. RUNDELL.

EQUITY PLEADING. Selected Cases. *Second semester; one credit.* (Omitted 1911–12.)

EVIDENCE I. Jones on Evidence and selected cases. *Two credits.* Mr. JONES.

INSURANCE. Wambaugh's Cases on Insurance. *First semester; two credits.* Mr. RUNDELL. (Omitted 1911–12.)

INTERNATIONAL LAW. Scott's Cases. *Four credits.* Mr. LOWREY.

PROPERTY II. Gray's Cases on Property. Vols. III, IV (2nd ed.). *Four credits.* Mr. RUNDELL.

PUBLIC SERVICE COMPANIES. McClain's Cases on Carriers, and selected cases. *Second semester; three credits.* Mr. GILMORE. (Omitted 1911–12.)

QUASI-CONTRACTS. Keener's Cases on Quasi-Contracts. *Second semester; three credits.* Mr. LORENZEN.

SALES. Williston's Cases on Sales. *First semester; three credits.* Mr. LORENZEN.

TRUSTS. Ames' Cases on Trusts (2nd ed.) *First semester; three credits.* Mr. RICHARDS.

THIRD YEAR

CODE PLEADING. Hinton's Cases on Code Pleading. *Second semester; two credits.* Mr. BOESEL.

CODE PRACTICE. Wisconsin Statutes and Decisions. *Four credits.* Mr. SANBORN.

CONFLICT OF LAWS. Lorenzen's Cases on Conflict of Laws. *First semester; three credits.* Mr. LORENZEN.

CONSTITUTIONAL LAW. Thayer's Cases on Constitutional Law. *Six credits.* Mr. GILMORE.

CORPORATIONS. Smith's Cases on Corporations. *Second semester; four credits.* Mr. RICHARDS.

EVIDENCE II. Jones on Evidence. *Two credits.* Mr. JONES.

MORTGAGES. Kirchwey's Cases on Mortgages. *Second semester; two credits.* Mr. RUNDELL.

PARTNERSHIP. Gilmore's Cases on Partnership. *Second semester; two credits.* Mr. GILMORE.

PROPERTY III. Gray's Cases on Property, Vols. V, VI. *Four credits.* Mr. MOORE.

SURETYSHIP. Ames' Cases on Suretyship. *Second semester; two credits.* (Omitted 1911–12.) Mr. MOORE.

REQUIRED AND ELECTIVE COURSES

Candidates for the degree are required to take all the subjects of the first year, twelve hours of work in the second year, and twelve hours in the third year. The work of the second and third years is elective. Second year students may elect not less than twelve nor more than fourteen hours in courses offered in the second year. Second year students who are graduates of the College of Letters and Science, and who have not completed all the courses of the first year, will be required to include such omitted courses in their list of electives. Third year students may elect not less than twelve nor more than fifteen hours in courses offered in the third year and in courses not already taken by them when second year students. No student is permitted to count more than twelve hours of work in any one semester towards the total hours required for the degree. Elections in all cases are subject to the approval of the dean.

PROCEDURE AND PRACTICE COURSES

Courses in Procedure and Practice extend throughout the last two years and comprise Common Law Pleading, two credits, Code Pleading, four credits, Equity Pleading, one credit, Code Practice, four credits, and Criminal Procedure, one credit. The purpose of the courses is to instruct the student in the principles of pleading and practice at common law and under the codes, by duplicating as far as possible the steps taken by an active practitioner in the preparation for trial of cases at law and in equity throughout the entire field of litigation. The student is required to prepare pleadings in assigned cases, and to carry through the various steps in a cause from its inception to the final judgment. A practice court is maintained in connection with the work in code practice.

ELECTIVE STUDIES

Students of the Law School will be permitted to pursue studies in other departments of the University, but not for credit.

Students in the College of Letters and Science will be permitted to elect, as a part of their undergraduate course, studies in the Law School for which see Index, under Election.

EXAMINATIONS

Examinations are held at the close of each semester, and the summer session. Examinations will also be held during the opening week of the first semester for the benefit of students having conditions, provided a written application is made to the dean, on or before Sept. 15th.

RESOURCES OF THE LAW SCHOOL

The Law School is maintained from appropriations made for the purpose by the Regents.

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.

LIBRARY

The library of the Law School contains 19,000 bound volumes, comprising the official reports of the various states and territories and of the United States; a complete set of English, Irish, and Canadian reports; the reporter system; the various series of selected cases, as American Decisions, American Reports, American State Reports, Lawyers Reports Annotated; duplicates of the more important reports; complete sets of the leading law periodicals; the leading encyclopedias of law and other works of reference; a large collection of text-books, statutes, digests, etc.

Students are allowed free access to the books. The library is open each week day from 8 A. M. to 10 P. M.

For information concerning the other libraries accessible to students, see Index under Library.

ADVANTAGE OF LOCATION

Unusual facilities for observing the practice of the various courts are offered the students of the Law School, from the fact that the supreme court of the state is in session during most of the academic year, and the students have opportunity to listen to arguments by some of the ablest lawyers of the country.

Two terms of the United States district and circuit courts are held here annually, and important cases, both in law and equity, are tried, illustrating the procedure in the federal courts.

The circuit court of Dane county holds three terms annually, giving the students opportunity to observe the details of the practice under the code system.

The municipal court of Dane county sits daily for the trial of criminal cases.

The legislature of the state holds biennial sessions.

THE UNIVERSITY

Students of the Law School may pursue studies for which they are prepared in other departments of the University without additional fees in so far as such studies do not interfere with their work in the Law School. Before registering in other departments, the student must obtain permission from the Dean of the Law School.

LAW CLUBS

A number of law clubs are maintained by the students, in which questions of law are argued and decided.

FEES AND EXPENSES

All fees are payable in advance at the office of the Secretary of the Regents. (See Index under Tuition and Fees.) Admission to membership in the classes is not permitted until the fees are paid. No deductions are made for absences, nor for failure to begin at the opening of the year, nor is extension of time allowed for payment of fees.

Receipts showing the payment of tuition must be filed with the dean within ten days after entry.

It is most desirable that each student should provide himself

with his own text-books and books of selected cases which are designated in the program of instruction. These books may be obtained from the University Co-operative Society at a considerable discount from the quoted prices. The books required for the first year can be obtained for about $35 and for the second and third years for about $65.

The expenses of living are moderate. (See Index under Expenses.)

Students desiring information in regard to boarding places, or general information as to expenses, should address their inquiries to the Secretary of the Regents.

A careful perusal of this general statement, it is believed, will supply all needed information; but should further inquiries as to admission, examination, etc., be necessary, they should be addressed to the Dean of the Law School, Madison, Wis.

SUMMER SESSION

The summer session established in 1907 is a regular session of the school. The courses offered are not review courses or abbreviations of the subjects presented during the regular session. The lectures are given by regular members of the faculty assisted by experienced teachers from other law schools. Full credit toward the degree in law is given for all work successfully completed. An opportunity is thus afforded to those who for any reason are unable to attend the regular session to obtain thorough and systematic legal instruction. By taking advantage of the summer sessions regular students of the school can materially shorten the calendar period of residence required for the degree.

Time of Opening

The session for 1912 begins June 24th and continues until August 31.

Courses of Instruction—1912

The subjects are arranged to give a full course (12 hours per week) to students just beginning the study of law, and a full course to students who have studied law for one or more years.

FIRST YEAR

CRIMINAL LAW. Beale's Cases on Criminal Law, 2nd ed. *Eight hours a week for first five weeks. Two and two-thirds credits.* Mr. GILMORE.

PERSONS. Kales' Cases on Persons. *Eight hours a week for the second five weeks. Two and two-thirds credits.* Mr. KALES. Full course.

TORTS. Ames' and Smith's Cases on Torts. *Four hours a week for ten weeks. Two and two-thirds credits.* Mr. LORENZEN.

SECOND AND THIRD YEARS

CONFLICT OF LAWS. Lorenzen's Cases on the Conflict of Laws. *Four hours a week for ten weeks. Two and two-thirds credits.* Mr. LORENZEN.

CORPORATIONS. Selected Cases. *Eight hours a week for first five weeks. Two and two-thirds credits.* Mr. RICHARDS.

EQUITY III. Ames' Cases on Equity. *Eight hours a week for the second five weeks. Two and two-thirds credits.* Mr. RUNDELL. Full course.

MORTGAGES. Kirchwey's Cases on Mortgages. *Eight hours a week for first five weeks. Two and two-thirds credits.* Mr. RUNDELL. Full course.

TRUSTS. Ames' Cases on Trusts. *Eight hours a week for second five weeks. Two and two-thirds credits.* Mr. COOK. Full course.

THE COLLEGE OF AGRICULTURE

H. L. Russell, Dean.

GENERAL INFORMATION

The College of Agriculture is one of the general divisions of the University and instruction in the general sciences, languages, and mathematics is given to agricultural students along with students in other colleges, but for the purely agricultural subjects separate buildings, equipment, and staff of instructors are maintained. Agricultural students enter the University with the same standing as students in other colleges and have the advantages incident to a great university such as the general laboratories, libraries, and student organizations. Aside from the purely instructional work of the College the facilities for research in agriculture afford special opportunities for both regular and advance students to secure a knowledge of the best methods of agricultural science.

BUILDINGS

The buildings occupied by the College of Agriculture are located at the west end of Observatory Hill adjacent to the University Farm, which extends still further westward. These buildings have been erected with particular attention to the needs of the various departments which occupy them.

Agricultural Hall, a four story building, 200 by 64 feet, accommodates the administrative offices of the College and Experiment Station, Farmers' Institutes, and offices, lecture rooms, and laboratories for the departments of Agricultural Chemistry, Animal Husbandry, Experimental Breeding, Agricultural Bacteriology, Agricultural Economics, Agricultural Education, Agricultural Journalism and Poultry Husbandry. An auditorium,

with 750 seats is provided in an octagonal wing, 66 feet in diameter. The first floor of this wing is occupied by the agricultural library and reading room.

Hiram Smith Hall provides facilities for the Dairy Department including instructional and research work. The main structure includes three stories, 100 by 84 feet and houses the offices, principal lecture room and laboratories for the Dairy Department as well as the University Creamery, pasteurizing plant, refrigerator, and cheese making rooms.

At the rear is the new Dairy Laboratory, 47 by 82 feet in size, which provides additional laboratories and lecture rooms for instruction in butter and cheese making. A large lecture room and a locker room with steel lockers are provided. A modern ammonia plant supplies both buildings with refrigeration.

In the creamery, operated by the Dairy department, over 4,000,000 pounds of milk, from more than 200 farms, is annually made into pasteurized milk and cream, print and package butter, and several varieties of cheese and sold in the leading dairy markets. North of the Hiram Smith Hall stands the Dairy Machinery laboratory, which includes modern equipment for instruction with dairy and creamery machinery boilers, gas and steam engines.

The Soils building is a three story brick structure with six greenhouses adjoining, which provides lecture rooms and laboratories for instruction and research work, for the Soils Department as well as offices and laboratories for the State Soil Survey. The greenhouses are especially equipped with improved devices for testing soils in various ways and a thoroughly equipped laboratory for soil chemistry is to be found on the first floor of the building. A tract of about 25 acres of the University Farm is controlled by the Soils department for instruction and research in irrigation, drainage, and fertilizer tests.

The Horticultural building, 48 by 128 feet, cost about $60,000, and includes offices, laboratories, and class rooms for the departments of Horticulture and Plant Pathology. It is provided with every modern equipment for instruction and research in these subjects. There are four greenhouses adjoining, 100 by 20 feet, and potting houses, 20 by 68 feet. The grounds of the Horticultural department include some 12 acres of orchards and extensive experimental plantations.

The Agronomy building, entirely devoted to the Agronomy department, is a modern fire proof structure 98 by 48 feet in extent. It includes thoroughly equipped laboratories for seed testing, seed inspection, grain curing and cleaning, and storage of seed grains. A large grain judging room, which will accommodate several hundred students and another smaller lecture room are provided. Offices for the Agronomy department and a museum for farm crops are also included. A portion of the University farm is used by the Agronomy department for the development of seed grain for experimental and dissemination purposes.

The Agricultural Engineering building is devoted entirely to this department, being fully equipped with modern farm machinery. The structure is of fire-proof reinforced concrete and brick construction, 150 by 50 feet in extent with three floors. The laboratories include an extensive power laboratory in which are installed modern gasoline and steam engines, electric dynamos and motors, gasolene and steam traction engines, threshing outfits, and other heavy farm machinery. On the second floor is another large machinery laboratory containing such tools as grain binders, mowers, manure spreaders, plows, harrows, corn planters, etc., while on the top floor a third laboratory provides room for smaller farm tools and implements. The building includes two large lecture rooms and drawing rooms for rural architecture and road building. A large laboratory especially designed for research and instructional work with concrete is also provided in addition to offices for the staff of the department.

An Agricultural Chemistry building is now being built. The main building will be 132 by 51 feet and the L 66 by 108 feet. The basement laboratories will accommodate 400 students. There will be a balance room, animal nutrition room, dairy laboratory, and dark room for polariscopic work. The first floor provides offices, laboratories for advanced students, one lecture room, Eperiment Station laboratories, and assembly room accommodating 400 students. The second story will be used for the work of feed and fertilizer inspection, and for dairy tests supervision.

The Live Stock Pavilion is a concrete and brick structure, 212 by 115 feet in size, containing two stories and an attic. The building includes a large arena in the form of an ellipse, 66

by 164 feet, covered with tanbark, with seating arrangements for 2,500 people. This room may be divided into separate compartments, by movable curtains, for use with classes of students. Beneath the amphitheatre seats are 15 box stalls and 22 standing stalls for the use of horses belonging to the University Farm. Offices are also provided for the Veterinary and Horse Breeding and Experimental Breeding departments and Farm Superintendent, as well as an operating room and dispensary. The attic provides storage facilities for 600 tons of roughage and several hundred bushels of grain.

A building for the department of Home Economics and for the University Extension Division is in course of construction. The legislature has appropriated $150,000 for this building.

The University Farm buildings include barns for the horses, cattle, sheep, swine, and poultry as well as two large stock judging rooms. Modern outbuildings are provided for storing farm machines and manure as well as such buildings as silos, hog houses and a tobacco curing shed.

FARM LANDS

The College of Agriculture is provided with two farms, the "University Farm," adjacent to the campus, including about 300 acres of tillable land, while two miles to the westward is located the "Hill Farm," including about 290 acres devoted to experiments with farm crops, fertilizers, tillage, drainage, etc. The latter farm is equipped with a modern barn and is operated to facilitate both instructional and research work in agriculture. The Olin and Raymer farms, purchased in 1911, comprising about 156 acres, have been temporarily placed under the direction and at the disposal of the College of Agriculture.

LIVE STOCK

The University herds and flocks include representatives of the leading breeds of horses, cattle, sheep, and swine valued at $35,000. The principal breeds of dairy cattle, beef cattle, draft horses, swine, and sheep are represented. These animals include many individuals that are well-known prize winners and are used for both instructional and research purposes. Through its own live stock equipment supplemented by animals secured dur-

ing the college year, the University provides live stock ample for all requirements.

The Poultry plant includes a general office and headquarters building with incubator rooms, feed rooms and sales room, a house for laying flocks, three large breeding pen houses containing quarters for twelve breeding flocks, and a dozen portable colony houses. Several hundred fowls, representing over 20 breeds are kept for instructional and research purposes. Several thousand chicks are hatched annually.

LIBRARY

The Agricultural College library includes about 11,500 bound volumes and thousands of pamphlets distinctly agricultural in character. This library is a part of the general University library, but is kept in special quarters in Agricultural Hall so as to be readily available to students in this College. It is especially strong in the files of scientific agricultural journals, both American and foreign, and the record books of pure bred animals. A trained librarian is in attendance to assist students.

ORGANIZATIONS

Several societies are maintained by the Long Course, Short Course, and Dairy students which meet weekly to discuss questions related to their special interests. These organizations are for drill in parliamentary practice, training in declamation, debate, and essay writing, as well as for the discussion of scientific and practical questions along agricultural lines. The Hoard Press Club is conducted by those students interested in agricultural journalism. The Grafters' Club includes students, particularly interested in horticulture; the Agricultural Engineers' Club, those who are specially studying agricultural machinery; and a Live Stock Club is maintained to discuss the interests of various breeds of cattle. A Country Life Club discusses the social phases of rural life. A chapter of the national honorary agricultural fraternity Alpha Zeta is maintained by faculty and student members.

Students of the College of Agriculture, former and present, engaged in farming in Wisconsin, maintain an Agricultural Experiment Association, with a paid membership of about 1,600, for

the purpose of cooperating with the College and Experiment Station in advancing the agriculture of the commonwealth. Practical experiments, planned by station officials and a committee of the association, are carried out on the farms of the members. Especial attention is given to testing promising new varieties of farm grains and forage crops, and to multiplying and disseminating the desirable varieties. By means of this organization, the members of which are located in all sections of the state, the college is in close touch with the great body of Wisconsin farmers. The State appropriates $2,000 annually to the work, and prints 5,000 copies each year of the annual report of the association.

SPECIAL FACILITIES FOR RESEARCH

In several departments of the Agricultural College special lines of work are conducted with which students may come in contact and secure training of a special character along certain lines of agricultural science. The Chemistry department by state law has charge of the licensing and analyzing of commercial feed stuffs and fertilizers sold in the state. The department of Economic Entomology has charge of the State Nursery and Orchard Inspection. The Agricultural Bacteriology department is associated with the State Live Stock Sanitary Board in matters relating to animal diseases. The department of Horse Breeding has charge of the licensing of stallions used in the state. The Soils department conducts extensive drainage, fertilizer and soil tests and also directs the work of the State Soils Survey. The Agronomy department has charge of the State Seed Inspection. The Agricultural Engineering department conducts tests with various farm machines and implements. The Dairy department operates a large commercial creamery. The department of Agricultural Economics conducts farm management investigations. Other lines of work of national importance are conducted by several members of the staff with which students frequently come in contact.

THE ACCREDITED FARM SYSTEM

The College of Agriculture has inaugurated a movement for the establishment of a system of accredited farms. Advanced or

graduate students who have had the preparatory practical work on the farm will have an opportunity to secure more comprehensive training and experience with successful, progressive farmers. For further particulars address Prof. D. H. Otis, Chairman of Committee on Accredited Farms.

PLAN OF THE COLLEGE ACTIVITIES

The work of the College of Agriculture is conducted on a three-fold basis. Each department is directly concerned:

First, to develop agricultural science through investigation and experiment.

Second, to give instruction to students at the University, and

Third, to disseminate agricultural information among the farmers of the state by means of publications, farmers' courses, institutes, and the agricultural extension service. Students in the College of Agriculture have ample opportunities to become acquainted with these three lines of work.

FEES AND EXPENSES

For tuition and fees, see Index.

The expenses of resident students in the graduate and long courses are practically the same as for those pursuing other University courses.

The expenses of resident Short Course and Dairy students will vary from $85 to $100 for the term for room, board, washing, and necessary books.

COURSES OF INSTRUCTION

The following courses have been arranged to meet the needs of students of various classes.

The Graduate Courses offer to advanced students opportunities for professional training and original investigation, made possible through an active Experiment Station, associated with numerous scientific laboratories. The special lines of study will be left largely to the selection of the student, subject to the approval of the agricultural faculty. Students may participate in experiments in progress, and after suitable experience, conduct independent investigations. When contributions of knowledge

of permanent value are made they may be published through the bulletins of the Experiment Station with proper credit to the contributor.

The Long Course offers scientific training in agricultural chemistry, soils, horticulture, animal husbandry, veterinary science, experimental breeding, poultry, dairying, agricultural bacteriology, agronomy, agricultural engineering, agricultural economics, economic entomology, plant pathology, agricultural education, and agricultural journalism. This course also embraces general training in chemistry, physics, biology, bacteriology, and other branches which have an application in agriculture. The field is so broad, however, that it is impossible for the student in four years to pursue all the courses offered in addition to acquiring the necessary fundamental studies, and hence much liberty of selection is allowed.

The Middle Course. This course of two full college years embraces essentially the work of the first two years of the Long Course, with the exception of foreign language and mathematics. Considerable work in the basal sciences is required to lay a foundation for the distinctively agricultural work. Practical subjects may be elected during the second year.

Courses for the Training of Teachers in Agriculture are offered through an arrangement whereby agricultural students may take six credits in the Course for the Training of Teachers in the College of Letters and Science and receive the University Teachers' Certificate upon graduation.

The Summer Session Courses include work in Agricultural Education, Agronomy, Animal Husbandry, Dairying, Farm Management, Home Economics, Horticulture, and Soils. For details see index under Summer Session.

The Short Course for two terms of fourteen weeks each is provided for those who can devote only a limited time to study, and who wish to return at once to the active operations of the farm, and therefore desire the greatest amount of directly useful knowledge that can be acquired in the brief time allowed. This course begins early in December and closes in March. An illustrated circular describing this course may be had on request to Prof. D. H. Otis, College of Agriculture, Madison, Wis.

The Winter Dairy Course is open to persons who have had at least six months' experience in a creamery or cheese factory and

covers one term of twelve weeks, beginning about November 1. The course is designed to train creamery buttermakers and factory cheesemakers in the science and practice of their respective lines. Certificates are given to those who satisfactorily complete the full course and have worked in a creamery or cheese factory for two seasons of not less than seven months each, one of which is before and the other after the period spent in the dairy course. An illustrated circular describing this course in detail will be sent upon application to Prof. E. H. Farrington, College of Agriculture, Madison, Wis.

The Summer Dairy Course. This course is intended for beginners or those having little practical knowledge of creamery or dairy work. Students are admitted at any time during the spring and summer after March 1. They are expected to remain at least ten weeks although they may continue the work longer, if desirable. Under the supervision of instructors, laboratory exercises and theoretical instruction are given as required.

EXTENSION COURSES GIVEN AT UNIVERSITY

The Farmers' Course in Agriculture. This is a popular course of addresses, demonstrations, and exercises covering a period of 10 days, designed to give busy farmers the most useful instruction and practice in the science of agriculture in the shortest possible time at a season when they can be away from home for a brief period. The course is given during February by the staff of the College of Agriculture assisted by other speakers. Programs may be had upon application to College of Agriculture, Madison, Wis.

The Women's Course in Home Economics. This course for one week is designed to give the women practical and helpful instruction in the various phases of home economics. The plan of instruction includes lectures and demonstrations on such subjects as cooking, serving, and nursing. The course is held at the same time as the Farmers' Course to afford an opportunity for farmers' wives and daughters to attend. Detailed information will be furnished upon request to Prof. Abby L. Marlatt, Madison, Wis.

The One Week's School in Home Economics. A series of class-room and laboratory exercises in cookery, sewing, art and

design, and textiles for women who desire more thorough instruction than can be secured in the Women's Course. For detailed program address Prof. Abby L. Mariatt.

The Special Dairy Course. This is a week's course of lectures, conferences, and demonstrations designed to meet the needs of creamery and cheese factory operators and managers and to give them advanced instruction in connection with problems of the management of their establishments as well as to inform them on recent advances in the science of dairying. The course is held at the time of the Farmers' Course. Detailed programs may be secured upon application to Prof. E. H. Farrington, College of Agriculture, Madison, Wis.

The Young Peoples' Course in Agriculture is a week's course of lectures, demonstrations, and exercises in grain growing and judging, selection and testing of seeds and other subjects relating to farm life which are interesting to farm boys and girls. Those who have won scholarships in grain growing contests conducted by local fair authorities and the Agronomy department pursue this course. The course covers one week, during the Farmers' Course. For further information address Prof. R. A. Moore, College of Agriculture, Madison, Wis.

TERMS OF ADMISSION

GRADUATE COURSES IN AGRICULTURE.—Graduates of this University and of other colleges and universities in good standing are admitted to this course without examination.

LONG COURSE IN AGRICULTURE.—The requirements for admission to this course are given under Admission to University. (See Index).

ADULT SPECIAL STUDENTS IN AGRICULTURE.—For terms of adsion for adult special students, see Index under Admission.

THE MIDDLE COURSE IN AGRICULTURE.—Requirements for admission are same as for Long Course.

SHORT COURSE IN AGRICULTURE.—Students in this course must be at least sixteen years of age and have a good common school education. No entrance examinations are required.

DAIRY COURSES.—The requirements for admission to the Winter Dairy Course are the same as for the Short Course excepting that the candidates must have had not less than six months ex-

perience in a creamery or cheese facory before entering the course. For admission to the Summer and Special Courses no previous experience is required.

FARMERS' AND WOMEN'S COURSES.—No examinations are required for admission to these courses, but the candidate must be at least twenty-five years of age to be admitted to the Farmers' Course.

FELLOWSHIPS AND SCHOLARSHIPS

Two Fellowships and two Scholarships are offered graduate students in this college. These are granted to those candidates best fitted for the work selected. The Fellowships return $400 per year each and the Scholarships $225 per year each. Application for these honors must be made to the Registrar of the University on proper forms.

Three J. Ogden Armour Scholarships, $250 each, will be available to students who enter this college in 1912. For details address Prof. G. C. Humphrey, Madison, Wis.

FELLOWSHIP

A fellowship in agricultural economics has been provided by Prof. H. C. Taylor, head of the Department of Agrcultural Economics in the College of Agriculture. The fellowship amounts to $400 and has been awarded to O. E. Baker who is doing special research work in the department on "The History of Agricultural Production between 1840 and 1900." This is a continuation of work that has been in progress about five years.

LOAN FUND

Students in the College of Agriculture who are short of funds, may borrow money in small amounts from a loan fund established by Albert S. Kuppenheimer, of Chicago. He has given $750, which is to be loaned to needy students at 5 per cent interest. The money is to be returned from the first available earnings of the student. This is the nucleus of a fund which will probably be increased from time to time by gifts.

DEGREES

The degree of Bachelor of Science (Agriculture) is conferred upon students who successfully complete the Long Course in agriculture.

The degree of Bachelor of Science (Home Economics) is conferred upon those completing the long course in Home Economics.

The title of Graduate in Agriculture will be conferred upon students who complete the Middle Course in satisfactory manner.

The degree of Master of Science is conferred upon agricultural graduates who complete one year of advanced study at the University and present an acceptable thesis on a topic approved by the agricultural faculty.

CERTIFICATES

Students who complete in a satisfactory manner the Short Course or Dairy Course, will be granted appropriate certificates.

OUTLINE OF LONG COURSE IN AGRICULTURE

Note.—In calculating the hours per week for the various studies, two hours of laboratory, field, or barn practice count as one hour of class room work, which is the equivalent of one credit in this outline. Required subjects outside the College of Agriculture (Marked L. & S.) will be found catalogued under the College of Letters and Science.

Freshman Year

FIRST SEMESTER	Credits.
English 1 (L. & S.)	3
German 2S (L. & S.)	4
Chemistry 1 (L. & S.)	5
Agronomy 1, first half semester, Section 1 or Agricultural Engineering 1, first half semester, Section 1	2½
Animal Husbandry 1, last half semester	2½
Military Drill	1
Physical Education 1	1

SECOND SEMESTER	Credits.
English 1 (L. & S.)	3
German 2S (L. & S.)	4
Chemistry 1 (L. & S.)	5
Dairy Husbandry 1, first half semester	2½
Agricultural Engineering 1, last half semester, Section 2 or Agronomy 1, last half semester, Section 2	2½
Military Drill	1
Physical Education 1	1

Sophomore Year

FIRST SEMESTER	Credits.
Bacteriology 1 (L. & S.)	3
Chemistry 11a (L. & S.)	4
Biology 1 (L. & S.)	5
Horticulture 1, first half semester	2½
Animal Husbandry 2, last half semester	2½
Military Drill	1
Physical Education 3	1

SECOND SEMESTER	Credits.
Agricultural Bacteriology 1	4
Agricultural Chemistry 1 and 2	5
Soils 1	5
Zoology 3	3
Military Drill	1
Physical Education 3	1

Junior Year

FIRST SEMESTER	Credits.
Physics 1 (L. & S.)	5
Agricultural Economics 1	3
Botany 129 (L. & S.)	2
Electives (3 required in the College of Agriculture)	6

SECOND SEMESTER	Credits.
Mathematics 201 (Engineering)	3
Botany 146 (L. & S.)	4
Agricultural Economics 1	2
Electives (3 required in the College of Agriculture)	8

Senior Year

FIRST SEMESTER	Credits.
Major, including Thesis	5
Minor, assigned	5
Electives (3 required in the College of Agriculture)	6

SECOND SEMESTER	Credits.
Major, including Thesis	5
Minor, assigned	5
Electives (3 required in the College of Agriculture)	6

The thesis, or a substitute approved by the adviser, must represent some phase of the student's work in his major study, four credits being given. The instructor in charge of the major subject will act as the student's advisor and will select his minor subject. The assigned minor may be taken outside the College of Agriculture.

The total requirements for graduation are 133 credits in addition to military drill and physical education. Before graduation, the students must also have had at least six months' practical farm experience. Sixteen to eighteen credits exclusive of drill and physical education may be elected each semester, with the privilege of increasing the electives to twenty credits, provided the student has received a standing of 85 per cent. in all studies for the preceding semester. This rule also applies to the Middle Course students.

OUTLINE OF MIDDLE COURSE IN AGRICULTURE

Freshman Year

FIRST SEMESTER	Credits.
English 1 (L. & S.)	3
Chemistry 1 (L. & S.)	5
Agronomy 1, first half semester, Section 1 or Agricultural Engineering 1, first half semester, Section 1	2½
Animal Husbandry 1, last half semester	2½
Electives in College of Agriculture	3
Military Drill	1
Physical Education 1	1

SECOND SEMESTER	Credits.
English 1 (L. & S.)	3
Chemistry 1 (L. & S.)	5
Dairy Husbandry 1, first half semester	2½
Agricultural Engineering 1, last half semester, Section 2 or Agronomy 1, last half semester, Section 2	2½
Electives in College of Agriculture	3
Military Drill	1
Physical Education 1	1

Sophomore Year

FIRST SEMESTER	Credits.
Biology 1 (L. & S.)	5
Bacteriology 1 (L. & S.)	3
Horticulture 1, first half semester	2½
Animal Husbandry 2, last half semester	2½
Electives in College of Agriculture	3
Military Drill	1
Physical Education 3	1

SECOND SEMESTER	Credits.
Agricultural Chemistry 1	3
Agricultural Bacteriology 1	2
Soils 1	3
Soils 2	3
Electives (3 required in College of Agriculture)	5
Military Drill	1
Physical Education 3	1

Students taking the Middle Course and desiring to transfer to the Long Course, must be prepared to spend more than the usual four years, in order to complete the requirements.

DEPARTMENTS OF INSTRUCTION

THE LONG AND MIDDLE COURSES IN AGRICULTURE

AGRICULTURAL BACTERIOLOGY

PROFESSOR RAVENEL; ASSOCIATE PROFESSOR HASTINGS (Chairman); ASSISTANT PROFESSOR HOFFMANN, DR. BEACH, MR. WRIGHT.

The courses in agricultural bacteriology are planned to meet the needs (1) of students wishing to obtain a general idea of the relation of bacteria to agricultural processes; (2) of students intending to devote themselves to dairy husbandry, soils or to veterinary medicine; (3) of students wishing to fit themselves for instructional or research work in general and applied bacteriology.

For Undergraduates

1. Agricultural Bacteriology. Relation of micro-organisms to soil, to dairy, to animal diseases, to food preservation and to sanitation of the farm. Prerequisite, course 1, general bacteriology. *Second semester; two lectures; two laboratory periods; four credits.* Mr. HASTINGS, Mr. HOFFMANN, Mr. RAVENEL, Mr. WRIGHT.

19. Thesis. A definite problem in dairy or soil bacteriology or in animal diseases. Prerequisite, course 1, and either course 121, 123 or 102 in general bacteriology. *Throughout the year; two credits.* Mr. HASTINGS, Mr. HOFFMANN, Mr. RAVENEL.

For Undergraduates and Graduates

121. Dairy Bacteriology. A consideration of the relation of bacteria to market milk, butter, and cheese. Prerequisite, course 1. *First semester; one lecture; three laboratory periods; three credits.* Mr. HASTINGS, Mr. WRIGHT.

123. Soil Bacteriology. A study of the relation of bacteria to soil processes. Prerequisite, course 1. *First semester; one lecture, three laboratory periods; three credits.* Mr. HOFFMANN.

For Graduates

230. Research work in Agricultural Bacteriology. A detailed study of a definite problem in the field of agricultural bacteriology. Prerequisite, course 121 or 123 or 102 in general bacteriology. *Conferences and laboratory work; three or five credits.* Mr. HASTINGS, Mr. HOFFMANN, Mr. RAVENEL.

231. Seminar in Agricultural Bacteriology. Discussion of research work of department and reports on articles of interest to the student. *Throughout the year; once every two weeks.* Mr. HASTINGS.

AGRICULTURAL CHEMISTRY

PROFESSORS BABCOCK, Chairman, HART, WOLL; ASSOCIATE PROFESSOR MCCOLLUM; ASSISTANT PROFESSOR TOTTINGHAM; MR. JURRJENS, MR. MORRISON, MR. PETERSON, MR. STEENBOCK.

The courses offered in this department are intended to give a broad view of farm chemistry, useful to the general agricultural student, and to develop men fitted for instructional or experimental work in the various fields of chemical activity applied to agriculture. Courses 1 and 2 must precede all other courses in the department. Courses 3 to 5 are for undergraduate students desiring a more detailed knowledge of the special subjects treated and are preliminary to greater specialization. These courses should be preceded or accompanied by work in biology and organic chemistry. Physiology is a desired prerequisite. All other advanced courses in this department are open to undergraduates and graduates who have had the necessary preliminary training.

For Undergraduates

1. Agricultural Chemistry. A general discussion of chemistry applied to the farm, including the chemistry of plants and animals and the processes involved in their growth. *Second semester; lectures; three credits.* Mr. HART.

2. Agricultural Analysis. Analytical chemistry applied to agricultural materials. *Second semester; two laboratory periods; two credits.* Mr. TOTTINGHAM, Mr. PETERSON.
3. Plant Chemistry. Select methods in the analysis of plant materials and studies of processes of growth. (Not given 1913.) *Second semester; two lectures; two laboratory periods; two or five credits.* Mr. TOTTINGHAM.
4. Dairy Chemistry. Chemistry of milk and its products, including the detection and quantitative estimation of adulterants. *First semester; two lectures; two laboratory periods; two or five credits.* Mr. HART, Mr. TOTTINGHAM.
5. Animal Chemistry. Chemistry of feeding stuffs, processes of digestion, metabolic changes involved in nutrition of animals. *First semester; two lectures; two laboratory periods; two or five credits.* Mr. MCCOLLUM, Mr. STEENBOCK.
6. Household Chemistry. Composition and physical properties of foods and their nutritive value; chemistry of the home. *First semester; two lectures; three laboratory periods; five credits.* Mr. PETERSON.
7. Advanced Household Chemistry. Composition and fuel value of prepared cereals; proprietary infant foods; soaps and washing powders. *Second semester; one lecture; two laboratory periods; three credits.* Mr. PETERSON.

19. Thesis Work in Agricultural Chemistry. The thesis may be taken in Plant or Animal Chemistry or in Dairy Chemistry. *Throughout the year; two credits.* Mr. HART, Mr. WOLL, Mr. MCCOLLUM, Mr. TOTTINGHAM.

For Undergraduates and Graduates

120. Advanced Bio-Chemical Analysis. Examination of plant and animal products including the proteins, carbohydrates, fats, and enzymes involved in nutrition of plants and animals. *Either semester; laboratory work and credit by arrangement.* Mr. HART, Mr. MCCOLLUM.
121. Detection of Adulteration of Concentrated Feeding Stuffs. Includes chemical and microscopical examinations. *Second semester; two laboratory periods; two credits.* Mr. WOLL.

122. Sugar Beet Analysis. A course intended for chemists in sugar factories. *First semester; two laboratory periods; two credits.* Mr. WOLL, Mr. JURRJENS.

For Graduates

230. Plant Nutrition. The influence of various fertilizers on the development and composition of plants, to include field and pot experiments. *Throughout the year; laboratory work and credit by arrangement; five credits.* Mr. HART, Mr. TOTTINGHAM.

231. Animal Nutrition. Composition and digestibility of foods and their influence on growth, production of milk, etc. *Throughout the year; laboratory work and credit by arrangement; five credits.* Mr. HART, Mr. WOLL, Mr. MCCOLLUM.

232. Advanced Dairy Chemistry. The proximate analysis of milk and its products. Changes occurring in manufacture of dairy products. *Throughout the year; laboratory work and credit by arrangement.* Mr. BABCOCK, Mr. HART.

233. Seminar in Agricultural Chemistry. Original articles studied to broaden and deepen the understanding and to act as a stimulus to further research. *Throughout the year; once every two weeks.* Mr. HART, Mr. MCCOLLUM.

AGRICULTURAL ECONOMICS

PROFESSORS OTIS, TAYLOR (Chairman); ASSISTANT PROFESSOR HESS; MR. GALPIN, MR. JUVE, MR. VALENTINE.

The courses in Agricultural Economics are intended to give the student a knowledge of the economic principles which relate to the production and marketing of farm products, and to the economic condition of the agricultural classes.

Students who wish to prepare themselves for practical work as farm managers and as citizens interested in agriculture will find courses 1, 8, 10, and 12 adapted to their needs. The accredited farms system (see page 404) of the College of Agriculture affords opportunity for graduate students to secure managerial experience.

Students who wish to prepare for positions as teachers and research workers in the field of Agricultural Economics will find it desirable to elect courses 224 to 240. Such students should elect courses in the department of Political Economy to round out their work. Courses 5, 8, 121, 135, 251, 252, 253, 260, and 266 are available for this purpose. A Traveling Field Course in Farm Management is given in the Summer Session. This work is carried out in camp upon the properties of progressive successful farmers, and others in Wisconsin. See Summer Session Catalogue.

For Undergraduates

1. Principles of Agricultural Economics. The outlines of economics in their application to agriculture. *First semester; three credits; second semester; two credits.* Mr. TAYLOR.
8. Farm Records and Accounts. Inventories, bookkeeping and accounting as applied to farm operations. *Second semester; two credits.* Mr. VALENTINE.
10. Methods of Farm Management. A study of farm methods as applied to business management on the farm. Visits to farms are made the basis of laboratory work. *Second semester; three credits.* Mr. OTIS.
12. Rural Life. A study of the country life movement and of the social problems of farm and village. *Second semester; two credits.* Mr. GALPIN.
19. Thesis Work. *Throughout the year; two credits.* Mr. TAYLOR, Mr. OTIS, Mr. GALPIN, Mr. VALENTINE.

For Graduates

224. The Premises of Agricultural Economics. The fundamentals of economics in their application to agricultural problems. Recent works in English, German, and French will be used. Given alternate years. *Second semester; two credits.* Mr. TAYLOR.
226. Land Tenure. An historical and comparative study of the economic status of the agricultural classes with especial reference to the relations of landlord and tenant. Given alternate years. *Second semester; two credits.* Mr. TAYLOR.

227. Economic History of Agriculture. A study of agriculture explaining historical changes and geographical differences in methods of farming. *First semester; two credits.* Mr. TAYLOR.

230. Rural Statistics. The principles of statistical method. Laboratory practice in rural statistics. *First semester; three credits.* Mr. HESS.

235. Cost Accounting. A study of systems of cost accounting in their application to the problems of farm organization and operation. *First semester; two credits.* Mr. VALENTINE.

240. Methods and Problems. Advanced students may do research work on the economic problems related to agriculture and rural life. *Throughout the year; credits to be arranged.* Mr. TAYLOR, Mr. OTIS, Mr. GALPIN.

AGRICULTURAL EDUCATION

ASSOCIATE PROFESSOR HATCH.

The course in Agricultural Education is required of students in the College of Letters and Science who take the Course for the Training of Teachers and minor in Agriculture and of those in the College of Agriculture who take the Courses for the Training of Teachers in Agriculture.

For Undergraduates and Graduates

101. Agricultural Education. Origin and development of agricultural education especially for teachers in elementary and secondary schools. *Second semester; hours to be arranged; two credits.* Mr. HATCH.

102. Research in Agricultural Education. Special problems in agricultural teaching of elementary, secondary, and collegiate grades. *Throughout the year.* Mr. HATCH.

AGRICULTURAL ENGINEERING

ASSISTANT PROFESSOR OCOCK (Chairman); MR. JOHNSON, MR. WHITE.

The courses in Agricultural Engineering are planned to meet the needs (1) of students desiring a general knowledge of the use of farm machinery, planning farm buildings, and concrete construction; (2) of students intending to become agricultural implement experts; (3) of students preparing for instructional or investigational work.

For Undergraduates

1. General Agricultural Engineering. Farm machinery, planning of farm buildings, principles and practice of farm surveying. *First half of first semester and second half of second semester; lectures and laboratory work; two and a half credits.* Mr. OCOCK, Mr. WHITE, Mr. JOHNSON.
2. Rural Architecture. Location and construction of farm buildings; heating and ventilation. Prerequisite, course 1 or its equivalent. *First semester; lectures and laboratory practice; two three-hour periods; two or three credits.* Mr. OCOCK.
3. Power Machinery. Construction, efficiency, and operation of power machinery. Prerequisite, course 1. *First semester; lecture and laboratory practice; three two-hour periods; three credits.* Mr. WHITE, Mr. JOHNSON.
4. Cement Work. Instruction in cement and concrete for farm purposes. Prerequisite, course 1 or its equivalent. *Second semester; lectures and laboratory practice; two two-hour periods; two credits.* Mr. WHITE, Mr. JOHNSON.
5. Farm Machinery. Used in preparing the seed bed, sowing and planting, tilling and harvesting crops. Prerequisite, course 1. *Second semester; lectures and laboratory practice; three two-hour periods; three credits.* Mr. OCOCK.
6. Farm Machinery. To prepare field experts. Prerequisite, courses 3 and 5 and Mechanical Engineering 1 or equivalents. *Second semester; lectures and laboratory practice; three credits.* Mr. WHITE, Mr. JOHNSON.

7. Road Building. Location and construction of earth, macadam, and stone roads. *Second semester; lectures; one credit.* Mr. Ocock.

19. Thesis and Research Work. This course varies in the subject matter, according to the lines in which the thesis is written. *Throughout the year; two credits.* Mr. Ocock.

Electives in the College of Engineering

1. Elementary Pattern Making. Bench and lathe work in wood. Molding and core making. *First semester; one credit.* Mr. Dorrans.

3. Elementary Forge Work. Forging, welding, tempering, and brazing. Second semester; one-half credit. Mr. Schumann, Mr. Zurian.

For Undergraduates and Graduates

120. Research Work. Special agricultural problems will be assigned to advanced students who have had the necessary previous training. Prerequisites, courses 2, 3, 4, 5, 6. *Both semesters; credit by arrangement.* Mr. Ocock.

AGRICULTURAL JOURNALISM

Mr. Beaty (Chairman), Mr. Hodges, Mr. Morris.

Agricultural publishers are making a constant demand for graduates of agricultural colleges to act as editors and correspondents for their papers. To supply this demand the courses in Agricultural Journalism are given. Practical experience is given in each course. Students in Journalism have their articles submitted to papers to which they are sold. Students in editing have practical experience in editing the Wisconsin Country Magazine, the official organ of the College of Agriculture. Special lectures are given throughout the year by editors, advertising managers and circulation managers of various farm publications. Students in advertising are given practical experience in writing advertisements, many of which are used by breeders of the state. The Rural Press Club composed of stu-

dents interested in agricultural journalism, meets once a week. These meetings afford opportunity for discussions on various problems that confront contributors and agricultural editors.

For Undergraduates

1. Agricultural Journalism. The details of preparing articles for farm papers. Lectures and practice work. *First semester; two credits.* Mr. BEATY, Mr. HODGES.
2. Agricultural Editing. Editing and publishing; circulation and advertising with special reference to the Wisconsin Country Magazine. Prerequisite, Agricultural Journalism 1. *Throughout the year; one credit each semester.* Mr. BEATY.
3. Methods of Farm Advertising. Principles and methods of advertising farm products; planning campaigns, writing advertisements, etc. Lectures and assignments. *Second semester; one credit.* Mr. BEATY, Mr. MORRIS.
4. Advanced Agricultural Journalism. Feature articles for farm papers and other magazines. Illustrating articles. Prerequisite, Agricultural Journalism 1. *Second semester; two credits.* Mr. BEATY.

19. Thesis. Original investigations in Agricultural Journalism or Agricultural Advertising. *Both semesters; two credits.* Mr. BEATY.

AGRONOMY

PROFESSOR MOORE (Chairman); ASSISTANT PROFESSORS NORGORD, STONE; MR. GRABER, MR. LEITH.

The courses in Agronomy are designed to give a thorough understanding of the general and scientific principles which underlie the production of farm crops; to fit students to classify, judge, and grade cereals and forage plants commercially and in competitive displays; to inspect farm seeds, identify noxious weeds and to prepare students for instructional and research work in Agronomy.

For Undergraduates

1. Description, Classification, and Judging of Cereals. Types and structure of corn and small grains. *First half of first semester and second half of second semester; laboratory work; two and a half credits.* Mr. STONE, Mr. LEITH, Mr. GRABER.
2. Forage Plants. Seed and feed production. Testing, judging, and sowing of their seeds, and best methods of rotation and curing the crops. Prerequisite, course 1. *Second semester; lectures; three credits.* Mr. MOORE, Mr. GRABER.
3. Sugar and Fiber Crops. Varieties, types, cultural methods, and distribution of sugar beets, sugar canes, cotton, hemp, etc. *First semester; two credits.* Mr. NORGORD.
4. Cereals. A detailed study of the uses, distribution, culture, composition, and improvement of grain crops. Prerequisite, course 1. *First semester; lectures; three credits.* Mr. LEITH.

19. Thesis. Original work and investigation on some assigned topic, bearing upon farm crops. Actual experiments will be required in the thesis work. *Throughout the year; four credits.* Mr. MOORE, Mr. NORGORD, Mr. STONE, Mr. LEITH, Mr. GRABER.

For Undergraduates and Graduates

120. Grain Inspection and Weed Control. Grain, grass, legume and weed seed identification and inspection; germination and purity tests. *First semester; lectures, assigned readings and laboratory work; three credits.* Mr. STONE.
121. Advanced Cereal Judging. A continuation of the practical work in judging, grading and type study of cereals as outlined in Course 1. Prerequisite, course 1. *Second semester; laboratory work; two credits.* Mr. STONE, Mr. LEITH.
130. Breeding Grains and Forage Crops. Principles and methods of plant breeders. Propagation of new varieties. Lectures, assigned readings, and laboratory work. Prerequisites, Botany 101, Agronomy 1 and 2. *First semester; three credits.* Mr. NORGORD.

ANIMAL HUSBANDRY

EMERITUS PROFESSOR HENRY, PROFESSORS ALEXANDER, HUMPHREY (Chairman); ASSISTANT PROFESSOR FULLER; MR. DELWICHE, MR. FOX, MR. KLEINHEINZ, MR. MARKEY, MR. OOSTERHUIS, MR. TORMEY.

For Undergraduates

1. Elementary Live Stock Judging. Points and characteristics of breeds of cattle, horses, sheep, and swine. *Last half of first semester; five laboratory periods; two and one-half credits.* Mr. FULLER, Mr. TORMEY, Mr. OOSTERHUIS.
2. Live Stock Practice. Approved methods in management of farm animals. *First half of first semester; lectures and quiz; two and one-half credits.* Mr. ALEXANDER, Mr. FULLER, Mr. TORMEY, Mr. OOSTERHUIS, Mr. KLEINHEINZ.

19. Thesis Work. *Two credits.* Mr. HUMPHREY, Mr. FULLER, Mr. OOSTERHUIS, Mr. TORMEY.

For Undergraduates and Graduates

120. Breeds of Live Stock. A study of the origin and characteristics of the breeds of live stock. *Second semester; three credits; lectures, M., W., F.* Mr. FULLER.
123. Advanced Live Stock Judging. Practical applications of the principles and standards governing the judging of live stock. Prerequisite, course 1. *First semester; lectures and laboratory work; five credits.* Mr. ALEXANDER, Mr. FOX, Mr. FULLER, Mr. HUMPHREY, Mr. KLEINHEINZ, Mr. TORMEY.
124. The Art of Breeding. A study of the principles and approved methods relating to the breeding of live stock. Prerequisites, courses 1, 120. *Second semester; lectures; two credits.* Mr. HUMPHREY.
126. Live Stock Feeding. Feeding of farm animals and composition of feeding stuffs. *First semester for Middle Course students with no prerequisite; second semester for Long Course students,* prerequisite, course 1. *Text-book work and lectures; three credits.* Mr. TORMEY.

127. Live Stock History. A study of leading individuals and families of live stock including records and pedigrees. Prerequisites, courses 1 and 120. *Second semester; two credits.* Mr. FULLER.

For Graduates

230. Live Stock Problems. Problems in Animal Husbandry. Prerequisites, courses 1, 120, 124, 126. *Throughout the year. Assigned reading or research work; conferences weekly; three to five credits.* Mr. ALEXANDER, Mr. FULLER, Mr. HUMPHREY, Mr. TORMEY.

DAIRY HUSBANDRY

PROFESSOR FARRINGTON (CHAIRMAN); ASSISTANT PROFESSORS BENKENDORF, LEE, SAMMIS, MR. BAER, AND ASSISTANTS.

The department offers instruction in the theory and art of manufacturing dairy products, suited to the needs of (a) farm dairymen, (b) investigators or teachers, (c) managers, operators, or inspectors of creameries, cheese factories, or city milk plants. Students intending to major in this department should elect courses 2 and either 3 or 4 at the beginning of the junior year.

For Undergraduates

1. General Farm Dairying. Elementary study of milk, and methods of testing and manufacturing farm dairy products. *First half of second semester; two and one half credits; lectures,* Mr. FARRINGTON; *laboratory,* Mr. BENKENDORF.
2. Milk Inspection. Advanced work with methods of testing and inspecting dairy products and detection of physical adulterations. Prerequisite, course 1. *First semester; four credits; lecture,* Mr. FARRINGTON; *laboratory,* Mr. BENKENDORF.
3. Creamery Butter Making. Theory and practice of cream separation and butter manufacture under commercial conditions. Prerequisite, course 1. *Throughout the year;*

three credits; lectures, Mr. FARRINGTON; *laboratory*, Mr. LEE.

4. Cheese Making. Practical and experimental work in making, curing, and scoring several kinds of commercial cheese. Prerequisite, course 1. *Throughout the year; three credits; lecture; laboratory period.* Mr. SAMMIS and assistants.

5. City Milk Supply and Ice Cream Making. Various methods of handling milk and cream under commercial conditions. Prerequisite, course 2. *Second semester; laboratory; two credits.* Mr. BAER.

6. Dairy Machinery. Shop practice with engines, boilers, artificial refrigerating machinery, pipe fitting, etc. *Second semester; laboratory; three credits.* Mr. BENKENDORF *and* assistant.

19. Thesis. The thesis may be written on assigned topics in the department. Prerequisite, courses 2, and 3, or 4. *Throughout the year; two credits.* Mr. FARRINGTON, Mr. SAMMIS.

For Undergraduates and Graduates

120. Milk Inspection and Testing. Methods used at farms, factories, and city supply stations. Prerequisite, course 2. *Throughout the year. Conferences, laboratory and field work; three or five credits.* Mr. FARRINGTON, Mr. BAER.

121. Butter Yield and Quality. Various factors in the process of buttermaking for advanced students. Prerequisite, course 3. *Throughout the year; conferences; laboratory and field work; three to five credits.* Mr. FARRINGTON, Mr. LEE.

122. Cheese Making and Curing. (a) The recovery and utilization of factory wastes. (b) Standardization of materials and methods. Prerequisite, course 4. *Throughout the year; conferences and laboratory work; three or five credits.* Mr. SAMMIS.

ECONOMIC ENTOMOLOGY

ASSOCIATE PROFESSOR SANDERS (CHAIRMAN); MR. BURRILL.

Destructive and dangerous insect pests are considered with regard to their recognition, evidences of attack, and extent of injury. The uses of insecticides and other control measures are discussed.

Course 101 is intended for the general student; course 103 for those students majoring in Horticulture.

Course 106 is offered for students in Home Economics.

For Undergraduates and Graduates

101. General Economic Entomology. A general survey of insects in their economic relation to agriculture, horticulture and public health. *First semester; lectures and laboratory; three credits.* Mr. SANDERS, Mr. BURRILL.

103. Horticultural Entomology. A study of insects affecting horticulture. Prerequisite, course 101. *Second semester; one lecture and two laboratory periods; three credits.* Mr. SANDERS, Mr. BURRILL.

106. Household Insects. A general consideration of the insects of importance in the household and those affecting ornamental plants. *Second semester; lectures and laboratory; one credit.* Mr. SANDERS, Mr. BURRILL.

120. Research Work. Special economic problems for advanced students. Prerequisite, course 101. *Throughout the year; credit by special arrangement.* Mr. SANDERS.

EXPERIMENTAL BREEDING

ASSOCIATE PROFESSOR COLE (CHAIRMAN); MR. KELLEY.

The following courses are designed for those who have had some biological training, and who desire a general knowledge of the subjects of heredity and breeding, or who contemplate following these lines, either from the theoretical or practical point of view. Special opportunity is offered those doing advanced work to get practical experience in the methods of experimental breeding.

For Undergraduates and Graduates

101. Principles of Breeding. Variation and heredity, with special reference to their application to the problems of plant and animal breeding. *First semester; three credits.* Prerequisite, Botany 1, and Zoology 3. *Lectures and demonstrations.* MR. COLE.

120. Problems of Heredity and Breeding (Seminar). Weekly conferences, taking up current literature and special topics. Consent of instructor required before election. *Throughout the year; one credit.* MR. COLE.

121. Topical Work in Heredity and Breeding. Assigned topics for reading, conference, and report. For those not prepared for course 225. To be taken with or subsequently to course 101. *Credits and hours to be arranged.* MR. COLE.

For Graduates

225. Research. For students qualified by preliminary training. Work may be based on the analysis of available data, or upon new data acquired by experiment. *Credits and hours to be arranged.* MR. COLE.

HORTICULTURE

ASSOCIATE PROFESSOR J. G. MOORE (Chairman); ASSISTANT PROFESSOR MILWARD, MR. BUTLER, MR. HELPER, MR. JOHNSON, MR. MCCARTHY.

The courses offered in this department are designed to give the student a thorough working knowledge of the principles and practices of the most important lines of horticultural work.

For Undergraduates

1. Principles of Fruit Growing. An introductory course designed to cover the principles of fruit growing. *Second half of first semester; five lecture periods a week; two and one-half credits.* Mr. MOORE.
2. Fruit Growing. Practical work in spraying, pruning, cultivation, etc. Fruit packages, plans for storage houses, etc. Prerequisite, course 1. *Second semester; three laboratory or lecture periods a week; three credits.* Mr. MCCARTHY.
3. Vegetable Gardening. Principles and practices used in growing vegetables. Practical work in the gardens; hot bed and cold frame construction. *Second semester; three lecture or laboratory periods; three credits.* Mr. HEPLER.
4. Vegetable Forcing. Forcing-house construction and heating; growing vegetables under glass; practical work in the forcing houses. *Throughout the year; first semester prerequisite to second; two credits each semester.* Mr. HEPLER.
5. Small Fruit Culture. A discussion of the principles and practices of successful culture of cane, bush, and other small fruits. *First semester; one credit.* Mr. MCCARTHY.
6. Landscape Gardening. Decorative planting, planning, mapping, and planting of grounds. *Throughout the year; first semester prerequisite to second; lecture and laboratory periods; two credits each semester.* Mr. MOORE, Mr. HEPLER.
7. Plant Propagation. Instruction in the various methods of propagating horticultural plants. *Second semester; lecture and laboratory period; two credits.* Mr. MOORE.

8. Floriculture. The propagation and care of greenhouse, garden, and lawn plants with special reference to home floriculture. Designed for women. *Second semester; lectures and laboratory work; three credits.* Mr. Moore.

19. Thesis. Based on research or experimental work in the department. *Two credits.* Mr. Moore, Mr. McCarthy, Mr. Hepler.

For Undergraduates and Graduates

120. Plant Breeding. A study of current literature relating to the theory and practice of plant breeding. Laboratory practice in selection, crossing, and biometry. Prerequisite, botany 120. *Throughout the year; first semester prerequisite to second; two laboratory or lecture periods; two credits each semester.* Mr. Moore, Mr. McCarthy.

121. Experimental Horticulture. Planning of experiments, keeping records, and experimental work. *Throughout the year; two or more laboratory periods; two to five credits* Mr. Moore, Mr. McCarthy, Mr. Hepler.

122. Pomology. Advanced course in classification, identification, judging, and handling common fruits. Students electing this course should have had courses 1 and 2. *First semester; lecture and laboratory; four credits.* Mr. Moore, Mr. McCarthy.

PLANT PATHOLOGY

Professor Jones (Chairman); Miss Bachman, Mr. Johnson, Mr. Melhus.

For Undergraduates and Graduates

101. Diseases of Plants. General introduction to the nature, causes and remedies, of the diseases of economic plants, including field and laboratory studies of a typical series of examples. Prerequisites, botany 1 and bacteriology 1. *First semester; three credits.* Mr. Jones, Mr. Melhus.

102. Methods in Plant Pathology. Diseases of plants, and technique of culture methods, inoculations, spore germination.

Diseases of nonparasitic origin. Prerequisite, Plant Pathology 101. *Second semester; three credits.* Mr. JONES, Mr. MELHUS.

119. Thesis. Investigation of some problem in plant pathology. Choose subject early, preferably the preceding spring, in order to take advantage of summer season to secure material. *Throughout the year; two credits.* Mr. JONES.

123. Seminar in Plant Pathology. For advanced and graduate students. A study of important original publications, current literature and methods of research of plant pathology. *Throughout the year; one credit.* Mr. JONES.

125. Research. Students who have had suitable preparation may conduct research work in connection with a thesis or graduate study. *Hours and credits to be arranged.* Mr. JONES.

POULTRY HUSBANDRY

ASSOCIATE PROFESSOR HALPIN (Chairman), MR. SCHWARTZ, MR. MUELLER.

The Poultry department is well equipped with houses for laying stock and for brooding chicks, also has a very complete list of incubators, brooders, and other poultry machinery. The present stock consists of some twenty varieties of chickens and three varieties of ducks.

For Undergraduates

1. Elementary Poultry Raising. A general course dealing with poultry houses, yards, etc.; fattening and marketing poultry; description of breeds and varieties of poultry. *First semester; lectures and demonstrations; two credits.* Mr. HALPIN.

2. Elementary Poultry Raising. Continuation of course 1; production and marketing of eggs; incubation and brooding; summer care and management, etc. *Second semester; lectures and demonstrations; two credits.* Mr. HALPIN.

3. Poultry Practice. Practice in poultry carpentry; caponizing; killing and dressing different grades of market poultry. Ordinary work about a poultry farm. *Throughout the year; laboratory work; one to three credits.* Mr. HALPIN, Mr. SCHWARTZ.
5. Incubation and Brooding. Each student will operate an incubator and brooders keeping accurate records of temperatures, etc. Prerequisite, courses 1, 2 and 3. *Second semester; one to three credits.* Mr. HALPIN, Mr. SCHWARTZ.
6. Poultry Judging. Various breeds and varieties of chickens, turkeys, ducks, and geese. Origin, history, and points of excellence. Prerequisite, course 1. *First semester; two lectures and one laboratory period per week; three credits.* Mr. HALPIN, Mr. SCHWARTZ.
7. Poultry Management. Advanced course. Management of fowls on large poultry farms. Prerequisites, courses 1, 2 and 3. *Second semester; one lecture, one recitation and assigned work; three credits.* Mr. HALPIN, Mr. SCHWARTZ.

SOILS

PROFESSOR WHITSON (CHAIRMAN); ASSISTANT PROFESSORS JONES, PETERSON, MR. FINNER, MR. SIEVERS, MR. TRUOG, MR WALSTER, MR. ULLSPERGER.

Course 1 is prerequisite to all other courses except course 2. Courses 1, 2, and 120 are general in character and are adapted to the needs of all students of agriculture. In addition to these courses, courses 19, 121, and 122 are required of students taking their major in soils, and form a basis for the more advanced courses designed to prepare students for instructional or investigational work in Agronomy, Soil Fertility or Land Drainage. Advanced students specializing in this subject are advised to elect courses in Chemistry, Vegetable Physiology, Agronomy, Geology or Hydraulics, according to their special needs, during their senior and graduate years.

For Undergraduates

1. Principles of Soil Physics and Fertility. Origin, composition, tilth and fertility of soils. Prerequisite, chemistry 11a. *Second semester; three lectures and two laboratory periods weekly; five credits.* Mr. WHITSON, Mr. WALSTER, Mr. FINNER, Mr. SIEVERS.
2. Land Drainage. Principles and surveying operations. Field work in tile laying. *Second semester; two lectures and one two-hour drafting room period a week for the first nine weeks and field and laboratory work six hours a week for the second nine weeks; three credits.* Mr. JONES, Mr. FINNER.
19. Thesis and Assigned Work. *Credits and hours to be arranged.* Mr. WHITSON, Mr. JONES, Mr. WALSTER, Mr. PETERSON, Mr. TRUOG.

For Undergraduates and Graduates

120. Soil Management. Adaptation of systems of farming to sand, marsh, heavy clay and other soils; influence of various systems of farming on the maintenance of fertility. *First semester; lectures; two credits.* Mr. WHITSON.
121. Soil Analysis. Laboratory practice. "Total" analyses, availability methods, estimation of soil acidity, organic matter, humus, etc. Use of colorimetry in soil studies. *First semester, one lecture and two or four laboratory periods; three or five credits.* Mr. WALSTER.
122. Soil Physics. Laboratory technique, lectures, and field studies on the physical properties of soil, including texture and porosity, tilth, moisture, and temperature as affected by different methods of cultivation. *Throughout the year. Laboratory course first semester; in second semester three lectures a week for first six weeks, followed by six hours a week of field studies and laboratory determinations for the rest of the semester. First semester not prerequisite to the second. Two credits first semester and three credits for the second.* Mr. JONES, Mr. FINNER.
123. Drainage Design. Advanced field observations; designing drainage and irrigation systems; detailed studies in

the vicinity of Madison. *Second semester; conferences and field work by appointment; three credits.* Mr. JONES.

124. Plant Nutrition. The relation of the plant and soil. Lectures, reports, and plant house work on soil acidity, toxicity theory, root excretions, etc. Alternates with course 125. (Given 1913). *Second semester; two credits.* Mr. WALSTER.

125. Origin and Classification of Soils and Agricultural Climatology. Geological and meteorological processes of soil formation as a basis for their mapping. Alternates with course 124. (Given 1912). *Second semester; three credits.* Mr. WHITSON.

For Graduates

230. Advanced Soil Chemistry. For students preparing for research in soil chemistry. Critical review of current literature. Prerequisites, chemistry 20 and Soils 121. *First semester.* Mr. PETERSON.

231. Research Work. Graduate students with sufficient preparation will be assigned special problems for study. Mr. WHITSON, Mr. JONES, Mr. WALSTER, Mr. PETERSON.

232. Soil Journal Club. Important articles on soil problems will be reviewed by members of the department and advanced students.

VETERINARY SCIENCE

PROFESSOR ALEXANDER; ASSOCIATE PROFESSOR HADLEY (CHAIRMAN).

The courses in Veterinary Science are designed to give agricultural students sufficient information and training to care intelligently for live stock in health and sickness; to recognize the common diseases, blemishes, and vices to which farm animals are subject, and thus be better equipped to buy, handle, and care for animals successfully. As preliminary studies for those students who intend to devote their attention to veterinary medicine these courses will be found of especial value.

Course 1 is prerequisite to course 122, which is designed for students who desire further training along the lines of Stock Judging, Meat Production, and Animal Nutrition.

For Undergraduates

1. Introductory Veterinary Science. A study of the principles of the structure and functions of the different organs of the animal body. *First semester; lectures; three credits.* Mr. HADLEY.

19. Thesis. *Credits and hours to be arranged.* Mr. ALEXANDER, Mr. HADLEY.

For Undergraduates and Graduates

120. Common Diseases of Live Stock. Special attention given to first aid treatment and care of sick and injured stock. *Second semester; lectures and demonstrations; two credits.* Mr. HADLEY.

121. Veterinary Hygiene. A lecture course especially pertaining to live stock hygiene. *First semester; two lectures; two credits.* Mr. ALEXANDER.

122. Advanced Veterinary Anatomy. Systematic dissection of the horse noticing anatomical differences in the ox, sheep, and pig. *Second semester; three laboratory periods and one recitation; four credits.* (Omitted 1912–13). Mr. HADLEY.

THE WISCONSIN AGRICULTURAL EXPERIMENT STATION

H. L. RUSSELL, Director

The Wisconsin Agricultural Experiment Station is organically associated with the College of Agriculture and members of the faculty of the college constitute the staff of the Station. The purpose of the Station is the promotion of agricultural science by research and experimentation. The funds for the work of the station come from both state and federal appropriations. Each of the several departments has research work continually in progress; some members of the staff devoting their entire time to this work. Such subjects are selected as are of the greatest importance to the farmers of Wisconsin, so far as the facilities at hand permit.

The publications of the Experiment Station include an annual report, a series of popular bulletins, a series of research bulletins, and a series of circulars of information. The popular bulletins, including helpful discussions of the results of experiments, are distributed free to residents of the state upon application and are issued in editions of 20,000 to 50,000 copies. The research bulletins contain technical data and discussions not designed for wide distribution and are sent to libraries, investigators, etc. Twenty-eight Annual Reports and over 215 bulletins have been issued. Any person desiring to receive the popular bulletins should apply to H. L. Russell, Director, Madison, Wis.

THE FARMERS' INSTITUTES

GEORGE MCKERROW, Superintendent, NELLIE E. GRIFFITHS, Clerk.

The Department of Farmers' Institutes of the College of Agriculture is maintained by a legislative provision which appropriates $20,000 annually for the purpose of conducting farmers' institutes at various points throughout the state. The superintendent, assisted by special conductors and workers, during the season 1911–12 conducted 133 two-day institutes, 40 cooking schools in 64 counties and an annual three-day Round-up Institute and Cooking School at Neenah, Winnebago County, March 12, 13, 14, 1912.

A hand-book containing a report of the Round-up is issued annually in an edition of 50,000 copies and distributed free at institutes. A cook book is also issued in an edition of 10,000 copies for distribution at the cooking schools.

COURSES IN HOME ECONOMICS

The Department of Home Economics is connected with the College of Agriculture for administrative purposes and the faculty of this College gives instruction in certain subjects, such as food chemistry, bacteriology, and entomology.

The faculties of the various other colleges, schools and courses of the University give instruction in certain required and elec-

tive subjects offered to students taking the Course in Home Economics.

FACILITIES FOR INSTRUCTION

The Department of Home Economics is located in Lathrop Hall, where offices, class rooms, and laboratories are provided, and in the Practice Cottage where the work in household management, house decoration, and dietetics have ample scope for practical solution. The department is provided with all the necessary furnishings and apparatus to give thorough instruction in the subjects of house management and sanitation, art and design, food preparation, dietetics, textiles, and house decoration.

The new equipment of the department and the well appointed laboratories, give an opportunity for theoretical and practical training in Home Economics not heretofore available. There is abundant opportunity for study and practice both individually and in classes.

The work in chemistry and bacteriology, as applied to Home Economics, is done in sections of the laboratories set aside for this work. The courses given in the College of Letters and Science are taken in various class rooms of that college. Electives may be chosen in other colleges of the University according to the nature of the work. Women taking the course in Home Economics are granted the same privileges of residence in Chadbourne Hall, the women's dormitory, and in the use of the women's gymnasium, etc., as other women in the University.

TERMS OF ADMISSION

Students are admitted to this department on the same basis as are students of other courses in the University. See Index under Entrance Requirements.

FEES AND EXPENSES

See Index under Laboratory and Tuition Fees.

DEGREE

The degree of Bachelor of Science (Home Economics) is conferred upon those who complete the long course in Home Economics.

SCOPE OF THE COURSES IN HOME ECONOMICS

The Department of Home Economics offers the following courses which deal with the principles which underlie the proper management of the home, care of children, hygienic and sanitary conduct of institutions and the economic conditions affecting the work of women.

The courses are planned to meet the needs of four classes of students:

1. Those students who desire a general knowledge of the subject matter as a basis for application in the study of the general arts and sciences as a part of a liberal education;
2. Those students who desire to make a detailed study of Home Economics in its relation to the arts and sciences which are fundamental in the management of the home;
3. Those students who wish to teach Home Economics in the secondary schools and in higher institutions;
4. Graduate students who have the requisite knowledge to benefit by research work in subjects connected with the home.

The courses in the related sciences as chemistry, physics, physiology, zoology, bacteriology and economics are given in the different colleges of the University.

OUTLINE OF LONG COURSE IN HOME ECONOMICS

Freshman Year

FIRST SEMESTER	Credits.
English 1, (L. & S.) a study of the elements of efficient writing with practice in composition	3
German or French, (L. & S.) general courses adapted to the the requirements of the student	4
Chemistry 1, (L. & S.) lectures and laboratory work in general chemistry and quantitative analysis	5
Home Economics 2, Art and Design	3
	15

SECOND SEMESTER Credits.

English 3
German or French... } Same as first semester... } 4
Chemistry ..... } } 5
Home Economics 3, Selection and Preparation of foods.... 3

15

Sophomore Year

FIRST SEMESTER Credits.

Physics 1, (L. & S.) lectures and laboratory practice in general Physics 5
Chemistry, Household 1..... 5
Physiology 1, (L. & S.) a general course of lectures on the elements of human anatomy and physiology..... 3
Home Economics 4, Economics of food supply..... 3

16

SECOND SEMESTER Credits.

Physics 1, (L. & S.) same as first semester..... 5
Bacteriology, 1 and 9, (L. & S.) lectures and laboratory work with bacteria as concerned with water, milk, other food supplies and materials to be found in the household 5
Home Economics 5, Textiles..... 4

14

Junior Year

FIRST SEMESTER Credits.

Home Economics 11, Manufacture and Selection of Clothing 5
Home Economics 7, Home Architecture and Sanitation.... 5
Electives to be chosen as indicated below..... 5

15

SECOND SEMESTER Credits.

Home Economics 8, Household Decoration..... 4
Home Economics 6, Dietetics..... 5
Electives to be chosen as indicated below..... 6

15

Senior Year

FIRST SEMESTER	Credits.
Home Economics 10, Household management	3
Thesis to be assigned in connection with major study	2
Electives to be chosen as indicated below	10
	15

SECOND SEMESTER	Credits.
Home Economics 109, Humanics	4
Home Economics 120, Seminar	1
121, Teachers' course	2
Thesis	2
Electives to be chosen as indicated below	6
	15

ELECTIVES

Opportunity is given in the junior and senior years for the election of related courses of study in various lines adapted to the requirements of the students. Information concerning electives will be furnished students upon application.

The following electives are recommended for those desiring to teach Home Economics: Biology; Chemistry 11a (Qualitative); Physiology; Chemistry 120 (Organic) 1st semester; Agricultural Chemistry 5; Elements of Economics 1; Social Psychology 139; Charities and Corrections 141; Education 131; Education 41; Psychology 1; Experimental Psychology 103 and 104; Floriculture 8; History; Economic Entomology 106.

The requirements for major in Home Economics are not less than 36 credits nor more than 40 credits.

The requirements for a minor in Home Economics are not less than 20 credits.

THESIS

All candidates for a degree from the University are required to present a graduating thesis which must be acceptable to the professor at the head of the department. Theses must represent original work upon some subject which has been arranged after consultation with the student's adviser and the head of the department in which the work is done.

DESCRIPTION OF COURSES

PROFESSOR MARLATT (CHAIRMAN); MISS DENNY, MISS GRADY, MISS HOPE, MISS KELLY, MISS LOOMIS, MISS TURNER.

For Undergraduates

1. General Survey of Home Economics. Food, textiles, decoration, etc. *Throughout the year; lectures, Tu., Th.*, 9; *one laboratory period; three credits.* Miss MARLATT, Miss LOOMIS, Miss GRADY, Miss TURNER, Miss KELLY.
2. Art and Design. Principles of design; study of work of modern artists; lectures on the theory of color and its application in the home. *First semester; lectures, M.*, 9; *two laboratory periods; three credits.* Miss HOPE, Miss GRADY.
3. Principles of the Selection and Preparation of Food. Prerequisite, entrance credit in physics or chemistry or first semester of chemistry 1. *Second semester; lectures, W., F.*, 9; *two laboratory periods; three credits.* Miss LOOMIS, Miss TURNER, Miss KELLY.
4. Economic Problems of Food Supply. Purchase and manufacture of foods; use of preservatives and tests for adulterations; pure food laws; time saving devices in preparation of food. Prerequisites, chemistry 1, home economics 3. *First semester; lectures W., F.*, 9; *two laboratory periods; three credits.* Miss MARLATT, Miss LOOMIS.
5. Textiles. From the consumer's standpoint. Hygienic, economic, and artistic aspects. Identification of fabrics. dyeing, weaving, cleansing, tests for adulteration. Prerequisites, chemistry 1, home economics 2. *Second semester; lectures Tu., Th.*, 11; *three laboratory periods; four credits.* Miss DENNY, Miss TURNER.
6. Dietetics. Dietary standards; balanced rations; construction of dietaries and service of meals; dietetic treatment in disease and principles of home nursing. Prerequisites, home economics 3–4, physiology 1, bacteriology 1–9, chemistry 1, home economics chemistry. *First semester; lectures, M., W., F.*, 11; *two laboratory periods; five credits.* Miss MARLATT, Miss LOOMIS, Miss KELLY.

7. Home Achitecture and Sanitation. Prerequisites, chemistry 1, physics 1, bacteriology 1, home economics 2. *First semester; lectures, M., W., F.*, 10; *two laboratory periods; five credits.* Miss MARLATT, Miss KELLY.

8. Household Decoration. Floor coverings and wall hangings; pictures; economic problems in house furnishing. Prerequisites, home economics 2, 5, 7. *Second semester; lectures W., F.*, 8; *two laboratory periods; four credits.* Miss HOPE, Miss GRADY.

10. Household Management. Prerequisites, chemistry 1, bacteriology 1 and 9, physics 1, home economics 2, 3, 4, 5, 6, 7, 8, 109. *First semester; lectures, Tu., Th.*, 11; *one laboratory period; three credits.* Miss MARLATT, Miss KELLY.

11. Manufacture and Selection of Clothing. Hygienic and artistic requirements in dress. Economics of clothing. Laboratory work in design and construction. Materials furnished by students, cost, $15 to $20. Prerequisites, courses 2 and 5. *First semester; lectures, M., F.*, 9. *Three laboratory periods per week; five credits.* Miss DENNY, Miss TURNER.

For Undergraduates and Graduates

109. Humanics. Development from infancy to adolescence; problems of hygiene, mental development, and habit formation. Prerequisites, physiology 1, physics 1, chemistry 1, household chemistry, bacteriology 1 and 109, home economics 2, 3, 4, 5, 6, 7, 8. *Second semester; lectures, M., W., F.*, 10; *quiz W.*, 11; *four credits.* Miss MARLATT.

120. Seminar. Problems connected with the home, institutional management, and the home economics movement in education. *Second semester; one credit.* Miss MARLATT, Miss LOOMIS.

121. Teachers' Course. Existing courses in home economics. Planning courses and equipment; observation and practice work in presentation. Prerequisites, home economics 2, 3, 4, 5, 6, 7, 8, 109, 10. *Second semester; two credits.* Miss MARLATT, Miss DENNY.

122. Institutional Management. For seniors and graduates. Conditions involved in housing and feeding large groups of people. *Lectures and laboratory work; second semester; four credits.*

For Graduates

223. Seminar in Housing Problems. Effect of present conditions on health; building associations; laws to improve housing conditions. *First semester; three credits.*

HOUSEHOLD CHEMISTRY, BACTERIOLOGY AND ECONOMIC ENTOMOLOGY

For descriptions of courses in Household Chemistry, Bacteriology and Economic Entomology, see Index under these subjects.

THE MEDICAL SCHOOL

C. R. Bardeen, Dean, Professor of Anatomy

ORGANIZATION

During the legislative session of 1907, a bill was passed authorizing the establishment of a Medical School at the University. The complete curriculum of the first two years of the medical course is given. Lack of adequate clinical facilities prevents the establishment at Madison of the last half of the medical course. Full credit will, however, be granted at leading schools for work at Wisconsin, so that on the completion of the work here the student may go to some school with abundant hospital and clinical facilities for the completion of his course by two years of further study.

AIMS AND METHODS

The aims of the Medical School are fourfold:

1. To encourage a thorough preliminary medical education, and to offer adequate facilities for a thorough preparation for clinical work.
2. To aid physicians and others in the state to keep up with the rapid advances in the application of science to medicine.
3. To promote the development of preventive medicine and hygiene.
4. To stimulate research in the sciences upon which modern medicine is based.

ADMISSION REQUIREMENTS IN THE MEDICAL SCHOOL*

For matriculation without condition in the Medical School a student must furnish evidence:

1. That he has satisfied the requirements for admission to the College of Letters and Science.

* Four medical schools in this country require for unconditional matriculation a degree from a college of liberal arts or science; one school requires three years of work in a literary or scientific college; eight re-

2. That he has completed at least the equivalent of two years' work in this college.

3. That he has successfully pursued laboratory courses of college grade in physics, chemistry, and biology.

4. That he has studied elementary Latin.

5. That he has a reading knowledge of French or German.

ADMISSION TO ADVANCED STANDING

A student who has completed elsewhere work equivalent to that required for matriculation and to that of the first year of the medical curriculum, may be admitted to the second year of the medical course.

MEDICAL CERTIFICATE

Upon the successful completion of the two years of the medical curriculum at Wisconsin, a student will be given a formal certificate. A student who completes less than the two years of the medical course may, however, obtain credentials covering the pre-medical and medical studies which he has pursued.

DEGREES

The Medical School offers merely the first two years of a four-year medical curriculum and confers no degrees. The College of Letters and Science confers the degree of Bachelor of Science upon the students registered during the junior and senior years in the Medical School, and the degree of Bachelor of Science or of Bachelor of Arts upon students registered during the senior year in the Medical School. The degrees of Master of Science, Doctor of Philosophy, and Doctor of Public Health are conferred by the University faculty upon graduate students who specialize in the medical sciences and fulfill the requirements for these degrees.

---

quire two years of work, and nearly fifty schools require in addition to a four year high school course, one or two years of college work devoted especially to physics, chemistry, biology, and language. The National Confederation of State Licensing and Examining Boards, in June, 1906, adopted this as the minimum standard to apply to all students beginning the study of medicine after January 1, 1910.

Eight state boards of medical examiners (Minnesota, North Dakota, South Dakota, Connecticut, Colorado, Iowa, Indiana and Kansas) have already announced the requirement of one or more years of college work preliminary to the medical course.

Bachelor of Arts

The regular requirements for the degree apply to those students who elect the work of the first year of the medical course during the senior year in the College of Letters and Science.

Bachelor of Science

(Medical Science Course)

Students in the College of Letters and Science who are candidates for this degree are required to take the following studies:

a. English: 6 units (3 hours per week per semester) to be taken in the first year of residence.

b. Language: A reading knowledge of German or French, at least as much as may be acquired by taking course 3 in German or course 2 in French; Latin approximately equivalent in amount to two years of study in a high school. Two years of collegiate work in foreign language are required.

c. Courses in physics, chemistry, biology and the medical sciences as outlined in the requirements of the Medical School. The requirement made of candidates for the degree of Bachelor of Arts that six unit hours shall be elected in either history or mathematics does not apply to candidates for the degree of Bachelor of Science (Medical Science Course).

d. The "credit" is the standard for computing the amount of work required for graduation. This is equal to one hour of recitation or lecture per week for one semester. Two hours of laboratory work or two hours of regularly prescribed military drill or physical exercise in the Gymnasium are equivalent to one credit. Students are expected to take 15 credits per week in recitations, lectures, and laboratory work, making 30 credits per year, and 120 for the course. In addition, two hours per week (one credit per semester) of gymnastics are required of men, and four hours per week (two credits per semester) of women, during the first two years. Men are required to drill two hours per week during the first two years, for which four credits are given. The total requirements for class-room work, military drill, and the gymnasium are, therefore, 128 credits.

Students excused from drill are required either to make up the work before graduation, or if the excuse is based on per-

manent incapacity, to make good the requirement by work in other departments.

No student will be permitted to receive credit toward graduation of more than eighteen credits in one semester in regular studies except by permission of the faculty obtained in advance. Candidates for the degree of Bachelor of Arts are not allowed to elect above 16 credits per semester except when the standings of the preceding semester are all 85 or above. Candidates for the degree of Bachelor of Science cannot count toward graduation more than 15 credits in any one semester unless the standings are all 85 or above.

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

f. *Thesis.*—All candidates for a baccalaureate degree are required to present a graduating thesis, the subject of which must be approved by the student adviser and the chairman of the department in which the candidate is doing the work represented by the thesis. The thesis must represent some phase of the student's work in his major study, and must have the character of a scholarly dissertation on the subject.

CHOICE OF COURSES

The student who enters the College of Letters and Science with the intention of studying medicine should arrange his work so that he can take up systematically the work required for medical credit and for a bachelor's degree. Elective work should be chosen with the intention of making the course of study broad as well as thorough.

The following language studies are required:

English I.

Two years of foreign language.

Students who have not studied Latin in the high school are required to take a course in elementary Latin.

The following science studies are required*:

Pre-medical Work.

	Lectures and Recitations.	*Laboratory Hours.*	*Credits.*
Chemistry I	128	192	10
Physics I	160	128	10
Biology I	96	256	10
	384	576	30

Studies required in the first year of medical course if not presented for matriculation.

Organic Chemistry	48	96	4
Embryology	32	64	3
	80	160	7

First Year Medical Course.

Histology	32	112	4
Neurology	32	64	3
Gross Anatomy	32	352	12
Physiology	32		2
Physiol. Chem	20	140	4
	148	668	25

Second Year Medical Course.

Physiology	80	108	7
Pathology	96	160	6
Bacteriology and Hygiene	48	144	5
Pharmacology and Toxicology	64	94	5
	288	506	23

Required of candidates for a bachelor's degree: Thesis 128 laboratory hours (4 units).

* It is recognized that similar courses at other institutions may not correspond with the scientific courses given at Wisconsin. This will not prevent full credit being granted for approximately equivalent courses pursued elsewhere.

Required and elective work may be arranged according to one of the following plans:

1. SIX-YEAR COMBINED COURSE (LEADING TO THE B. S. AND M. D. DEGREES)

If the student has had a thorough preparation in the high school, he may take work in the freshman and sophomore years which will enable him to matriculate in the Medical School in his junior year, take the B. S. degree and get a certificate for two years of medical study at the end of the senior year and complete his medical course by two years' further study in any medical school which does not require more than two years of college work for entrance. During the Freshman and Sophomore years such a student will have to confine himself closely to the work in science and language required for matriculation in the Medical School. The exact choice of studies will depend somewhat upon the high school training and the ability of the student.

One of the two following schedules is suggested:

Freshman Year

Schedule 1.		**Schedule 2.**	
English I	3 credits per semester	English I	3 credits per semester
German or French	4 " " "	German or French	4 " " "
(*M. Tu. W. Th. 11*)		(*M. Tu. W. Th. 11*)	
Biology I	5 " " "	Chemistry I	5 " " "
(*M. W. 2:30*)		(*M. W. F. 10*)	
Electives	4 " 2nd "	Electives	4 " per "
Total	32 credits	Total	32 credits

Sophomore Year

Schedule 1.		**Schedule 2.**	
French or German	4 credits per semester	French or German	4 credits per semester
Chemistry I	5 " " "	Biology I	5 " " "
(*M. W. F. 10*)		(*M. W. 2:30*)	
Embryology	4 " 2nd "	Organic Chemistry	4 " 1st "
(*Tu. Th. S. 8-10*)		(*Tu. Th. 8-12*)	
Physics I	5 " " "	Physics I	5 " " "
(*M. Tu. W. Th. 11*)			
Total	32 credits	Total	32 credits

The modern foreign language begun in the High school should, as a rule, be continued during the first year in the college, while a new language may be begun in the sophomore year.

Junior Year

Schedule 1.		Schedule 2.	
(First year in medical school)			
FIRST SEMESTER			
Histology	4 credits	Histology	4 credits
(M. W. F. 9-12)		*(M. W. F. 9-12)*	
Organic Chemistry	4 "	Comparative Anat. (Elec.)	5 "
(Tu. Th. 8-12)		*(Tu. Th. S. 9-11)*	
Human Anatomy	6 "	Human Anatomy	6 "
(Daily 1:30-4:30)		*(Daily 1:30-4:30)*	
Total	14 "	Total	15 "
SECOND SEMESTER			
Neurology	3 credits	Embryology	3 credits
(M. W. 8-11)		*(Tu. Th. S. 8-10)*	
Physiological Chemistry	4 "	Neurology	3 "
(Tu. Th. S. 10-12. F. 8-12)		*(M. W. 8-11)*	
Physiology	2 "	Physiological Chemistry	4 "
(M. W. 11)		*(Tu. Th. S. 10-12. F. 8-12)*	
Human Anatomy	6 "	Physiology	2 "
(Daily 1:30-4:30)		*(M. W. 11)*	
Total	15 "	Human Anatomy	5 "
		(Daily 1:30-4:30)	
		Total	17 "

Senior Year

(Second year in medical school)

EIRST SEMESTER

Medical Bacteriology	5 credits
(Tu. W. Th. F. 8-11)	
Pharmacology and Toxicology	4 credits
(Lect. M. 8, Tu. Th. 1:30, S. 8. Lab. M. W. F. 1:30-4:30 after Christmas)	
Physiology	7 "
(Lect. M. Tu. W. Th. F. 11, Lab. M. W. F. 1:30-4:30 until Christmas)	
Total	16 "

SECOND SEMESTER

Pathology	6 credits	Medical Psychology (Elec.)	3 credits
(Tu. W. Th. F. 8-12)		Topographical	
Thesis	4 "	Anatomy (Elec.)	3 "
Physical diagnosis (Elec)	3 "	*(Tu. Th. 1:30-4:30)*	
(M. W. F. 1:30-2:30)		Total	16 "

2. SEVEN-YEAR COMBINED COURSE (LEADING TO THE B. A. AND M. D. DEGREES)

In this course the student matriculates as a first-year medical student during his Senior year in the College of Letters and Science; receives the B. A. degree upon graduation and takes the second year of the medical course as a graduate student. He can then finish the clinical portion of the medical course by two

years' further study, thus making the combined arts and medical course seven years. This course is in many ways preferable to the six-year combined course since it permits a greater freedom of election and a broader course of study. The language and science work should follow somewhat the lines laid down for the Freshman and Sophomore years in the six-year combined course, but can be more spread out and taken in conjunction with various electives to suit the needs and inclinations of the student.

3. COMPLETE ARTS COURSE PRECEDING THE MEDICAL COURSE

Students who can afford the time may take the complete arts course before beginning the technical work of the medical course. A bright, well-trained student not infrequently manages to take the B. A. degree in three years. For such a student, the time needed for the two degrees would be the same as that mentioned above. For other students eight years are required, four for the B. A. course and four for the medical course. A far broader training is thus afforded than in the shorter combined course. Students expecting to finish the clinical part of the medical course at Harvard, the Johns Hopkins, Cornell, or Western Reserve University must choose either the course of study mentioned above or the seven-year combined course. The work in sciences and foreign language should include all of that mentioned in the first two years of the six-year combined course and may profitably extend beyond this.

Credit for Medical Work

Full credit for one year of medical work will not be allowed unless the required preliminary studies and the studies of the first year of the medical course have been completed, and the student has been registered two semesters in the Medical School. Full credit for two years of medical work will be granted only to those who have satisfied the preliminary requirements, who have registered for two college years as medical students, and who have completed all the required studies of the regular curriculum.

COURSES FOR PHYSICIANS

The regular courses in the various departments are open to physicians on the adult special basis. It is hoped gradually to develop such shorter special courses as may be of greatest direct, practical benefit to the physicians of the state in aiding them to keep up with the rapid advance in the medical sciences. Suggestions concerning such courses are desired.

COURSES IN PUBLIC HEALTH

PROFESSORS RAVENEL, EYSTER, BUNTING; ASSOCIATE PROFESSOR W. D. FROST; ASSISTANT PROFESSORS B. M. ALLEN, R. H. DENNISTON; MR. E. R. MILLER, MR. HUTCHCROFT, DR. C. A. HARPER.

In conjunction with the State Department of Public Health a course is offered extending over one year and leading to a Diploma of Public Health. This course will be open to those who have received a degree in medicine or in medical or sanitary science and desire to fit themselves especially for public health work. It is also planned to offer a short course each year for those already engaged in public health work, but who desire more insight into certain aspects of this work. The following course leading to a diploma of Public Health is provisionally announced for the year 1912–13. The degree, Doctor of Public Health is conferred in the Graduate School. For details see the announcement of the Graduate School.

FIRST SEMESTER

1. Bacteriology for Health Officers. To be given in conjunction with medical bacteriology but with special laboratory work and some special lectures. *Tu., W., Th., F., S.*, 11; *five credits.* Dr. RAVENEL.
2. Physiology. Respiration, dietetics, the chemistry of food, air, water, sewage, etc. *Lectures daily at* 11; *laboratory work M., W., F.*, 2:30 *to* 4:30. Dr. EYSTER.
3. Meteorology. Mr. MILLER.
4. Medical Zoology. *Tu., Th.*, 1:30 *to* 4:30. Mr. ALLEN.

SECOND SEMESTER

1. Special Bacteriology, Pathology, and Hygiene for Health Officers. To include bacteriology of air, water, food and soils, epidemiology, diseases of animals transferable to man, occupational diseases, etc., *Tu., Th., F., S.*, 9. Dr. RAVENEL, Dr. BUNTING.
2. Microscopical Examination of Drugs and Foods. *M., W., F.*, 10 *to* 12. Mr. DENNISTON.
3. Public Health Administration and Vital Statistics. Mr. Hutchcroft. Course to be arranged for afternoon work in conjunction with the following course.
4. Practical Field Work. Including use of Disinfectants, inspection of slaughter houses, cow sheds, meats, schools, factories and work shops. Mr. FROST, Dr. HARPER.
5 Hydrology. *Two credits.* Mr. MEAD.

During the second semester Dr. J. O. Cobb, Surgeon U. S. Public Health and Marine Hospital Service will give a series of lectures on National and Interstate Quarantine and Dr. G. P. Barth, Chief Medical Inspector of Schools of Milwaukee will give a series of lectures on School Hygiene.

SCIENTIFIC INVESTIGATION

It is desired that the facilities of the various laboratories of the Medical School be utilized to the greatest advantage in the investigation of the causes and prevention of disease both in man and animals. The laboratories of the Medical School are freely open to those engaged in such investigations and so far as possible, aid will be given in the carrying out of investigations of this character either at the University or elsewhere in the state.

DEPARTMENT OF INSTRUCTION

For a description of the courses in botany, zoology, chemistry, physics, psychology, climatology and languages, see departmental announcements in the College of Letters and Science.

ANATOMY

PROFESSOR BARDEEN; ASSOCIATE PROFESSOR W. S. MILLER; DR. WERBER.

A group of courses intended to offer a comprehensive view of the gross and microscopic anatomy and the embryology of mammals with especial reference to man is given in this department. In addition, opportunities are offered for advanced work and research in anatomy and for a study of some of the lower animal types of special interest in medicine. The laboratory is thoroughly equipped with apparatus, models, books, and materials for advanced as well as elementary work.

For those prepared to carry on advanced research, special laboratory facilities are provided.

A Journal Club meets bi-weekly for the discussion of important contributions to anatomical science.

For Undergraduates and Graduates

105. Comparative Mammalian Anatomy. *Second semester; M., W., F.*, 1:30 *to* 3:30; *three credits.* DR. WERBER.

110. Histology and Organology. The study of the tissues, histology is first taken up, and this is followed by the study of the minute structure of the chief mammalian organs. *First semester; M., W., F.*, 9 *to* 12; *four credits.* DR. MILLER.

115. Vertebrate Embryology. The development of the frog, chick, and pig is studied by means of dissection and the use of microscopic preparations. Human embryology is studied from sections, special preparations, and models. Given in conjunction with the department of Zoology.

Second semester; Tu., Th., S., 8 *to* 10; *three credits.* Dr. BARDEEN, Mr. ALLEN.

121. Human Anatomy. In this course a thorough training is offered in the dissection of the human body, and in descriptive human anatomy. *Throughout the year; daily* 8 *to* 5:30; *at least* 12 *hours' laboratory per week required; six credits per semester.* Dr. BARDEEN.

122. Topographical Anatomy. A study of frozen sections and special preparations. *Second semester; Tu., Th.*, 1:30 *to* 3:30; *two credits.* Dr. MILLER.

123. Special Human Anatomy. Those qualified to do independent work may make special arrangements for the study of human anatomy.

126. Neurology. This course consists of dissection of the human brain, and a study of the microscopic anatomy of the central nervous system and sense organs. Open only to those who have taken courses 110 and 115, or their equivalents. *Second semester; M., W.*, 8 *to* 11; *three credits.* Dr. MILLER.

130. Advanced Work in Anatomy. Opportunity for advanced study in the field of human and comparative anatomy, gross and microscopic, in embryology and experimental morphology, and in laboratory technique is offered to properly qualified students. This work will be done under the direction of various members of the staff.

131. Historical Seminary. This meets bi-weekly for the study of the history of anatomy and related subjects. *One credit.* Dr. MILLER.

For Graduates

235. 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.

236. Journal Club. This meets bi-weekly for the study of current scientific articles relating to anatomy.

240. Independent Investigation. The department will welcome independent investigators who wish to make use of its facilities for conducting research in anatomy.

BACTERIOLOGY AND HYGIENE

PROFESSOR RAVENEL; ASSOCIATE PROFESSORS FROST, HASTINGS; ASSISTANT PROFESSORS FULLER; DR. SMITH, MR. NELSON; MISS ARMSTRONG, MR. NEUMANN.

For students desiring a general laboratory course in Bacteriology, course 1 should be taken. Chemistry and General Biology should precede this work. On the basis of this general course, the student is then able to take up special work in Medical Bacteriology. Course 1 is a prerequisite for major work in Medical Bacteriology.

For Undergraduates

1. General Bacteriology. *First semester; lectures, Tu., Th.,* 11; *laboratory work four hours a week; three credits.* Mr. FROST, Mr. FULLER, Mr. NELSON, Mr. NEUMANN, Miss ARMSTRONG.
2. Medical Bacteriology. This course, which is especially designed for medical students, considers the bacteria and protozoa that are especially concerned in the production of disease processes. *First semester; Tu., W., Th., F.,* 8 *to* 11; *five credits.* Dr. RAVENEL, Mr. FROST, Dr. SMITH.
4. Topical Work in Bacteriology. Dr. RAVENEL, Mr. FROST.
5. Research Work in Bacteriology. Dr. RAVENEL, Mr. FROST.
7. General Hygiene. *First semester; one credit.* Mr. FROST.
8. Biology of Water Supplies. Lectures and laboratory work. *Second semester; three credits.* Dr. RAVENEL, Mr. FULLER.
11. Immunity. Includes a study of the phenomena and theories of immunity in general as well as the various infectious diseases. Lectures and reports. Open only to advanced students. *First semester; one credit.* Dr. RAVENEL.

11a. Laboratory Course in Immunity. This is an experimental course and includes a study of cytotoxins, agglutinins, precipitins, toxins, antitoxins, opsonins, etc. *First semester; two or more credits.* Mr. FROST.

12. Pathogenic Protozoa. This includes a study of the most important of the protozoa known to cause human and animal diseases. Open only to advanced students. Lectures, demonstrations, and reports. *Second semester; one credit.* Mr. FROST.

40. Journal Club for instructional force and advanced students. Meets every second week throughout the year.

CLINICAL MEDICINE

PROFESSOR EVANS; ASSISTANT PROFESSOR VAN VALZAH; DR. SCHUMACKER, DR. MORRIS

1. Clinical Diagnosis. *Normal and pathological clinical diagnosis. Lectures, M., F.,* 1:00 *to* 2:30; *demonstration, M., F.,* 2:30 *to* 4:30; *three credits.* Dr. EVANS.

2. Clinical laboratory diagnosis: Examination of urine, blood, gastric contents, feces, sputum, and exudates in pathological conditions. *W.,* 1:30 *to* 4:30 *one half of semester; one credit.* Dr. SCHUMACKER.

3. Minor surgery and bandaging; demonstration of the practical application of the principles of asepsis, and antisepsis; of bandaging and treatment of injuries and inflamations. *W.,* 1:30 *to* 4:30 *one half semester; one credit.* Dr. VAN VALZAH.

4. Advanced work in clinical diagnosis and in experimental medicine. Serum diagnosis, vaccine theropy. Dr. EVANS and members of the staff.

PATHOLOGY

PROFESSOR BUNTING; DR. JONES.

Courses 1 and 3 are open to students who have successfully completed courses in histology and embryology. Course 1 is required of medical students. Course 3 is optional and is limited to 6 students.

1. General Pathology. The principles of general human pathology and the essentials of pathological anatomy. The laboratory exercises will be devoted mainly to a study of pathological histology and to demonstration of gross morbid specimens. *Second semester; T., W., Th., F.,* 8 *to* 12; *six credits.* Dr. BUNTING, Dr. JONES.
3. Experimental Pathology. In this course by suitable experiments the work of course 1 will be supplemented and elaborated. *Second semester; M.,* 8 *to* 12; *two credits.* Dr. BUNTING, Dr. JONES.
4. Advanced Courses. To a limited number of students who have completed course 1 or its equivalent, opportunity is offered for advanced work in pathology under the direction of Dr. BUNTING.
5. Journal Club. In conjunction with the departments of Physiology and Pharmacology, the recent literature of medical science is reviewed and discussed. *Throughout the year; Tu.,* 10.

PHARMACOLOGY AND TOXICOLOGY

PROFESSOR LOEVENHART; MR. TATUM.

Elementary and advanced courses in pharmacology and toxicology are offered in this department. For the elementary courses a previous training in physiological chemistry and physiology is required. The advanced courses are open to those who have had adequate elementary training.

1. Toxicology. Lectures on the general action of toxic drugs, on diagnosis of poisoning, treatment, and the mode of

conducting an autopsy when the tissues are to be subsequently examined chemically in medico-legal cases. *First month, first semester; M.*, 8; *Tu., Th.*, 1:30; *S.*, 11; *one credit when accompanied by course* 2. Dr. LOEVENHART.

2. Toxicology. Laboratory course. A chemical study of the principal volatile poisons, the alkaloids, the glucosides and the metallic poisons. Special attention is given to the chief tests for the identification of these poisons. *First semester; S.*, 8 *to* 11 *till Christmas.* Dr. LOEVENHART, Mr. TATUM.

4. Pharmacology. Lectures on the chemistry, the pharmacological and toxicological actions and the therapeutic uses of the chief medicinal drugs. Practice in prescription writing. From the conclusion of course 1 to the end of the first semester. *M.*, 8; *Tu., Th.*, 1:30; *S.*, 11, *three credits.* Dr. LOEVENHART, Mr. TATUM.

5. Pharmacology. Laboratory course. Experimental studies on the action of drugs. *From Christmas to the end of the semester. M., W., F.*, 1:30 *to* 4:30; *one credit.* Dr. LOEVENHART, Mr. TATUM.

8. Advanced Work. Those qualified to undertake advanced work and research in pharmacology and toxicology may make arrangements for conducting such work under the supervision of Dr. LOEVENHART.

12. Independent Investigation. To anyone qualified to carry on work of this character the facilities of the laboratory are available.

16. Journal Club. A meeting of the Journal Club is held weekly. Advanced students will be expected to report from time to time upon current papers dealing with pharmacology and toxicology. *Throughout the year; Tu.*, 9.

PHYSIOLOGY AND PHYSIOLOGICAL CHEMISTRY

PROFESSOR EYSTER; ASSISTANT PROFESSORS BRADLEY, MEEK; MR. PETERSEN.

The following courses are designed especially for students studying medicine. Course 4 is open only to those who

have had a previous training in General and Organic Chemistry (courses 1 and 120), Physics (course 1) and General Biology (course 1). As a preparation for course 5, Comparative Anatomy, Histology, and Neurology (Anatomy 105, 110 and 126), and course 4 are required.

4. Physiological Chemistry. (a) Lectures. These give a brief summary of the province of physiological chemistry. (b) Laboratory course. *Second semester; Tu., Th., S.*, 10 *to* 12; *F.*, 8 *to* 12; *four credits.* Dr. BRADLEY.
5. Physiology. Lectures and demonstrations. *Second semester; M., W.*, 11; *two credits.* Dr. EYSTER, Dr. MEEK.
6. Physiology. (a) Lectures and demonstrations. *First semester; M., Tu., W., Th., F.*, 11; *five credits.* (b) Laboratory work. *First semester until Christmas recess; M., W., F.*, 1:30 *to* 4:30; *two credits.* Course 5 is prerequisite. Dr. EYSTER, Dr. MEEK.

For Graduates

208. Advanced Laboratory Course in Physiology. This course is designed primarily for teachers of animal physiology as well as for physicians and students of medicine who desire a wider experience in experimental physiology than can be gained in courses 5 and 6. The instruction is given individually and may involve undertaking a definite investigation. Dr. EYSTER.
210. Advanced Laboratory Course in Physiological Chemistry. This course corresponds to course 208.

THE SCHOOL OF MUSIC

LOUIS A. COERNE, Director, Professor of the History and Science of Music.

GENERAL ANNOUNCEMENT

It is the purpose of the School of Music to furnish facilities for the study of music in all of its branches, theoretical or practical. Instruction is offered in voice culture, pianforte, organ, violin, and all orchestral and band instruments; and in aesthetics, history of music, choral practice, harmony, counterpoint, composition, and methods in public school music. In the study of instruments or singing (voice culture), private and individual instruction only is given.

The general classes in harmony, counterpoint, history of music, musical composition, methods in public school music, principles of music education, musical appreciation, masterpieces of music, and choral music, may be taken as electives by students of the College of Letters and Science, freshmen excepted, and credit is given on the same basis as for other collegiate studies. These credits to students of the University other than students of the School of Music are limited to twenty. These classes are likewise open to students of other schools and colleges of the University without extra fees.

Students of the School of Music not otherwise connected with the University are admitted to these classes on the payment of the usual incidental fee charged to students of the College of Letters and Science ($12 per semester).

Advanced instruction in pianoforte, organ, voice culture, and violin may be taken as electives by juniors and seniors of the College of Letters and Science, and credit, not to exceed a total of ten semester hours, is given on the same basis as for other collegiate studies.

Special instruction in vocal or instrumental music may be taken by students not otherwise connected with the University, and such students are not required to pay the incidental fee required of all University students, but they must be able to satisfy the usual entrance requirements.

Special students, twenty-one years of age, are admitted to the School of Music, under the regular provisions of the university, as "Adult Special Students."

Special students, under twenty-one years of age, who have unusual musical talent, may, in exceptional cases, be admitted to the School of Music on the recommendation of the faculty of the School, although they may not be able to fully satisfy the entrance requirements.

Students wishing to enter the School of Music will apply to the Registrar, Room 158, University Hall.

A detailed statement of musical courses will be found under Music in the College of Letters and Science.

THE COURSE OF STUDY PURSUANT TO THE DEGREE OF GRADUATE IN MUSIC

MUSICAL REQUIREMENTS FOR ENTRANCE

Organ

No previous knowledge of organ playing is required, but the student must be well grounded in pianoforte playing, must possess a correct technique, and be able to read plain four-part music.

Pianoforte

Applicants for admission will be expected to play music of the grade of Mozart's *Sonata in D major No.* 3, Peters Edition; Loeschhorn, *Op.* 52 and *Op.* 66; Bach, *Little Preludes.*

Violin

Candidates must be well grounded in correct position, intonation, tone, and bowing, and must have mastered the equivalent of David's Violin School, Part 1, and the easier pieces of Dancla, Alard, and others.

Voice Culture

The student must be able to read simple music and must have had an amount of training equal to the first half of Concone, with the usual technical study for the same period.

The course in applied music covers four years, two half-hours of instruction per week, or the equivalent, in organ, pianoforte, violin, or voice culture, and includes the study of the classic, romantic, and modern schools.

COURSES OF INSTRUCTION

FRESHMAN YEAR

First Semester—Applied Music: 2 half-hours of instruction and not less than 6 hours' practice per week, 2 credits; Theoretical Subjects: Theory of Music 1, 2 credits; Sight-reading and Ear-training, 3a, 1 credit; Elementary Harmony 4, 2 credits; English 1, 3 credits; *French, German or Italian, 4 credits; Physical Education. Total: 14 credits. *Second Semester*—Applied Music: 2 half-hours of instruction and not less than 6 hours' practice per week, 2 credits; Theoretical Subjects: Theory of Music 2, 2 credits; Sight-reading and Ear-training 3a, 1 credit; Elementary Harmony 4, 2 credits; English 1, 3 credits; French, German or Italian, 4 credits; Physical Education. Total: 14 credits.

SOPHOMORE YEAR

First Semester—Applied Music: 2 half-hours of instruction and not less than 6 hours' practice per week, 2 credits; Theoretical Subjects: Sight-reading and Ear-training 3b, 1 credit; Advanced Harmony 7, 2 credits; History of Music 12, 2 credits; English 30, or other elective in English, 3 credits; French, German or Italian, 4 credits; Elective, 2 credits; Physical Education. Total: 16 credits. *Second semester*—Applied Music: 2 half-hours of instruction and not less than 6 hours' practice per week, 2 credits; Theoretical Subjects: Sight-reading and Ear-training 3b, 1 credit; Advanced Harmony 7, 2 credits; History of Music 13, 2 credits; English 30, or other elective in English, 3 credits; French, German or Italian, 4 credits; Elective, 2 credits; Physical Education. Total: 16 credits.

---

*Note.—French 1, 4 or 10. German 1, 2 or 2A. Italian 1.

JUNIOR YEAR

First Semester—Applied Music: 2 half-hours of instruction and not less than 6 hours' practice per week, 2 credits; Theoretical Subjects: Counterpoint 8, 2 credits; Musical Appreciation 14, 2 credits; Physics, Course in Acoustics, 2 credits; English, French, German or Italian literature, 3 credits; Elective, 4 credits. Total: 15 credits. *Second Semester*—Applied Music: 2 half-hours of instruction and not less than 6 hours' practice per week, 2 credits; Theoretical Subjects: Counterpoint 8, 2 credits; Masterpieces of Music 15, 2 credits; English, French, German or Italian Literature, 3 credits; Elective, 6 credits. Total: 15 credits.

SENIOR YEAR

First Semester—Applied Music: 2 half-hours of instruction and not less than 6 hours' practice per week, 2 credits; Ensemble Playing 17, 2 credits; Theoretical Subjects: Instrumentation 11, 2 credits; Work on Thesis or Recital, 2 credits; Elocution (Public Speaking 12a), 3 credits; Elective, 4 credits. Total: 15 credits. *Second Semester*—Same as First Semester. Total: 15 credits. Total for four years: 120 credits.

All candidates for the degree of Graduate in Music are required to pursue their studies in accordance with the above schedule.

Voice students are subject to the following exceptions: *First*, membership in the Choral Union is obligatory, unless excused by the director. *Second*, at least two years of pianoforte study are required in addition to the prescribed work in voice, but the second year of pianoforte study is substituted for elective in the second year. *Third*, Counterpoint, Instrumentation, and the Ensemble Playing of the fourth year are not required.

Organ students are subject to the following exception: Those not sufficiently proficient may be required to take work in pianoforte during the first and second years, this to be decided by the instructor and the director.

Violin students are required to take two years of pianoforte study in addition to the prescribed work in violin, and may substitute those credits for electives.

One hundred and twenty credits are required for graduation. There is opportunity for a liberal choice of electives in addition

to the required studies enumerated above. These may be chosen from other courses offered by the School of Music, or by other departments of instruction in the university on consultation with the director or an adviser appointed by him.

Students must prove their efficiency before their graduation either by giving a recital or writing a thesis on a given topic. Students are allowed a choice of these alternatives on consultation with the director or an adviser appointed by him. Two credits are allowed for either recital or thesis.

Required hours for graduation: 15 hours (each counted as one credit) per week for four years, but these may occasionally be reduced to 14 hours or increased to 16 hours for a single semester, according to the number of hours offered in a particular subject. No student is required to take more than 120 credits (hours).

PUBLIC SCHOOL MUSIC

General Course for Grade and High School Teachers

This course is designed for teachers who expect to combine the teaching of other branches with the subject of music, in grade and high schools. The class meets 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 is of value to those who expect to teach in the public schools or who wish to conduct high school courses, and includes systematic training in conducting. The course is open to University students without an additional fee. Persons not in the University are admitted on the payment of the incidental fee of $12. (Collegiate Course 5, *Tu.*, *Th.*, 10; *two credits.*)

Course for Supervisors of Music in Schools

This is a two-year course designed for those who wish to fit themselves for the supervision of music in the public schools. Classes are held for the consideration of the following work: rote songs and their application to school work; the elements of music as presented in the grades; study of the child voice; the supervisor's problems and how to meet them; study and interpretation of school songs; outlining of material; music in the high school.

Students regularly enrolled in the Supervisor's Course will be allowed one credit per semester for work in pianoforte, and one credit per semester for work in voice culture, under the provisions of Electives.

Students who, upon entering, do not show suitable proficiency in pianoforte playing or singing (voice culture), will be required to take instruction in one or both at the discretion of the director and the instructor of Public School Music.

Students are required to take from 14 to 16 hours per week in recitations, lectures, etc., making 30 credits for the year and 60 credits for the course.

A Supervisor of Music Certificate is granted on the completion of the course. Students expecting to proceed to the degree of Bachlor of Arts must satisfy the requirements for that degree. The requirements for admission to the Supervisors' Course are the same as for all other courses in the University.

The required work is as follows:

FIRST YEAR

First Semester—Methods 6a, 2 credits; Practice-teaching 6b, 1 credit; The Child Voice 6c, 1 credit; Sight-reading and Ear-training 3a, 1 credit; Elementary Harmony 4, 2 credits; English 1, 3 credits; *Elective, 5 credits; Physical Education. Total: 15 credits. *Second Semester*—Methods 6a, 2 credits; Practice-teaching 6b, 1 credit; Conducting 6d, 1 credit; Sight-reading and Ear-training 3a, 1 credit; Elementary Harmony 4, 2 credits; English 1, 3 credits; Elective, 5 credits; Physical Education. Total: 15 credits.

SECOND YEAR

First Semester—Methods 6e, 2 credits; Sight-reading and Ear-training 3b, 1 credit; Advanced Harmony 7, 2 credits; History of Music 12, 2 credits; Musical Appreciation 14, 2 credits; Principles of Education 13, 3 credits; Elective, 3 credits; Physical Education. Total 15 credits. *Second semester*—Methods 6e, 2 credits; Sight-reading and Ear-training 3b, 1 credit; Advanced Har-

* The following courses are open as electives to first-year students: Greek A, Greek 1, Latin A, Latin 1 and 2, French 1, 4, and 10, German 1, 2, and 2A, Mathematics 1 and 2, History 1, 5, and 10, Biology 1, Chemistry 1, Physics 1, Geology 3 and 4, Astronomy 1, Freehand Drawing, 1.

mony 7, 2 credits; History of Music 13, 2 credits; Masterpieces of Music 15, 2 credits; Elective, 6 credits; Physical Education. Total: 15 credits. Total for two years: 60 credits.

Special State Certificate

Students satisfactorily completing the two-year Supervisors' Course will be recommended by the Director of the Course for the Training of Teachers (Dr. E. C. Elliott, University Hall 123) to the State Board of Examiners to receive a special state license to teach.

Public School Drawing

Students who take the two-year Supervisors' Course will find it to their advantage to devote some attention to preparation for the teaching of drawing. For this purpose the following elective courses in the Department of Manual Arts are available: Course 1, Freehand Drawing and Perspective; Course 2, Mechanical Drawing; Course 3, Applied and Constructive Design.

INSTRUCTION IN APPLIED MUSIC

Pianoforte: Mr. Hall, Mr. Luening, Mr. Locke, Miss Regan, Mrs. Sandberg.
Voice Culture: Miss Bergman, Mr. Luening, Mrs. Sanders.
Organ: Miss Eastman.
Violin and Viola: Mr. von Geltch.

Orchestral Instruments

Further instruction in Applied Music, though without credit, is offered in flute, oboe, clarinet, bassoon, saxaphone, French horn, trumpet, cornet, trombone, bass-tuba and all forms of brass instruments for bands, instruments of percussion, violoncello, and double-bass.

Violoncello and Double-Bass: Mr. Mann.
Wood-Wind Instruments: Mr. Saugstad.
Brass Instruments: Mr. Adams, Mr. Mann.

Orchestra

Mr. Mann, Dr. Coerne

The University orchestra is composed of about forty of the students of the University. The purpose of the organization

is the study of the larger classical forms. It is open to all students who have sufficient knowledge of any orchestral instruments to pursue the work profitably. After two semesters' connection with the orchestra a student may receive a credit of one unit-hour for each of the two following semesters. This work is catalogued as Collegiate Course 18.

Band

Mr. Mann

The Regimental Band, of about fifty men, is open to all students possessing the necessary qualifications. Two rehearsals are held each week. Freshmen and sophomores belonging to the band receive credit for military drill. Juniors and seniors are paid a small sum for third and fourth year work. Students who desire to join should confer with the leader.

Choral Union

Dr. Coerne

The Choral Union is an organization of members of the University and citizens of Madison for the purpose of studying and adequately presenting with orchestral accompaniment the oratorios and larger choral works of standard composers. Two public performances are given each year. Rehearsals are held weekly in Music Hall from October to April. Membership is obligatory for students specializing in voice culture at the School of Music, unless excused by the director.

This work is catalogued as Collegiate Course 19, and is open as an elective to students of *all* schools and colleges. University credit of one unit-hour for the whole year is granted at the end of the season. Freshmen are eligible for membership, though without credit for the first year.

University Glee Club

Mr. Stothart

The University Glee Club is an organization of twenty-four men. This club, together with the Mandolin Club, makes at least one extensive tour during the school year. Vacancies are filled by competitive try-out, and membership is open to the entire student body, including graduate students.

University Girls' Glee Club

DR. COERNE

The University Girls' Glee Club is an organization of thirty-two women. While this club gives no out of town concerts, frequent public appearances are made locally. Vacancies are filled by competitive try-out.

RECITALS AND CONCERTS

Artists' Recital Series

The Artists' Recital Series consist of an annual course of recitals by leading exponents in their several specialties. *Educational* values rather than virtuosity or mere sensationalism are emphasized. Several of these recitals are given regularly by members of the instructional force of the University School of Music, since certain educational features, which would present difficulties if reliance were placed on outside talent only, can thus be more effectively emphasized. With the exception of the two home concerts by the Choral Union, which have been merged into the Artists' Series, these recitals consist entirely of Chamber Music, which seeks for the expression of the more refined and subtle effects of musical art.

Students enrolled in the School of Music are charged an incidental fee of fifty cents each semester (payable at the time of registration) which entitles them to attend all these recitals (four each semester).

The privileges of Student Season Tickets at $1.00 for the entire season are not confined to students of the School of Music alone, but are available to *all* students of *all* schools and colleges of the University. They can, if they so desire, also purchase semi-season tickets at 50 cents per semester.

Season tickets at $3.00 are available to the general public. Special season tickets at $2.00 are available to the university faculty as well as to members of their families.

All season tickets entitle one person to a reserved seat for all of the eight concerts, including those of the Choral Union. Single admission tickets with reserved seat for any one concert are available at 25 cents for university students, and 50 cents for others.

These funds are reserved for the purpose of partially defraying the expense of the series.

Student Recitals

Student Recitals, free to all students of the University and open to all others by invitation, are held at frequent intervals during the collegiate year.

Concerts

A course of instrumental and vocal concerts by artists of international reputation is held annually in the University Armory. Both season and single tickets are available.

Frequent concerts are also given by the university orchestra, the band, the glee clubs, and by student organizations interested in musical dramatics.

Equipment

The School of Music is equipped with a large concert auditorium, lecture halls, ten teaching rooms for applied music, eight student practice rooms, a two-manual organ, over twenty pianos, a large number of orchestral and band instruments, an electric piano-player for classroom demonstration, a pianola for so-called student laboratory work, and further musical accessories.

The nucleus for building up an adequate reference library of music and musical literature has been established at the School as supplement to the books available at the University Library.

TUITION FOR THEORETICAL SUBJECTS IN MUSIC

Resident Tuition	Free
Non-resident tuition, per semester	$25 00
Incidental fee for all students, per semester	12 00

All students of the School of Music who are studying for the degree of Graduate in Music or for the Supervisors of Music Certificate must pay the incidental fee of $12 a semester, but neither the incidental fee nor non-resident tuition is required of students taking only applied music in private instruction. Persons who are members of other schools and colleges of the University may take the theoretical courses in music without charge.

TUITION FOR APPLIED MUSIC

(All Branches)

Semester of Eighteen Weeks, Private Instruction Once a Week

½ Hour of Instruction	$20 00
1 Hour of Instruction	40 00

Semester of Eighteen Weeks, Private Instruction Twice a Week

½ Hour of Instruction	$36 00
1 Hour of Instruction	72 00

NOTE.—Students regularly enrolled in the university orchestra or band are entitled to half rates for tuition in stringed instruments, wood-wind or brass.

Other Expenses

Piano practice, each hour daily, per semester	$3 00
Organ practice, each hour daily, per semester	9 00
Artists' Recital fee, per semester	50

RULES AND REGULATIONS

The collegiate year is divided into two semesters of approximately eighteen weeks each, but the tuition for applied music may be paid by half-semester if desired. All fees are payable in advance at the office of the Bursar of Regents. Admission to membership in the classes is not permitted until the fees are paid. No deductions are made for absences except in case of protracted illness, when a rebate of one half the fee for the time lost will be granted.

Students enrolling at any time previous to the fifteenth day of any semester will be charged the full fee for that semester. Students enrolling thereafter may receive some reduction at the discretion of the Director.

GENERAL INFORMATION

No student is expected to take part in any public musical performance without the consent of his instructor and the Director.

Students, who by reason of deficient musical ability, neglect of study, or any other valid reason, fail to make satisfactory progress, may be dropped from the classes.

The School of Music Calendar is the same as that of the University.

In addition to the numerous practice pianos that are available at the School, pianos may be rented from local dealers at from three to six dollars a month.

Students in Applied Music may enter at any time.

Students will register at the office of the Registrar of the University.

The office of the Director in Music Hall at the University will be open for several days before the opening of each half-semester for the reception of students and assignment of courses. After the opening of the University the Director may be found at Music Hall from 11 to 12 daily.

For further information address

L. A. COERNE,
Director, School of Music,
The University of Wisconsin,
Madison, Wis.

THE WASHBURN OBSERVATORY

GEORGE C. COMSTOCK, DIRECTOR AND PROFESSOR OF ASTRONOMY;
ALBERT S. FLINT, ASTRONOMER; EDNA M. HILL, CLERK

The Washburn Observatory was established in the year 1878 through the munificence of the late Gov. Cadwallader C. Washburn. Although its obligations and opportunities as a branch of a teaching university have not been ignored, the energies of its staff from the beginning have been directed mainly to astronomical research. Among the lines of research that have been cultivated may be specified the measurement of the positions and motions of the heavenly bodies, the discovery and measurement of double stars, the investigation of variable stars, the study of changes of latitude and the amount and character of the atmospheric refraction, the determination of the amount of the aberration of light, problems of stellar color, proper motions of faint stars, and a systematic investigation of the parallaxes of all accessible stars which have large proper motions.

The principal instruments of the observatory are:

An equatorially mounted telescope of 15½ inches aperture, constructed by Alvan Clark & Sons, and provided with graduated circles, driving clock, a filar micrometer, double image micrometer by Steinheil, a spectroscope, astro-photometer, and a very complete set of eyepieces. A meridian circle, by A. Repsold & Sons, of Hamburg, with collimators, transit micrometer, and the usual accessories of such an instrument. The objective of the instrument was made by the Clarks, and has an aperture of 4.8 inches and a focal length of 58 inches. The circle is graduated to 2 minutes of arc. For several years this instrument has been employed for an extensive series of determinations of stellar parallax. There are also a sidereal clock by Höhwü, of Amsterdam, two mean time clocks by Howard, of Boston, and a chronograph, by Fauth & Co., of Washington.

In the Students' Observatory are mounted a six-inch equatorial telescope, by Alvan Clark & Sons, and a transit instrument of the broken telescope type, by Bamberg. These instruments, while primarily intended for instruction, are well adapted to and are employed for certain classes of original work. In particular, the equatorial telescope has been provided with reflecting prisms (Loewy), and employed as one of the principal instruments of the Observatory in an investigation of the refraction and the constant of aberration; and the Bamberg instrument is used for latitude determinations by the Talcott method and for the time service of the Observatory. The Observatory also possesses a considerable number of subsidiary instruments, such as portable telescopes, spectroscopes, photometers, chronometers, sextants, an engineer's transit, an altazimuth, a universal instrument of the German type, a personal equation machine, a spherometer caliper, seismoscopes, photographic apparatus, and a complete set of meteorological instruments.

The Woodman Astronomical Library, established in connection with the Observatory, and supported from the income of a fund given by the late Cyrus Woodman, Esq., possesses a large and valuable collection of works upon astronomy and kindred subjects.

By provision of law the results of important investigations conducted at the Washburn Observatory are published by the State, and under this provision twelve volumes, representing the more important work done at the Observatory, have been issued.

Students of sufficient technical attainments are admitted to the Observatory and take part in the investigations in progress. Meritorious original work of such students may be included in the Publications of the Observatory, or in the Bulletins of the University. For the courses of instruction in astronomy see Index, under **Astronomy.**

UNIVERSITY EXTENSION DIVISION

(The Extra-mural College)

LOUIS E. REBER, Dean.

WILLIAM H. LIGHTY, Secretary, Correspondence-Study Department.

FRANK A. HUTCHINS, Secretary, Debating and Public Discussion Department.

JOHN J. PETTIJOHN, Secretary, Department of Instruction by Lectures.

———————— Secretary, Department of General Information and Welfare.

FORD H. MACGREGOR, Chief, Municipal Reference Bureau, Department of General Information and Welfare.

EDWARD J. WARD, Adviser, Bureau of Civic and Social Center Development, Department of General Information and Welfare.

THE ORGANIZATION

The work of the University Extension Division is divided into four departments as follows:

I. Correspondence-Study
II. Instruction by Lectures
III. Debating and Public Discussion
IV. General Information and Welfare

Object

The object of this University in carrying on extension work is to serve the citizens of the commonwealth who are unable to attend established educational institutions, to stimulate and guide them in the pursuit of a higher and more effective education, to enable them to achieve more nearly the best things in life of which they are capable—in short, to build up an extra-mural university, which shall embrace the whole state and which shall

have live, active members in every community in intimate connection with the mother institution.

The constant aim of the Regents has been to make the University the center of every movement which concerns the interests of the state—to give every man a chance to get the highest education possible at the smallest practical cost—to bring the University and the home in close touch.

Historical Development

Step by step the University has broadened its field. In 1866 women were admitted. In 1885 Farmers' Institutes were established in connection with its College of Agriculture. A little later a Short Course in Agriculture was provided. In 1898 the Summer Session was opened for the admission of those who had not time or means to enter as resident students for the long term. To this was added, in 1900, the Summer School for Artisans and Apprentices. The culminating achievement is the establishment of the University Extension Division as an Extramural College.

I. CORRESPONDENCE-STUDY DEPARTMENT

PURPOSE

There exists in every community a considerable class of persons who are unable to adjust themselves to the formal system of education. Such persons have a claim upon the state for educational opportunities outside the formal regime. The Correspondence-study Department serves the needs of men and women in this situation and offers effective individual instruction, which may be pursued in accordance with the requirements of each student in his own home.

Teaching by Mail

The possibility of teaching by correspondence has been demonstrated by practical experiment. While such instruction lacks some of the advantages which resident study gives, it has compensating advantages of its own. In correspondence instruction,

the teaching is personal and individual. Every student studies and recites the whole lesson, comes in contact with the teacher as an individual, not as a member of a large class. Correspondence-study employs the spare time of the student, and gives him an interest beside his daily work. It can be done at home and thereby brings into the home a new and enlarging influence. Correspondence work, moreover, throws a man upon his own resources and makes him self-reliant and self-determining.

Plan and Scope

The University of Wisconsin provides through the Correspondence-study Department, non-resident or home study instruction as follows:

I. Certain regular University studies which may, under approved conditions, be taken for credit toward a degree.

II. Advanced courses designed to help persons, graduates and others, in professional or practical life, to keep in touch with certain advancing conditions of science and knowledge.

III. High school and preparatory studies for those for whom the conventional institutions are not available or practicable.

IV. Vocational courses which supply knowledge and training that have a direct bearing upon advancement and efficiency in a given occupation.

V. Elementary and grammar school studies for those who require such instruction for practical purposes.

General Benefits. Persons who are benefited by correspondence-study may be divided into two main classes: 1st, those who have the taste, ability, and inclination to continue their education along such lines as will enrich their lives with a deeper culture, or enhance their opportunities or abilities within their chosen vocations or professions, or fit them for larger positions and services; 2nd, that great class of wage-earners who cannot leave their employment to acquire training directed towards that greater proficiency and skill so much to be desired.

The first class may be roughly divided into (1) those who seek the services of the Correspondence-study Department in keeping abreast of the times with reference to the advances in knowledge that relate to their profession or business, or it may be purely for purposes of general culture; (2) those who wish

to acquire units of credit towards a University degree and (3) those who acquire preparation for entrance to the University.

The second class includes (1) those whom the necessity of earning a livelihood has taken from school before acquiring an elementary education; (2) those who have had the benefits of more or less liberal educational opportunities, but have received no training specially adapted to fit them for their chosen vocations; and (3) those who desire to change vocations and prepare themselves for employment more nearly adapted to their tastes and abilities.

The recognized need for more wide-spread training for people who work, demands that some form of education be provided for their benefit equivalent to that which may be gained in the schools and universities. To this end it is necessary not only to carry the educational opportunity to them wherever they may be, but frequently to arouse and stimulate their interest by demonstrating to them the value of increased fitness. Realizing the importance of such work for the future well-being of the people and for the prosperity of the country, as well as for the maintenance of democratic institutions, the Extension Division proposes to establish district centers through which the entire population of the state will be reached by University benefits.

Industrial Education. The employees of business firms may be greatly benefited by training especially adapted to their work. Where a number of them are engaged in the same or similar studies, classes are formed and met by teachers at frequent intervals.

The method adopted for bringing the subject of correspondence-study work to employees is essentially as follows: The interest of the employer is first enlisted, after which the employee may be approached under favorable conditions. The next step brings the men together to hear of the opportunity University Extension opens to them, how readily they may avail themselves of it, and the benefits to be derived. Every man who registers for a course of studies is met at once by a teacher who learns in a personal interview the exact grade of work for which he is prepared. If large numbers are enrolled, they are grouped in classes of twenty, and in addition to written lessons, receive personal instruction from a teacher who meets them regularly. To a certain extent the classes are graded and, where necessary,

individual teaching is given until the student can take his place in a class.

The instructor engaged in this work gives his entire time to it. He is as familiar with the employee's labor as he is with the lesson text, and, therefore, can help the men to make practical applications of lesson to work.

LABORATORY WORK. Provision is made in connection with many correspondence courses, both in the advanced grade and in the vocational studies, by which laboratory practice forms a part of the instruction. In some courses, laboratory outfits are sent to the student from the University to be set up in his own home. In other cases special arrangements are made for short periods of laboratory practice at Madison. In some studies local branch laboratories will be established where local students may receive special instruction as the correspondence course proceeds.

THE MOTIVE. This system of instruction is designed for persons carrying on their own education. It is open to non-residents as well as to residents of the State of Wisconsin.

The present and contemplated work of the Correspondence-study Department is designed to coöperate with and supplement existing educational agencies. By thus supplementing existing agencies there is established a vastly larger and more democratic instrument for extending the benefits of general and specialized education.

The Method and System

PROCEDURE. The student who wishes to undertake correspondence-study, should first select such course or courses as he may desire to take, and send for application blank. He should fill out the blank with information called for, and return it with required fee to the office of the Extension Division. The necessary textbooks, outfit, etc., may also be purchased through the Extension Division if the student so desires.

THE INSTRUCTION. Upon receipt of application and fee, the first two lessons will be sent, with instructions for study, and methods of preparation, and directions for returning lesson sheets and reports. Each lesson will be returned to the student with such corrections, explanations, and suggestions as may be needed. Lists of books, assignments for reading, and all necessary assistance will be furnished throughout the course, so that

no student will be left without adequate aid and guidance. Questions on the subject in hand are at all times encouraged.

By Whom Prepared. These courses are prepared by the members of the University faculty, and each represents a definite amount of work corresponding to an equivalence of work done in residence at the University, or in the standardized schools of our educational system.

The Unit Course. The unit course is divided, where practicable, into forty weekly assignments. Such a course represents at least an amount of work equal to that done in residence at the University in a full five recitation-hour study per week for one semester, or half year. It is assumed that this work may be done by the average student in forty weeks on a minimum leisure for study of one hour per day, six days in the week. It is, however, the student's privilege to pursue his studies as rapidly as he is able.

The Lesson. The unit course is divided into assignments. In some courses this assignment may call for but a single lesson report, but in other courses the assignment is divided into four, five or more lessons. In all cases the assignment represents an average week's work and not an evening's work, as at school.

Permanence. The department endeavors to make its work thorough and permanent, and the various courses have been arranged in coördination with the regular residence work, the short courses, and the summer session.

Examinations. Examinations are optional with the student, but are required where credits or certificates are sought. These examinations must be taken at the University, or under conditions approved by the University.

Regulations. 1. Students may begin correspondence courses at any time during the year.

2. For admission to the Correspondence-study Department no preliminary examination is required. The student is required to fill out an application blank, giving such information as may be helpful in adapting the instruction to the personal needs of each student.

3. Students who undertake Correspondence-study work for University credit must state this fact in advance and comply with all the requirements of the University.

4. For the benefit of the department it is desired that the applicant state fully the purpose he has in view in taking the work, and also in detail such educational advantages, training, or experience as he may have had. The department endeavors to meet the needs of the individual student by advice and suggestion, as well as by formal instruction, but whenever it finds that the course elected is not for the best interests of the student, it reserves the right to reject the application, or to advise change or discontinuance.

5. Correspondence students will be expected to complete a unit course within twelve months, two courses within fifteen months, three courses within eighteen months from date of registration.

6. During an instructor's vacation, a substitute will be provided to carry on such course or courses, if possible.

7. No fee is refunded because of a student's inability to enter upon or pursue a course for which he has once registered. If an application for instruction is rejected the fee is returned.

8. The fee for a full unit course of forty assignments is only twenty dollars. When the student registers simultaneously for more than one unit course he is eligible to a discount of twenty-five per cent upon the amount of the fees in excess of twenty dollars. These fees are deliberately put upon the lowest operating basis.

Those who care to analyze the cost should bear in mind the fact that the correspondence student is usually engaged in a gainful occupation or profession, whereas the residence student temporarily suspends his earning power. The correspondence student may also be said to be turning his leisure time into economic values by this method. These and many other factors contribute toward establishing this as an inexpensive system of achieving an education. It is individual instruction of the highest order, given under the most trustworthy conditions. The motive is public service, and profit is entirely eliminated.

University Credit

1. Persons who have had the required preparation for admission to the University, will, upon satisfactory completion of a correspondence-study course designed for credit, be awarded a certificate of credit in the University.

2. The maximum credit granted for work done by correspondence-study, however, may not exceed one-half the unit hours required for graduation.

3. At the completion of each correspondence-study course for University credit, the student shall pass an examination held under the direction of the instructor giving such course, or by some one designated by the University for that purpose.

4. Work taken for credit may not be done by any student while in attendance at any institution of learning.

5. In special cases credit may be allowed for correspondence-study courses of preparatory grade to satisfy partial entrance requirements to the University.

6. Credit to an amount not exceeding one-fourth of the unit hours required for graduation may be given at The University of Wisconsin to students of such other correspondence-schools or departments as may be designated by The University of Wisconsin. It is, however, required that such credits shall be subject to the same provisions as are made in The University of Wisconsin, and subject to the action of the accredited schools committee, or the advanced standing committee, as the case may require.

7. Credit records of correspondence-study work are filed in the University Extension office until the student has satisfactorily completed one year of study in residence. When all the requirements are satisfied, the correspondence-study records may be transferred to the Registrar's office and applied toward graduation.

8. All courses offered by the Correspondence-study Department, whether taken for University credit or not, are on a uniform basis in reference to the amount of work covered. Courses which are satisfactorily completed have, therefore, a definite value and all students who successfully complete such courses, will be awarded certificates of the grade in which the work is taken.

CORRESPONDENCE-STUDY COURSES

Many courses here listed involve university credit when desired by properly qualified students. Full and explicit information on any course will be supplied upon request.

Astronomy

DR. EATON

Course 1. Popular Astronomy.

Bacteriology and Hygiene

ASSOCIATE PROFESSOR FROST

Courses: 1. Principles of Elementary Bacteriology; 2. Communicable Diseases; 3. Household or Industrial Bacteriology; 4. Public Health Problems; 6. General Bacteriology.

Botany

PROFESSOR ALLEN; ASSISTANT PROFESSOR GILBERT

Courses: 1. Description and Classification of Flowering Plants; 11. General Botany; 12. Morphology of Seed Plants; 2. General Morphology of Algae; 3. General Morphology of Fungi; 5. Plant Histology; 4. Morphology of Mosses and Ferns; 6. Elementary Plant Physiology; 7. Drug and Food Products; 8. Trees and Shrubs.

Business Administration

PROFESSORS SCOTT, GILMAN, MOORE; ASSISTANT PROFESSORS BUTLER, ELWELL, NEYSTROM; MR. AVERILL, MR. FRAZER, MR. RUNDELL, MISS MACGILL.

General Organization of Business

Courses: 142. Forms of Business Organization; 143. National Organization of Business; 144. City and Town Promotion.

Business Organization by Types

Courses: 145. Individual Ownership; 146. Partnership; 147. Cooperative Industry; 148. The Joint Stock Company; 149. Corporations; 150. Combinations and Community of Interest.

Business Management

Courses: 151. Personal Equations; 152. Plant Management; 153. Sales, Purchase, and Shipping Methods; 154. Advertising Campaigns; 155. Credit and Collections.

Bookkeeping

Courses: 128. Elementary Bookkeeping; 129. Advanced Bookkeeping.

Accounting

Courses: 135. Problems in General Accounting; 136. Cost Accounting.

Accounting Systems for Particular Industries

Course 130 A. General and Cost Accounting Systems for Printers.

Business Law

Courses: 115. Contracts; 122. Commercial Paper; 124. Private Corporations; 198. Insurance.

Economic Geography

Courses: 111. General Economic Geography; 112. World Industries; 113. Commercial Policies and International Trade; 114. Economic Geography of the United States.

Particular Industries

Courses: 185. Transportation; 186. Elements of Money and Banking; 159. Retail Selling and Store Management.

Particular Business Activities

Course: 102. Commercial Correspondence.

Chemistry

Professor Kahlenberg; Assistant Professor Krauskopf.

Courses: 1. Elementary Chemistry; 2 Qualitative Analysis.

Education

Professors Elliott, O'Shea; Associate Professor Henmon; Mr. Wells.

Courses: 1. Principles of Teaching; 2. The Development of Childhood and Youth; 3. Educational Psychology; 6. History of Education; 7. American Educational History; 8. Administration and Supervision of Education.

Courses in Electrical Engineering

ASSOCIATE PROFESSOR JANSKY; ASSISTANT PROFESSORS SHEALY, SHUSTER, WATSON; MR. HILLS, MR. LEHMANN, MR. WINNING, MR. WOOLLEY.

Courses: 301. Mathematics; 302. Mechanical Drawing; 306. Elements of Mechanics; 307. Strength of Materials; 308. Mechanism; 309. Machine Elements; 310. Magnetic and Electric Circuits; 311 Dynamo Electric Machinery; 312. Theory of Alternating Currents; 313. Alternating Current Machinery; 314. Electric Lamps and Illumination; 315. Heat; 316. Central Electric Stations; 317. Power Transmission and Distribution; 317a. Electric Wiring; 318. Telephones and Telephone Apparatus; 319. Meters and Metering; 320. Testing of Electrical Machinery; 321. Electric Railways; 322. Electric Batteries; 325. Compressed Air; 327. Air Brakes.

English

ASSOCIATE PROFESSOR LYMAN; ASSISTANT PROFESSORS BASSETT, BEATTY; MISS BASCOM, DR. PITMAN, MRS. VAN DUSEN

Courses: 1. Elementary English; 61. English Grammar; 2. English Composition, Intermediate; 3. High School English Classics; 63. Grammar Review and Elementary Composition; 75. Review of English Composition; 81. Review of American Literature; 91. Review of English Literature; 62. Advanced English Grammar; 5. English Composition, A; 6. English Composition, B; 7. Advanced English Composition; 10. The Composition of Public Addresses; 16. The Short Story; 51. General Survey of English Literature, A; 52. General Survey of English Literature, B; 31. General Survey of American Poetry; 17A. Shakspere; 17B. Shakspere; 18. The Poetry of Tennyson; 19. The Poetry of Browning; 25. The English Novel in the Nineteenth Century; 4. The Teaching of English; 91. Browning; 92. Early English Tragedy.

French

PROFESSOR SMITH; MR. GALLAND

Courses: 1. Beginners' French; 2. Elementary French; 3. Intermediate French, A; 4. Intermediate French, B; 5. Technical French; 7. Introductory French Prose Composition; 10. General Survey of French Literature.

Geology and Mineralogy

PROFESSORS LEITH, WINCHELL; ASSOCIATE PROFESSOR WHITBECK; ASSISTANT PROFESSOR MARTIN; MR. STEIDTMANN, MR. WILLIAMS, MR. BEAN

Courses: 1. Mineralogy; 2. Economic Geology; 3. Physical Geography; 4. Elementary Geology; 5. Laboratory Work in Physical Geography.

German

PROFESSOR HOHLFELD; ASSISTANT PROFESSOR REINHARD; MR. MÜLLER

Courses: 1. Elementary German, Part A; 2. Elementary German, Part B; 3. Intermediate German, Part A; 4. Intermediate German, Part B; 6. Scientific German; 7. Commercial German; 8. Critical German Prose; 9. Grammar Review; 12. German Composition; 19. Elementary Teachers' Course; 20. Advanced Teachers' Course; 25. Modern German Dramatists; 26. Modern German Novelists; 22. Schiller; 21. Goethe; 29. Goethe's Faust; 30. History of German Literature; 31. History of the German Language. Studies in Lessing, Heine, Uhland, and Modern German Poetry are also available. Courses in Gothic, Old High German, Middle High German, and Old Saxon will also be arranged.

Greek

PROFESSOR SMITH; DR. PITMAN

Courses: 1. Elementary Greek—(summer session); 2. Xenophon's Anabasis; 3. Homer's Iliad I-III or Odyssey VI-VIII; 4. New Testament Greek.

History

PROFESSORS DENNIS, FISH, MUNRO; ASSOCIATE PROFESSOR CHASE

Courses. 1. United States History; 2. American History 1760–1830; 6. English History; 9. Modern European History, Part A; 10. Modern European History, Part B; 12. Medieval History; 20. Ancient History.

Home Economics

MISS ——

Courses: 1. Selection and Preparation of Foods; 2. House Sanitation; 3. House Decoration.

Italian

PROFESSOR SMITH; MR. GALLAND

Courses: 1. Elements of Italian; 2. Reading of Italian.

Latin

PROFESSOR SLAUGHTER; DR. PITMAN

Courses: 1. Elementary Latin; 2. Caeser; 3. Cicero; 4. Virgil: Aeneid; 5. Elementary Prose Composition; 6. Advanced Prose Composition; 7. Livy: Books I and XXI; 10. Cicero: De Senectute; 12. Terence: Phormio and Andria; 14. Horace: Odes; 15. Horace: Satires and Epistles; 16. Catullus; 17. Roman Mythology; 20. Cicero: Letters and Orations. Other advanced reading courses in authors commonly read in colleges.

Mathematics

PROFESSOR SLICHTER; MR. CRAIGO

Courses: 1. Elementary Algebra, Part A; 2. Elementary Algebra, Part B; 3. Plane Geometry; 4. Solid Geometry; 5. Plane Trigonometry; 6. University Algebra; 7. Analytic Geometry; 8. Differential Calculus; 9. Integral Calculus; 10. Applied Mathematics; 11. Elementary Arithmetic; 61. Arithmetic Review; 85. Elementary Algebra Review.

Mechanical Drawing

PROFESSOR PHILLIPS; ASSISTANT PROFESSOR MILLAR; MR. HILLS, MR. WOOLLEY

Courses: 1. Elements of Mechanical Drawing, Part A; 2. Mechanical Drawing, Part B; 3. Descriptive Geometry; 4. Freehand Lettering; 203. Shop Sketching; 204. Shop Drawing; 251. Mechanical Drafting; 255. Machine Design.

Mechanical Engineering

PROFESSORS MACK, MAURER, PENCE, PHILLIPS, THOMAS; ASSOCIATE PROFESSOR THORKELSON; ASSISTANT PROFESSORS CHRISTIE, KEOWN, MILLAR, NORRIS, SHEALY; MR. HILLS, MR. LEHMANN, MR. PARRY, MR. WINNING, MR. WOOLLEY

Courses: 201. Practical Mathematics for Artisans; 201A. Shop Mathematics; 201C. Power Plant Mathematics; 203. Shop Sketching; 204. Shop Drawing; 206. Elements of Mechanics; 207. Strength of Materials; 208. Mechanism; 209. Machine Elements; 210. Advanced Design; 215. Heat; 216. Boilers; 217. Steam Engines; 218. Valve Gears; 219. Gas Engines and Gas Producers; 220. Test Methods; 221. Lubricants; 222. Refrigeration; 223. Heating and Ventilation; 224. Power Plant Economics; 225. Compressed Air; 226. Locomotive Maintenance; 227. Air Brakes; 228. Economics of Train Operation; 229. Electric Machinery; 230. Engine Running; 231. Fuels; 232. The Locomotive; 233. Central Station Design.

Music

MR. CASE.

Courses: 1. Public School Music; 2. Appreciation of Music; 3. Harmony.

Pharmacy

PROFESSORS FISCHER, KREMERS, KAHLENBERG; ASSISTANT PROFESSORS BRADLEY, DENNISTON, GILBERT, KRAUSKOPF; MR. LYNN, MR. LANGENHAN

Courses: 1. Pharmacy, Part A and Part B; 3. General Chemistry, Part A; 5. Inorganic Preparations; 12. Qualitative Analysis; 10. Morphology and Classification of Flowering Plants; 15. Plant Histology; 30. Drug Assaying; 35. Physiological Chemistry; 40. Pharmaceutical Analysis; 45. Microscopical Examination of Food Products; 46. Microscopical Examination of Drugs; 50. Pharmacology; 51. Toxicology.

Philosophy

DR. STARCH; MR. WRIGHT

Courses: 1. General Psychology; 10. Ethics.

Political Economy

PROFESSORS COMMONS, ELY, ROSS, SCOTT; MISS MACGILL

Courses: 1. Elements of Economics; 2. The Labor Movement; 3. Transportation; 4. Socialism; 6. Agricultural Economics; 7. Commercial Geography; 10. Elements of Money and Banking; 11. Practical Banking; 15. Social Psychology; 16. General Sociology; 17. Practical Sociology.

Political Science

PROFESSOR REINSCH; MR. BAILEY; MR. MACGREGOR

Courses: 1. American Government and Politics; 1A. The American Judiciary; 1B. The American Executive and Executive Methods; 3A. American Legislatures and Legislative Methods; 4A. American Diplomacy; 4B. World Politics; 6. American Municipal and Civic Progress; 10. Municipal Government in Europe and the United States; 21. Rural Welfare and Progress; 22. Rural Government.

Spanish

PROFESSOR SMITH; MR. GALLAND

Courses: 1. Beginners' Spanish; 2. Elementary Spanish; 3. Intermediate Spanish.

Structural Engineering

PROFESSOR TURNEAURE; ASSISTANT PROFESSORS HOOL, SMITH, KINNE; MR. FULLER

Courses: 401. Mathematics; 404. Mechanical Drawing; 407. Strength of Materials; 408. Elements of Structures, A; 409. Elements of Structures, B; 410. Roof Trusses; 411. Plate Girder Bridges; 412. Bridge Trusses, Part 1; 413. Bridge Trusses, Part 2; 414. Timber and Combination Bridges; 415. Masonry Structures, A; 416. Masonry Structures, B; 417. Masonry Structures, C; 418. Reinforced Concrete Construction, A; 419. Reinforced Concrete Construction, B; 420. Reinforced Concrete Construction, C; 421. Steel Building Construction; 430. Concrete and Reinforced Concrete Construction; 431. Structural Drafting.

Surveying

ASSISTANT PROFESSOR HOOL

Courses: 1. Plane and Topographic Surveying; 2. Plotting and Topographical Drawing.

Teachers' Reviews

ASSOCIATE PROFESSORS CHASE, FROST, JANSKY, WHITBECK; ASSISTANT PROFESSOR BEATTY; MR. CRAIGO, MR. VAN DUSEN, MRS. VAN DUSEN, MISS SCOTT

Courses: 61. Arithmetic Review; 63. Grammar Review and Elementary Composition; 65. Geography Review; 67. United States History Review; 69. Civil Government; 71. Physiology and Hygiene; 73. School Management; 75. The Common School Manual; 77. Physical Geography Review; 79. English Composition Review; 81. American Literature Review; 83. Cataloguing and Use of the School Library; 85. Elementary Algebra Review; 87. Physics Review; 89. English History Review; 91. English Literature Review; 93. Theory and Art of Teaching.

II. INSTRUCTION BY LECTURES

PURPOSE

It must be borne in mind that University Extension work is primarily educational. This department, therefore, does not pretend to establish a mere entertainment bureau. Its work is of a higher character, in keeping with the ideals of the institution of which it is a part. The Extension Division counts it a greater service to the state to stimulate and encourage a hundred earnest learners, be they homemakers, teachers, bankers, or mechanics, than merely to amuse a thousand listeners. The work is intended to appeal to all classes of society. This is possible in an extraordinary degree on account of its elastic system. This system consists (1) of a university lecture, or a series of lectures, each followed by a discussion; a syllabus planned by the lecturer; a study club; and essays and other written work for

those who desire lasting educational results. It is obvious that not everyone in any community will care to follow out this complete program. On the other hand, there will be few to whom the program does not offer something. Business men and mechanics may have time for the lectures only; while others, who wish to develop the intellectual life in their homes, will find time to do some outside reading and attend the meetings of study clubs. Again, (2) some communities desire the single lecture, concert, recital, or reading program, or a miscellaneous combination of these. Such programs are offered by this department with the definite purpose of developing better taste and higher standards with reference to public entertainments, and an appreciation of art, music, and literature by presenting examples thereof.

Lectures at Public Expense

Where courses are arranged for by public school boards, it is possible, under the *act of the Wisconsin legislature of 1901 and 1911*, to have them maintained at *public expense*. By *another act*, passed by the legislature in 1905, *trustees of public libraries are permitted to give the use of the auditoriums* in their buildings for public lectures.

In order to encourage the establishment of such courses of lectures the Extension Division offers to official boards desiring to inaugurate courses, one or two lectures free of cost beyond the actual traveling and other necessary expenses.

STUDY CLUBS.—The Department of Instruction by Lectures is ready to assist study clubs in every possible way. From time to time, the Secretary will visit the different parts of the state and aid the local centers in organizing or perfecting the organization of such clubs. When organized, the Extension Division will be of further assistance either through direct contact of some member of its staff with the class, or through supervision of the work of the class, or through a combination of both the foregoing methods.

UNIVERSITY CREDIT.—Where the work of the study club is of a character approved by the faculty of the University, a certificate will be awarded to the members passing a satisfactory examination, which will have a recognized value on the University records, and which will be credited accordingly, should the holder ever study at the University.

APPLICATIONS FOR LECTURES.—As a rule the members of the Extension staff are free to lecture only on the afternoons and evenings of the last two days of the week. This is especially the case for places at a considerable distance from Madison. It is, therefore, desirable that a first and second choice of lecturer, subject and date (or dates) be given. If a lecturer is desired on some other day of the week, the Extension Division will try to make satisfactory arrangements.

CIRCUITS.—If two neighboring communities, or two centers in the same community, engage the same lecturer for the same day or consecutive days, a circuit is established and the lecturer's expenses are divided between them. For example, a woman's club could arrange for a lecture in the afternoon and the school board of the same place could arrange for another in the evening.

TRAVELING LIBRARIES.—The University Extension Division has in its work the coöperation of the Wisconsin Free Library Commission. The Commission possesses several thousand volumes which it sends in groups to the communities of the state that have no adequate library facilities. Requests for such libraries by University Extension centers will be gladly received by the Secretary, and will be met so far as resources of the Commission will permit. On some subjects it will not be possible to supply groups, for lack of material, and inquiry by correspondence before definite arrangements are made for lectures, is advised in case it is desired to use traveling library groups in connection with the lectures.

STUDY OUTLINES.—The Extension Division will undertake to supply study clubs with outlines of study as far as is possible.

STEREOPTICONS.—For places in which a stereopticon is not available, arrangements can sometimes be made whereby one is furnished by the University, at the expense of the local center.

SYLLABI.—The members of the Extension staff will draw up syllabi of their lectures which will be published by the University. To cover the expense of printing, a charge of a few cents will be made for single copies. Where twenty-five or more are ordered, the charges will be lower.

TEACHERS' CONVENTIONS AND INSTITUTES.—The Extension Division will provide speakers for these meetings as far as the regular work of the University will permit.

LECTURE COURSES

Philosophy

Professor JOSEPH JASTROW. Illustrations of Psychological Principles (Six lectures); The Subconscious (Six lectures); Aspects of Social and Individual Psychology (Six lectures); The Psychology of Social Expression; Popular and Scientific Credulity; Character and Temperament; Some Optical Illusions (Illustrated).

Professor F. C. SHARP. Problems of Moral Progress (Six lectures); Psychology (Four lectures); Moral Education in the Public Schools; The Primitive and Modern Conscience; May a Man Do What He Wills With His Own? The Opportunities of an American.

Dr. H. M. KALLEN. Aims of Art (Three lectures); Philosophy of Art (Ten lectures); Pragmatism (Six lectures); The Meaning of Hebraism (Four lectures).

Education

Professor M. V. O'SHEA. Applications of Psychology to Education and Life (Six lectures); Modern Education (Six lectures); Contemporary Educational Ideals (Six lectures); Hidden Forces in Human Life; Mind-reading, Character-reading, and Other Mysteries; The Child as Revealer of the Past; Individuality; Mental Growth and Control; Education for Social Efficiency; Practical Education; University Education at Home and Abroad; A Silent Architect of Character.

Professor F. D. CRAWSHAW. Home or Community Arts and Crafts; Educational Manual Arts; Vocational Education.

Dr. L. B. WOLFENSON. Ideals in Education and Life; Values in Education; The Evolution of the Practical.

Professor E. C. ELLIOTT. The Evolution of the American School Building (Two lectures); Politics and American Education; Industry and American Education; The Modern Public School Building (Illustrated); The Man and the Job.

Assistant Professor PAUL E. NEYSTROM. Education for Making a Living; Education for Citizenship; Education and Leadership.

Professor CHARLES MCKENNY. Native Endowment; Physical Well Being; Self Expression; Imitation and Suggestion;

Adolescence; Habit; If I Were King; A Standard of Efficiency; School and Life; Dynamics of Life.

History

Dr. REUBEN GOLD THWAITES. The Jesuits of New France; The French Regime in the Old Northwest; Men and Manners in Old Colonial Days; George Rogers Clark (Illustrated); Daniel Boone; The Black Hawk War; The Story of Wisconsin's Boundaries; On the Study of Local History; Among the Pueblos of New Mexico (Illustrated); A Summer in Norway (Illustrated); In Ireland with a Kodak (Illustrated).

Associate Professor W. L. WESTERMANN. Ancient Civilization of Egypt (Illustrated); The Babylonians and Hittites (Illustrated); Pericles and the City of Athens (Illustrated); Alexandria and the Hellenistic Age (Illustrated); Socrates, The Teacher.

Associate Professor R. H. WHITBECK. Geographical Influence in History (Illustrated); Geographical Factors in the Development of Industry (Illustrated).

Associate Professor W. J. CHASE. The History in our Everyday Speech; The Problems and the Aids of the Teacher of History (Two lectures).

Professor FREDERICK L. PAXSON. The Indian Frontier; The Pacific West; The Continental Railways; The Western "isms"; The New Nation; The Overland Trails; The Civil War; American Political Reforms; The War with Spain; The Panic of 1893.

Professor C. R. FISH. The American Frontier 1830; The Texas Question; The Occupation of the Far West; Military and Diplomatic Strategy of the Civil War.

Political Economy

Professor WILLIAM A. SCOTT. A Decade of High Finance; Wall Street and the Nation; New Ideals in Civic Life; Education in the Twentieth Century.

Mr. LOUIS P. LOCHNER. The International Peace Movement; The Cosmopolitan Club Movement; Women's Work for Peace; The University of Wisconsin; The Patriotism of Peace.

Miss CAROLINE E. MACGILL. The Cost of Living; Efficient Democracy (Its Relation to Morals and Physical Health);

Women in Industries; The Economic Independence of Women; The Evolution of the Family; Home Life and Industry in Colonial Days; Social Education of the Child; Social Functions of the Wives and Mothers; Women's Share in Primitive Culture; The Law of Domestic Relations; Marriage Customs in Many Lands.

Sociology

Professor E. A. Ross. Race and Society (Six lectures); The Psychic Life of Society (Six lectures); China in Transformation (Six lectures); The Mind of the Mob; The Near Future of American Society; Modern Sin and Grading of Sinners; Pessimism and the Way Out; Education and Society.

Mr. E. L. Morgan. Community Survey; A Community Program.

Mr. Edward Joshua Ward. The Public School as the Social Center (Illustrated); Playgrounds (Illustrated); The Philosophy of the Common Ground.

Business Administration

Professor S. W. Gilman. Organization, Accounting, Business Forms, Credit Instruments, and Practical Problems (Six lectures); Business Problems (Six lectures); Personality in Business.

Associate Professor B. M. Rastall. The City Beautiful; The Work of Wall Street; The New Business Education; The Fundamental Theory of Life Insurance; Investments; Individual Fortunes and How They are Acquired; Railway Traffic Control.

Dr. Daniel Starch. The Evolution of Modern Advertising (Illustrated); Art in Advertising (Illustrated); "Reason-why" in Advertising (Illustrated); Suggestion in Advertising (Illustrated); Attracting the Reader's Attention (Illustrated).

Political Science

Professor P. S. Reinsch. Political Japan; Reform Movements in China; Asiatic Unity; The Hague Conferences and Tribunal; The Empire Republic of Brazil; The Rise of Chinese Nationalism; Politics and Social Life in South America; Commerce and Industry in South America.

Mr. W. L. Bailey. Rural Life in Wisconsin; A Decade of Rural Progress; Village Welfare and Betterment; Town and Country; Business and Politics; Government and Politics; Citizenship and Reform; The Canadian Northwest (Illustrated); Old Quebec (Illustrated); Men and Movements in Current Politics.

Assistant Professor A. B. Hall. The Scientific Analysis of Political Party Activities; The Development of the City Government; The Growth of Socialism; Boss Rule and the Theory of Democracy; The Cost of our Industrial Prosperity; Education and Democracy; The Playground of Life.

Mr. Ford H. MacGregor. City Government by Commission; What is the Matter with our Cities; Municipal Progress (Illustrated); City Planning.

Greek Life and Literature

Professor C. F. Smith. Greek Life (Six lectures); Greek Literature (Six lectures). (All illustrated.)

Greek and Roman Civilization

Professor Grant Showerman. Greek Architecture. (Six lectures); Greek Sculpture (Six lectures); Historic Sites in Greece (Six lectures); Life of the Ancient Greeks (Six lectures); Historic Sites in Italy (Six lectures); Ancient Rome and its Remains (Six lectures); The Life of the Ancient Romans (Six lectures); Masterpieces of Classical Literature (Six lectures); Modern Italy and its Life (Six lectures). (All illustrated.)

Professor Julius E. Olson. Early Scandinavian History and Literature (Six lectures); Modern Norwegian Authors (Six lectures); A Trip through Norway (Single lecture, illustrated).

German Life and Literature

Professor A. R. Hohlfeld. Goethe: The Man and the Poet (Six lectures); The German Drama of the Nineteenth Century (Six lectures); Glimpses of Modern Germany (three lectures).

Professor Ernst K. J. H. Voss. Die Pflichten und die Rechte der Deutsch-Amerikaner; Die Freundschaft zwischen Goethe

und Schiller, ein Weck-und Mahnruf für uns Deutsch-Amerikaner; Carl Schurz, ein Vorbild für alle Deutsch-Amerikaner; Parzival (One, two, or three lectures); Volks mundart und Schriftsprache in ihrem Verhältnis zu einander; Die Deutsche Kommission der Königlich Preussischen Akademie der Wissenschaften in Berlin; Tristan und Isolde.

Associate Professor EDWIN C. ROEDDER. German Life in Town and Country (Six lectures, partly illustrated); German Women of the Past, and their Contributions to the Advancement of Civilization (Six lectures, partly illustrated); On the Paths of William Tell (Illustrated); The Nibelungenlied (Illustrated); A Trip through the Black Forest (Illustrated); The Heidelberg Castle (Illustrated); The Religion of the Ancient Germans. All of the above lectures in either English or German, as desired.

Assistant Professor SCOTT HOLLAND GOODNIGHT. Bismarck: His Life and Work; German Universities and Student Life; Berlin and Vicinity; The Rhine Region (Two lectures); Dresden and Saxon Switzerland; Leipsig and Jena; Munich and Nuremberg (All illustrated).

Dr. B. Q. MORGAN. Lectures and Recitals on German Folk-Songs; The Middle Ages; Folksong and Hymn; Migratory Melodies; Characteristic Features; Song and the Student; Folksong in German Life.

Assistant Professor M. H. HAERTEL. The Rhine Region; Berlin (Illustrated); Dresden and Saxon Switzerland; Nuremberg; Nuremberg and Rothenburg on the Tauber; The Home of Wilhelm Tell; The Life of Martin Luther; The Passion Play.

English Life and Literature

Professor J. W. CUNLIFFE. Browning and Italy (Two or three lectures); The New Woman in the Old World.

Assistant Professor ARTHUR BEATTY. Chaucer and the Life of His Time (Illustrated); Shakspere and His Time (Illustrated); The Landscape of England and Modern Poetry (Illustrated); The Wit and Humor of England (Illustrated); The Prose Epic of the English Race.

Assistant Professor H. K. BASSETT. A Safe Investment; The Spirit of the Pioneer; The Teaching of English Composi-

tion; The Teaching of Literature; Eugene Field (Lecture-Recital); James Whitcomb Riley (Lecture-Recital); Folk-Lore (Lecture-Recital); Victor Hugo (Lecture-Recital); Festival (Lecture-Recital); (With Mr. I. W. Jones) Songs and Stories for Children; (With Mr. von Geltch) Programs.

Assistant Professor F. W. Roe. Thomas Gray (Lecture-Recital); Oliver Goldsmith (Lecture-Recital); John Keats (Lecture-Recital).

Associate Professor J. F. A. Pyre. American Writers and American Culture (Six lectures); Typical English Poems (Six lectures); Art and Life (Six lectures); Hamlet; Robin Hood; Wordsworth (Illustrated); Byron; Browning; Kipling; Lowell.

Associate Professor Willard G. Bleyer. The Life History of Words (Six lectures); Talk on Writing English (Six lectures); The Teaching of English (Six lectures).

Associate Professor T. H. Dickinson. Present Day Tendencies in the Drama (Five lectures); English Drama in the Nineteenth Century (Four lectures); The Friendship of Books; The Twentieth Century Drama; The New Literary Drama.

Associate Professor R. L. Lyman. Idols and Ideals; Pluck; Qualities of Success; Oratory Since the Civil War; Oratory of Today; The National Holidays; Historic Boston and Vicinity (Illustrated); Washington; Lincoln; Listeners; After Dinner Speaking; Argumentation and Debating; Kipling (Lecture-Recital).

Mr. William Lloyd Davis. The Builders; Kipling (Three lectures); Stevenson (Two lectures); Biography and Books.

Professor Silas Evans. The Battle of Ideas—Militarism vs. Peace; Abraham Lincoln; George Washington; The Art of Reading; Choosing a Job; Social Significance of the Old Testament Prophecy (Six lectures).

The Physical Sciences

Professor Louis Kahlenberg. Chemistry (Six lectures).

Professor Edward Kremers. Pharmaceutical Chemistry (Single lectures or series).

Dean H. L. Russell. Microbes and Their Work (Six lectures); Man and Microbes; Milk Supplies and Public Health; Prevention and Treatment of Consumption; Prevention and

Treatment of Tuberculosis; Water Supplies and Disease; Insects and Disease. (All illustrated).

Professor M. P. RAVENEL. Cause and Prevention of Tuberculosis (Illustrated); Bovine and Human Tuberculosis (Illustrated); Sanitation of the Farm (Illustrated); Value of Pure Water to a Community (Illustrated); Ventilation of Schools and Homes (Illustrated).

Associate Professor W. D. FROST. Communicable Diseases: Their Cause and Prevention (Six lectures); Recent Progress in Warfare Against Microbes (Illustrated); Prevention of Communicable Diseases (Illustrated).

Assistant Professor GEORGE WAGNER. Zoology (Six lectures, illustrated).

Assistant Professor LAWRENCE MARTIN. Geographical Development of Natural Scenery. (One lecture, or in series of six lectures, illustrated); The Inside Passage to Alaska (Illustrated); Alaskan Glaciers (Illustrated); Earthquakes and Shore Lines in Alaska (Illustrated); Alaska and Its Resources (Illustrated); Life of Alaskan Natives (With exhibition of clothing, weapons, ornaments, basket-work, etc.).

Mr. E. F. BEAN. The Inside Passage to Alaska; The Glacier of Alaska; Alaska—Its Possibilities.

Engineering

Associate Professor J. B. THORKELSON. Boilers; Compressed Air Machinery. (Both illustrated.)

Professor C. F. BURGESS. The Electric Furnace.

Lives of Famous Engineers.—Thomas Telford, by Dean F. E. TURNEAURE; George Stephenson, by Associate Professor H. J. B. THORKELSON; John Ericsson, by Professor J. G. D. MACK; George H. Corliss, by Professor ————————; Joseph Henry, by Professor ————————; Sir William Siemens, by Professor C. F. BURGESS. (Illustrated).

Associate Professor CYRIL M. JANSKY. Women in Industry; The Constitution of Matter (Illustrated); Light and Lighting of Homes (Illustrated).

Forestry

State Forester E. M. GRIFFITH. Practical Forestry in Wisconsin (Illustrated); Conservation of our Natural Resources.

Physical Training

Assistant Professor J. C. Elsom. Physical Training (Six lectures); The German System of Gymnastics (Illustrated).

Assistant Professor Abby Shaw Mayhew. Physical Training (Four lectures).

Geography and Travel

Assistant Professor J. C. Elsom. Among the Rockies (Illustrated); Highways and Byways of the South (Illustrated).

Mr. Charles A. Payne. Nature's Story of World Building; The Evolution of Nations; Life Among the Mohammedans; Strange and Funny Things from All the Big World; Legends from many Lands and Centuries; Palestine and the Man of Galilee.

Associate Professor Eliot Blackwelder. Methods of Transportation in China (Illustrated); Chinese Temples and Sacred Places (Illustrated); The People of China and How They Live (Illustrated).

Mr. L. R. Herrick. Ocean Steamships; Tangier, Outpost of Barbarism; A Journey to Paris; Fontainebleau, Versailles and St. Denis; The Chateaux Country; Picturesque Brittany; The Alhambra; Down the Portuguese Frontier (All illustrated).

Professor A. S. Alexander. Scottish Life (Illustrated).

Mr. Basanta Koomar Roy. The Awakening of India; Hindoo Manners and Customs (Illustrated); Education in India—Past and Present; Hindooism—Past and Present.

Commencement Addresses.—The University Extension Division can arrange for commencement addresses to be delivered by members of the University staff. The charges will be arranged in each case for the speaker desired, through the Extension Division.

Expenses

Local Expenses.—These include hall rent, printing, advertising, etc., and the lantern and operator, where the lecture is illustrated.

University Charges.—Lecturers' Fees. Full information concerning lecturers' fees will be supplied on application.

III. DEBATING AND PUBLIC DISCUSSION

PURPOSE

This department aims to arouse and stimulate among all classes of people an intelligent and active interest in important social and political questions. In the belief that there is no form of popular education that tends more essentially to the making of good citizens than study and discussion of live issues, this department collects and maintains a loan library of books and periodicals relating to questions of the day, available upon application, issues bulletins on special topics, and keeps in touch by correspondence or personal interview with civic leagues, town councils, library and school boards, farmers' and business men's clubs, high school and academy societies, and all similar organizations throughout the state.

Loan Material

PACKAGE LIBRARIES.—The collection of loan material for the use of individuals or organizations includes only package libraries on subjects of practical and timely interest—those great questions which are being weighed by the nation or state, as well as those of even closer appeal to the citizen, which relate to the municipal policies of his own community. Mounted clippings from newspapers, sections of periodicals, state and national publications, books, in short everything of value bearing upon questions of current interest, dealing fairly and comprehensively with both sides of the discussion, are accumulated by this department and placed at the disposal of those who will use them.

Bulletins

FORMULATED QUESTIONS.—The bulletins, which fomulate subjects for debate and give full lists of references on both affirmative and negative sides with information as to where and how this data may be obtained either from libraries, archives, or the Extension Division of the University, are widely distributed throughout the state. Such questions as the following are presented: *The Election of Senators by Popular Vote, Consolida-*

tion of Rural Schools, The Immigration Problem, several phases of the "good roads" problem, *Closed vs. Open Shop, The Commission Form of City Government,* and *Increase of the Navy.* The department advises dropping the antiquated questions so popular in the past and grappling in public discussion with the live questions which are now before the people for solution.

The bulletins are distributed within the state free of cost, and loan material is supplied, usually without cost and with as little restraint as possible as to time and conditions of use.

In addition to the publications suggesting subjects for debate, several compact and simple guides have been issued as aids to beginners in the practice of debating. These pamphlets discuss *Debating Societies—Organization and Procedure, Parliamentary Motions,* and *Principles of Effective Debating.* Though designed for the use of beginners, these guides are replete with practical suggestions for experienced speakers and are valued by practiced debaters.

To Whom this Work Appeals

THE DEBATE.—The youths in all graded and high schools, academies, and colleges, in debating and literary societies, as well as the young people organized into clubs and societies by churches, Christian Associations, settlements, and other agencies are making practical and effective use of the direction and assistance offered by this department. The constructive value of this work in the education of the youth for citizenship becomes at once apparent when one appreciates the service that is being rendered not only in direction and stimulation, but also in the preparation of debates, essays, and orations.

THEMES.—In addition to the work with the younger citizens, the department establishes and maintains useful relations with various civic leagues, with the organizations of farmers and of working men, and with women's clubs.

IV. GENERAL INFORMATION AND WELFARE

PURPOSE

In recognizing the public obligation to establish and maintain institutions for higher education and for research, there is also implied the right of the citizens who contribute to the support of these institutions to a share in their fruits. Therefore, in a university which truly serves the commonwealth, there exists a proper place for a department of general information and welfare.

A Clearing House

This department becomes thereupon the clearing-house through which all reasonable inquiries of the people of the state may receive consideration. The department also disseminates methodically, such information or knowledge as is of general service in the well-being, prosperity, and progress of a people.

The researches of government bureaus and commissions, of experiment stations and laboratories, of scientific institutions and associations, are too often imbedded in voluminous or technical reports to serve their full measure of usefulness. The results of this achievement and mastery should find an agency and a form for proper dissemination, which maintains all the essential facts, but adapts them and makes them available for untechnical and democratic needs.

Results of inquiry or research relating to food, hygiene, and sanitation, to the discoveries affecting the prevention and cure of disease, to economic, political, social, and ethical questions, to the problems of general and special education, to the conservation of resources, to agricultural, engineering, manufacturing, and commercial conditions, to recreation and social health, to child labor, to municipal problems, to the abatement of noise, dust, and smoke, to water supplies and garbage disposals, to the aesthetic requirements of life in country and in city, to home furnishing and decoration, to landscape design, to architecture, to music, and to art in general—these are among the topics in connection with which this department may render valuable public services.

Method

This department gathers informational literature, presents it in suitable form for distribution, and encourages its study and use. The department will also secure expert advisers for communities having special problems to solve.

Municipal Reference Bureau

City government touches the citizen at more points and is of more vital importance to his interests, business and personal, than any other government with which he comes in contact. It collects more taxes from him and expends more money. Its problems are among the most complex with which public officials have to deal, and, being largely of a business nature, every mistake which they make helps to raise the citizen's taxes. If these problems are to be wisely solved, if each city is to benefit by the success of other cities and profit by their failures, city officials must have access to all the available information and data to be had upon these various subjects. They must compare notes.

Recognizing these facts, and that such information is both difficult to obtain and hard to keep up to date, a municipal reference bureau is established for the service of the cities of the state. In so far as time and resources permit, it aims to collect and furnish information on all subjects of municipal organization and administration, public works, public utilities and public service rates, municipal employment, paving, sewage disposal, water supplies and water purification, garbage disposal, parks and play-grounds, housing, street cleaning, street sprinkling, dust prevention, smoke abatement, city planning, civic centers, art commissions, care of city trees, schools, charities and corrections, health and sanitation, accounting methods, comparative statistics, commission government, home rule, civic organizations, and all the other subjects of municipal interest, and, so far as possible, to collect and maintain a file of charters and ordinances of the principal cities of the United States, and the available municipal material of the principal cities of Europe and the continent. It has correspondents in most of the principal American cities, and in this way is able to furnish information as to what cities have, for instance, a milk ordinance,

a wheel tax or other ordinance, how they work, and if desired lend a copy of the ordinance. It can tell how boards of public works are organized in various cities, how school boards are constituted, or how street sprinkling or street repairs are paid for. In short, it aims to be a clearing house for municipal experiments and experience.

Bureau of Civic and Social Centers

For the legitimate, free, and healthy expression of the common, civic, social, and recreative life of a community, there must be a natural, common-to-all place of meeting. In our pioneer and rural communities, from the settlement of Plymouth to the present day, there has always been the town hall or schoolhouse center for the community's use. The fruits of the town meeting in the development of American institutions are the pride of all true Americans.

For years there have been sporadic efforts to restore and extend this original practice in the country districts, and to promote the custom in city communities. The expression of this desire has come from so many sources that it has been deemed advisable to establish a bureau of civic and social centers with an expert adviser in charge, whose counsel upon these matters could be had by every community in the state.

During the first year of service through this bureau, many local communities have gathered in their schoolhouses or other public buildings, and formed organizations for free, non-partisan, non-sectarian discussion of public questions for the promotion of civic intelligence.

This association upon common ground, has promoted mutual understanding, the removal of prejudice, the growth of civic friendliness, and a large neighborhood ambition which expresses itself in making provision for opportunities for wholesome recreation and in movements for beautification, improved sanitation, and town promotion. Such increased civic spirit obviously facilitates the enrichment of the common cultural and educational life in many ways, as well as furnishes a more convenient means whereby the various communities may take advantage of the many resources offered by the Extension Division of the University.

Exhibits

Exhibits consisting of statistical charts, pictures, models and descriptive literature interpreted by an expert, may be used as a valuable method of instruction in the care and prevention of diseases. For some years, several departments of the University have coöperated in accumulating a very effective and instructive tuberculosis exhibit, which was perfected by the Wisconsin Anti-Tuberculosis Association preparatory to the International-Tuberculosis Congress at Washington in September, 1908. The Extension Division will send this exhibit to communities in the state upon application, without cost beyond expense of transportation.

Vocational Institutes

An effective form of instruction in the scientific principles underlying and affecting trades, is presented in the vocational institute. Lectures and demonstrations dealing with the latest investigation of experts who stand at the head of their special lines of research are presented in such simple and practical form as to be readily available by the crafts. The proceedings of the Bakers' Institute, for example, have been printed each year, and are mailed to any address on request. The Extension Division will arrange for, and conduct institutes of one or more days' duration as desired.

DEPARTMENT OF PHYSICAL EDUCATION

GEO. W. EHLER, Director, Professor of Physical Education.

Assistant Professors Mayhew, Director Women's Gymnasium, Meanwell, Director Men's Gymnasium, Elsom, Richards, Wilce; Mr. Hetherington; Mr. Driver, Miss Griffin, Miss H'Doubler, Miss Learned, Mr. McChesney, Miss McKee, Mr. Vail, Mr. Wilson; Miss Ayer, Mr. Burdett, Mr. Donnelly, Mr. Finley, Mr. Hyatt; Mr. Kolinsky.

JURISDICTION

The Department of Physical Education has jurisdiction over all athletic, aquatic and gymnastic activities.

AIMS

The aims of the department are as follows:

1. The development of organic power, the basis of vitality, the prerequisite to physical and mental efficiency;
2. To secure and maintain good posture, a harmonious muscular development, and a reasonable degree of bodily skill and grace;
3. To provide an incentive and an opportunity for every student to secure at least one hour's physical recreation daily as a balance to the sedentary demands of university life;
4. To conserve the social and moral values of games and sports and to secure to every student the fullest opportunity for their practice;
5. To develop the "habit of exercise;"
6. To train teachers of physical education and directors of play for service in educational institutions, clubs, playgrounds, municipal recreation systems, etc.
7. To establish high ideals and efficient administration of athletics throughout the state of Wisconsin.

EQUIPMENT

The Men's Gymnasium is 200 feet in length by 100 feet in width. On the ground floor are the offices, locker rooms, bath rooms, swimming pool, and a special gymnasium for corrective exercise. On the second floor there is an unobstructed hall 165 by 98 feet, used for the purposes of military drill and games.

The third floor contains the gymnasium, 165 x 65 feet. The equipment includes the usual apparatus and developing machines. A new annex 225 x 84 feet contains a 12 lap dirt track 12 feet wide, a baseball cage with dirt floor and the rowing room.

The Women's Gymnasium occupies the second and third floors of Lathrop Hall which was erected in 1910. The main gymnasium is two stories high, and has a floor space of 118 by 60 feet. There is a visitors' gallery, a stage, and a running track. The concert room, 72 by 42 feet, is used as a gymnasium for smaller classes.

The Women's Gymnasium is fitted with modern and approved pieces of apparatus, such as ladders, horizontal and parallel bars, horses, bucks, giant strides, chest weights, rowing machines, poles, travelling rings, ropes, booms, stallbars; also a complete outfit of light apparatus, including dumb bells, clubs, wands, foils, bar bells, etc. Two floors of one wing contain dressing rooms, showers, and lockers. On each floor there will be 60 dressing rooms, 30 showers, and 500 lockers. Only one floor is fitted up at present. The swimming pool, 60 by 26 feet, is located at one end of the basement, and is well lighted and ventilated. Adjacent rooms contain dressing rooms, showers and lockers and apparatus for drying the hair. Four bowling alleys are installed in the basement.

A 40-acre athletic field is provided for the use of men students and all intercollegiate and other games and meets are held there. The field is equipped with two large grandstands, a running track, tennis courts, baseball diamonds, football fields, and other necessary features including a hockey field for women. The University roads, drives, and paths afford ideal courses for cross country running. The University boat-house is located next to the gymnasium on the shore of Lake Mendota. The present equipment includes ten shells and a forty horse-power launch.

For outdoor sports in winter there is a toboggan slide, 600 feet long and 100 feet high, running out on to Lake Mendota, and a skating course and hockey rinks. These facilities are lighted at night and are maintained in first class condition.

REQUIREMENTS

Physical Training is prescribed for all freshmen and sophomore students, including special students, throughout the college year, two periods per week for men and four for women.

Men students are required to be able to swim a distance of fifty (50) yards, women, thirty five (35) yards, by the end of the sophomore year.

Students may not be excused from the prescribed training during the first two years without substituting an equivalent satisfactory to the department, or making up the work before graduation.

Credits to the extent of four (4) for men and eight (8) for women must be secured in Physical Education by the satisfactory completion of the regular courses. These credits are determined on the basis of attendance and effort and the attainment of certain standards of organic development, motor proficiency and knowledge of the principles and practice of efficient living.

The prescribed courses are designed to secure a high degree of organic power, harmonious physical development and a reasonable degree of skill and grace.

Election of specialized sports and exercises (course 2) may be made by students as soon as they have attained the minimum standard of vigor, development, and skill. This will usually occur at the end of the first year. Freshmen who have attained the required standard at the time of entrance may elect their exercise under course 2.

For the purposes of this department the college year is divided into three seasons, *Fall*—October and November, *Winter*—December, January, February, March, *Spring*—April, May, and June. During the Fall and Spring all activities are conducted out of doors in as far as the weather will permit. Regular indoor exercise is confined to the winter months.

Men students will provide themselves with suitable clothing for indoor and outdoor activities. The regulation suit consists of white sleeveless shirt, running pants, supporter, and rubber soled shoes. For elementary football and baseball, which are prescribed for all men who have attained the requisite standard of vigor, students will require heavy shoes, stockings, short heavy pants, and negligee shirt or jersey.

For women a uniform suit is required and should be purchased in the Fall in Madison. Price $5.00. Suit should not be made at home without writing for directions.

The locker and laundry fee is $1.25 per semester and required of each freshman and sophomore.

MEDICAL AND PHYSICAL EXAMINATIONS

The organic condition, stage of physical development and degree of motor efficiency attained by each entering freshman and sophomore is determined at the opening of the college year by the following series of examinations and tests:

(1) A complete medical examination given under the supervision and direction of the Department of Clinical Medicine. The findings of this examination together with the recommendations of the department are furnished the Department of Physical Education and appropriate modification in prescriptions of physical exercise are made in accordance therewith.

(2) A thorough physical examination made by members of the staff of the Department of Physical Education. This examination includes the essential measurements of the body (a limited number), certain strength tests and a careful search for abnormal deviations of form, structure, and function.

(3) A series of tests in typical activities to determine the individual's motor efficiency as shown by his agility, muscular control, physical judgment, and posture.

An endeavor is made to determine the student's exact organic condition with a view to outlining for each a proper regimen of exercise, diet, rest, and work. Students are classified on an organic scale and are permitted to engage only in such sports and games as their physical condition fits them for.

No student is permitted to participate in competitive games either of an intercollegiate, inter-department or inter-class grade

unless he is physically fit for the same as determined by the examinations described.

All members of intercollegiate teams are subject to the supervision of the medical members of the staff and every precaution is taken to prevent overtraining, exhaustion or unnecessary strain.

All candidates for foot ball and other teams must be examined by and secure the permit of the Department of Clinical Medicine as well as that of the Department of Physical Education before reporting for practice with their squads.

All Freshman women will meet in Concert Room, Lathrop Hall, Thursday, September 26, at 3:30 to register and be assigned a date for examination. All Sophomore women will register on the same day at 4:30.

TOURNAMENTS AND CONTESTS

The University is a member of the Intercollegiate Conference Athletic Association and maintains representative teams in all intercollegiate sports. No student may be a member of an intercollegiate team unless he is an *amateur athlete* and not until he has been a year in the University, has no conditions in his various courses, and has received a weighted average of 77 in the work of the semester previous to the time he desires to compete.

The Intercollegiate sports are under the government of the Athletic Council, a committee of five members of the faculty appointed by the President. The Director of the Department is the chairman of this committee.

All coaches and assistants are members of the University faculty and of the staff of the Department of Physical Education.

Inter-class and Inter-college tournaments and contests for men are conducted in all games and sports. Their conduct and management is in the hands of the Athletic Board composed of twelve students elected by the entire body of men students.

Similar tournaments and contests in games and sports suitable to women and confined to the women students of the University are conducted and managed by the Women's Athletic Association.

All tournaments and contests are subject to the supervision of the Department of Physical Education.

PROFESSIONAL TRAINING

In order to meet the demand for teachers of physical education, directors of playgrounds and instructors in educational athletics and play of university caliber and training, this department has instituted a comprehensive group of professional courses in the theory and practice of physical education. These with related and prerequired courses in the departments of medicine and education and the foundation courses in the various other departments of the College of Letters and Science offer full opportunity for complete preparation for professional service in public elementary, high and normal schools, preparatory schools and colleges, clubs, social welfare institutions, playgrounds, municipal recreation systems, etc.

Major—Students regularly entered in the College of Letters and Science may elect their major to the extent of forty credits in courses 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 and 19, and take four years in course 20.

Minor—Students in the Course for the Training of Teachers electing the teaching of Physical Education as a minor subject must secure a minimum of ten credits in courses 5, 8, 9, 10, 11, 12, 13, 19—not more than four in 19, and give two years to course 20.

Students electing their minor in Physical Education under the 20 credit rule may not secure more than four credits in course 19 and must give two years to course 20.

Professional Certificate.—Students desiring to receive the certificate for teachers of physical education must comply with the following conditions:—

1. Fulfill all entrance requirements of the College of Letters and Science.

2. Be of sound health with a large measure of organic vigor, have shown an aptitude for the attainment of a high degree of motor efficiency, and give evidence of strong leadership at the time of making major election.

3. Fulfill all regular requirements for the A. B. degree.

4. Secure credits in prerequired and related sciences as follows:—biology—10, chemistry—*, physiology—9, anatomy—5, hygiene—5, psychology—3, sociology—3, education—6.

5. Secure a minimum of forty credits in physical education courses 5 to 19, including thesis—four credits.

6. Devote 10 hours per week for four years to the practice of athletics, aquatics, gymnastics, and military drill (2 periods per week for two years), including practice teaching two hours per week for three years.

7. Demonstrate in practice teaching ability to handle squads, groups, classes and teams, and to organize and direct games, tournaments and contests, etc.

Time of Course—Students are advised to plan to devote five years to this course, giving the entire Freshman year to the general subjects of the A. B. course, securing the degree at the end of the fourth year and the certificate at the end of the fifth year, specializing in the fifth year in the advanced Physical Education courses and related subjects. Freshmen should elect Biology 1 for their science.

SPECIAL TRAINING

Students desiring to specialize as coaches or instructors in certain sports, games or events may do so by taking the required practice courses in course 20 and the required special technique in course 19. No university credit will be given in these courses except to students majoring or minoring in physical education.

VOLUNTARY EXERCISE

All students are urged to secure at least one hour of recreative exercise each day and the facilities of the entire department are open for this purpose whenever not required for prescribed activities. Advice and direction may be secured by any student at any time. All advanced practice courses are open to any student fitted to take them.

A. REGULAR STUDENTS' COURSES

1. Developmental Exercises, comprising graded gymnastics, elementary athletics and aquatics, including the fundamentals and essentials of basketball, baseball, football, dancing, wrestling, swimming, rowing, skating, cross country running, vaulting, jumping, etc. Prescribed for

all freshmen and such sophomores as have not attained the requisite degree of organic power, muscular development, and motor efficiency. Two hours weekly until requisite standard is attained. *One or two credits.*

2. Advanced Exercises. Systematic courses in athletics—track and field events, cross country running, baseball, basketball, football (intercollegiate, rugby, soccer), tennis, field hockey, etc.; aquatics—swimming, rowing, water polo, diving, life saving; gymnastics—advanced apparatus exercises, gymnastic, folk and esthetic dancing, tumbling; wrestling, fencing, and boxing. The work of the various class and varsity teams is included in this course. Open to all students who have attained the required degree of organic power and bodily skill. Two or more times weekly according to forms elected. *One to four credits.*
3. Special Corrective Exercises—designed to give personal instruction and individual training to students whose condition as determined by the medical and physical examination prevents their participation in the regular courses. Time and credit arranged; *one or two credits.*
4. Efficient Living. The laws of personal and general hygiene, the principles of rational work, rest, recreation and nutrition, the correlation of daily conduct and high grade efficiency. Given with courses 1, 2 and 3. Prescribed for all Freshmen and Sophomores. Open to upperclassmen.

The various activities are arranged by seasons as follows:

Fall.	Winter.	Spring.
1. Baseball (modified).	1. Basketball.	1. Baseball.
3. Cross country running.	2. Boxing.	6. Field Hockey
6. Field Hockey.	4. Dancing.	7. Football.
7. Football.	5. Fencing.	9. Handball.
9. Handball.	8. Gymnastics.	11. Rowing.
11. Rowing.	9. Handball.	14. Tennis.
14. Tennis.	10. Ice Hockey.*	15. Track and Field.
15. Track and Field.	11. Rowing.	
	12. Skating.*	
	13. Swimming.	
	15. Track and Field.	
	16. Tumbling.	
	17. Water Polo.	
	18. Wrestling.	

*Part season only and according to weather. May be elected only in connection with some other sport.

B. PROFESSIONAL COURSES

5. History of Physical Education. This course covers the past history of Physical Education, Comparative Physical Education, and the Present Status of Physical Education. It deals with the efforts for physical education among the different races during historic times, especially with those of the Greeks and Romans; with the modern movement, and the development of physical education in Sweden, Germany, and England; and with the present status of this field of education in the United States and in the different European countries. *Two credits.*
6. Kinesiology. The Mechanics of Voluntary Motor Exercise. This course deals with applied anatomy and the mechanics of movement in relation to education. The movements of the body in general are studied. Special attention is given to gymnastic movements. Lectures, demonstrations and discussions; prerequisites, course 20 and anatomy (*). *Two credits.*
7. Physiology of Exercise. A study of the effects of exercise on the organism and functional processes, especially circulation and respiration, nutrition and elimination; the effects of exercises of varying strength, speed, skill, and endurance; a consideration of the problems of breathlessness, fatigue, soreness, and training. Prerequisite, course 6 and physiology 6. *Lectures, laboratory work, and reports; four to eight credits.*
8. The Principles of Physical Education. Physical Education as a conscious social and educational endeavor, using neuro-muscular activities and their physical mental and social results as a means. The results and values of exercise among other factors influencing the growth and development of the child, receive particular attention, also their relation to different individual tendencies and different social conditions. The principles and methods involved in the various systems are analyzed. Prerequisites, physiology (*) and philosophy 1. *Two or three credits.*
9. Nature and Function of Play. A study of play from the standpoint of its influence as a social and educational

force. The meaning of play in the life of the growing child, place of play among the social-recreative customs of peoples, athletics as play, the social and educational possibilities of play, the factors controlling an effective development of the play impulse in the individual and in society, etc. Prerequisites, philosophy 1, education 11. *Two credits.*

10. Physical Education of Children. From the viewpoint of the growth and development of the child and of the factors controlling the same and of the place of motor activities among those factors are considered the values and limitations of schoolroom gymnastics, the need of the larger activities of vigorous play, the problems of play and athletic organization, the use of recess periods, after school use of the playground and gymnasium and other practical problems of administration. Prerequisites, courses 8 and 9. *Two credits.*

11. Physical Education of Adolescents. Characteristics, tendencies, and needs of adolescents, physical education for adolescents with special emphasis on secondary school and college conditions together with consideration of the great non-student groups, classes of exercises to be used, conditions of individuals, methods of studying and dealing with such conditions, organization and management of competitive exercises, the social and moral leadership necessary. Prerequisites, courses 8 and 9. *Two credits.*

12. Growth and Development. Characteristics of growth and development of organs and tissues, nascent periods, acceleration, retardation and maturity of bones, muscles, nerves, heart, lungs and other organs, relation to organic and neuro-muscular education. Lectures, laboratory work. Prerequisite, anatomy (*). *Three credits.*

13. Physical Examinations. Methods of measuring and testing the body, examination of the special senses, vitality, and efficiency tests. Anthropometric methods, their place and values, statistical forms, graphic charts, etc. Determination of normal and abnormal variations. Prerequisite, anatomy (*). *Lectures, demonstrations, practical work; three credits.*

14. Medical Examinations. (Clinical Medicine 1.) Physical Diagnosis of normal and pathological conditions, methods of examination of heart, lungs, kidneys, etc. Prerequisite, anatomy (*), physiology 6. *Lectures, demonstrations, laboratory work; two credits.*

15. Prescription of Exercise. (Gymnastic Therapeutics.) The adaptation of methods of exercise to the development of the individual, correction of abnormal variations, use of special gymnastic appliances, etc. Prerequisites, courses 6, 7, 12, 13, and 14. *Lectures, demonstrations and practical work; two credits.*

*16. First Aid to the Injured. Cause, nature, and treatment of wounds, bruises, sprains, fractures, faints, shocks, etc., poisons, antidotes, stimulants; bandaging, dressings, antiseptics and disinfectants, etc. *One credit.*

17. Organization and administration. Spirit and aims, activities, discipline, etc. of the playground, gymnasium and athletic field. The planning and construction of the gymnasium, the athletic field, playground; gymnastic and athletic apparatus and equipment; the organization and administration of physical exercise in clubs, classes, groups and teams, in social welfare institutions, municipal recreation systems, educational institutions, etc. *Two credits.*

*18. General Technique. This course is associated with the practical procedure of the developmental exercises of course 20. It is fundamental and preliminary to all the courses in technique. Students taking it are required to lead sections in the regular classes in developmental exercises. Lectures, demonstrations, and practice.

*19. Special Technique. Study of the composition of the various forms of exercise, examination of their fundamental principles, determination of their hygienic, educational, and recreative values. Prerequisite, course 18. Personal skill acquired in practice in course 20. *Credit arranged; one to eight credits.*

*20. Practice—Personal proficiency to be secured in following:
1. Developmental Exercises—Four hours per week for two years.

---

* Not open for general credit.

Calisthenics—Corrective Exercises.
Apparatus Exercises—Graded.
Elementary Athletics—Fundamentals and Essentials of Cross Country Running, Starting, Jumping and Vaulting, Baseball, Football, Basketball, Aquatics, Wrestling, etc.

2. *Specialized Exercises—Four to six hours per week throughout first two years; ten hours per week 3rd and 4th years* including Practice Teaching. Gymnastics, Track, and Field and 3 or more Electives. Select from each group at least one major or two minors. Majors in Italics.

INDIVIDUAL EVENTS—Swimming, *Rowing*, Dancing, Tumbling, Skating, Tennis, Handball.
TEAM GAMES—*Basketball*, *Baseball* (Outdoor, Indoor), *Football* (College, Rugby and Soccer), Ice Hockey, Field Hockey, Volley Ball, Water Polo, etc.
ANTAGONISTICS—Boxing, Wrestling, Fencing.

(Students will be required to develop some degree of expertness in at least three of the above in order to secure experience in the processes of training, developing team work, coaching, etc.)

Note—The following courses will not be offered in 1911–1912, 6, 7, 12 and 15.

Special bulletin issued in Sept., 1912 will give days, hours and instructors of all courses.

MILITARY SCIENCE AND TACTICS

First Lieutenant Collin H. Ball, 5th U. S. Infantry, Commandant.

Battalion Sergeant Major, W. G. Atkins, U. S. Army, Retired-Assistant Commandant.

Military instruction at the University of Wisconsin is not elective, but is required by law. The congress of the United States and the legislature of the State of Wisconsin have made it a special and imperative feature of the course of education furnished at this institution. By the regulations of the University, all able bodied male students of the freshman and sophomore classes are required to take military drill unless excused by proper authority.

The work of the military department embraces practical instruction in infantry drill, rifle practice, and first aid to the injured, and a course in drill regulations and lectures on military subjects for cadet officers and the higher non-commissioned officers. One unit hour credit is allowed for each semester.

Students may be excused from drill at the discretion of the commandant on the following grounds only:

1. Students who, prior to entering the university, have received the equivalent of one year instruction in the University regiment, either in the national guard or in a recognized military school, will receive full credit for one year. Those holding an honorable discharge from the army or navy of the United States are exempt from drill.

2. Students from foreign countries, not intending to become citizens of the United States.

3. Students registered as adult specials, not intending to graduate. But should such students change at any time to a full course, they will be required to take the full two years of drill before graduation.

4. Members of the crews or intercollegiate athletic teams may be excused from drill by the Commandant upon the personal recommendation of the Director of Physical Education. When a member of a crew or an athletic team shall be discharged from such crew or team, he will be reported back to the commandant for drill at the next drill succeeding his discharge. The Director of Physical Education will notify the Commandant of the discharge of any student so excused, not later than the date of his actual discharge from an athletic team.

5. Students who find it necessary to secure outside employment to meet their university expenses, when such employment interferes with the drill hour and cannot be arranged otherwise. Those excused under this class will be required to furnish a certificate on the prescribed form, stating that to take the drill would practically compel them to leave the university.

6. Normal school graduates are not required to drill.

Applications for excuse for any cause must be submitted to the commandant on the prescribed blank within two weeks after the beginning of each semester.

Drills will begin at the opening of the first semester, and be held at least two hours a week until April first, and four hours a week thereafter.

All appointments to office in the companies shall originate in the sophomore class but officers may be promoted and continued in office during their junior and senior years.

All students must provide themselves with the cadet uniform described in the regulations for the military department. This uniform can be procured in Madison for about fifteen dollars.

ORGANIZATION

The organization is that of a regiment of infantry, consisting of three battalions of four companies each, a band, drum corps, hospital corps, and such auxilliary tactical units as the size of the corps necessitates. These organizations will be supplied with a full quota of cadet officers. Students will enter the infantry regiment and afterward be specially assigned to the other organizations at the discretion of the commandant.

University fees amounting to ten dollars each semester will be refunded to all cadets who elect to take military drill as commissioned officers, after having completed the drill prescribed

by law. An additional prize of fifty dollars will be paid the cadet colonel and lieutenant colonel, and twenty-five dollars to each major. These officers will act as assistant instructors in Military Science and Tactics.

Upon graduation specially qualified students receive from the Governor of Wisconsin commissions as brevet second lieutenants in the National Guard of Wisconsin, subject to assignment to duty for five years after graduation.

ROSTER OF THE UNIVERSITY OF WISCONSIN

Corps of Cadets

First Regiment

COMMANDANT

First Lieutenant Collin H. Ball, 5th U. S. Infantry.

ASSISTANT COMMANDANT

Battalion Sergeant Major W. G. Atkins, United States Army, Retired.

CADET OFFICERS

REGIMENTAL, FIELD, AND STAFF

Colonel, R. R. Hibbard.
Lieutenant Colonel, L. K. Wilson.
Captain and Regimental Adjutant, H. V. Meissner.
Captain and Regimental Quartermaster, F. V. Vitz.
Captain and Regimental Commissary, V. R. Bacon.

BAND

Captain, C. A. Mann.
First Lieutenant, V. C. Bonesteel.
Second Lieutenant, A. P. Bliss.

FIRST BATTALION

Major, A. J. Barclay.
First Lieutenant and Battalion Adjutant, W. R. Lacey.
Second Lieutenant and Battalion Quartermaster, F. M. Wolverton.

Company A

Captain, L. J. Brady.
First Lieutenant, F. R. Wahl.
Second Lieutenant, J. L. Wallis.

Company B

Captain, G. E. Bennett.
First Lieutenant, E. P. Galloway.
Second Lieutenant, G. W. Smith.

Company C

Captain, E. G. Bailey.
First Lieutenant, R. B. Wilcox.
Second Lieutenant, J. D. Taylor.

Company D

Captain, N. R. Johnson.
First Lieutenant, H. W. Steiner.
Second Lieutenant, J. R. Manegold.

SECOND BATTALION

Major, A. Richmond.
First Lieutenant and Battalion Adjutant, V. L. Bohnson.
Second Lieutenant and Battalion Quartermaster, H. Nelson.

Company E

Captain, A. R. Taylor.
First Lieutenant, G. E. Elwers.
Second Lieutenant, W. C. Dittmer.

Company F

Captain, C. R. Cleveland.
First Lieutenant, H. L. Chesick.
Second Lieutenant, E. G. L. Swanson.

Company G

Captain, D. R. Mapel.
First Lieutenant, F. J. Haner.
Second Lieutenant, C. J. Otjen.

Company H

Captain, E. J. W. Walker.
First Lieutenant, E. G. Teschan.
Second Lieutenant, L. K. Marsh.

THIRD BATTALION

Major, H. L. Kadish.
First Lieutenant and Battalion Adjutant, K. F. Layman.
Second Lieutenant and Battalion Quartermaster, A. C. Norem.

Company I

Captain, E. C. Noyes.
First Lieutenant, H. A. Cobaugh.
Second Lieutenant, A. G. Schneider.

Company K

Captain, C. C. Chambers.
First Lieutenant, M. C. Bruce.
Second Lieutenant, R. F. Kahn.

Company L

Captain, A. T. Hobart.
First Lieutenant, G. E. Arnemann.
Second Lieutenant, W. C. Ketter.

Company M

Captain, C. Wurdemann.
First Lieutenant, M. T. Ray.
Second Lieutenant, H. G. Walters.

DETACHMENT OF ENGINEERS

Pioneer Company A

Captain, E. E. Browning, Commanding Company.
Captain, H. L. Algeo, Attached.
First Lieutenant, R. C. Tuttle.
Second Lieutenant, C. A. Hendee.

MEDICAL CORPS

Lieutenant Colonel and Surgeon, J. C. Elsom.
Captain G. W. Esau (Infantry) Commanding Detachment, Hospital Corps.
First Lieutenant, G. W. Christie.
Second Lieutenant, A. O. Schubring.

THE SUMMER SESSION

Scott H. Goodnight, Director

DURATION OF THE SESSION

The fourteenth Summer Session of the University of Wisconsin opens June 24, 1912. The session lasts six weeks and closes August 2, except in the Law School, where the session continues for ten weeks and ends August 30.

CLASSES OF COURSES

Courses, both academic and professional, are offered for graduates, and for undergraduates in arts, law, engineering, and agriculture, for teachers in colleges, agricultural schools, high schools, and technical schools; and for special students, as lawyers, doctors, and practicing engineers. Practically all the courses carry full academic credit.

TERMS OF ADMISSION

The requirement for graduates and undergraduates who desire University credit are the same for the summer session as for the other sessions of the University.

All persons, however, who desire to share in its advantages may be enrolled in the summer session without passing the entrance examination. They are freely admitted to all courses as auditors, and are permitted to elect work in the courses for which they are qualified. Credit toward a degree will be given, however, only to students who satisfy the entrance requirements of the University.

FEES AND REGISTRATION

The general fee for the summer session, irrespective of the number of courses taken, is $25 in the Law School, and $15 in the other colleges and the Graduate School. Those who attend

merely as visitors pay the same fee as other students.

Registration must precede entrance upon any part of the work of the session. Registration takes place Saturday, June 22, and Monday, June 24, at the office of the Registrar, 158 University Hall.

SUMMER SESSION BULLETIN

For illustrated bulletin of the summer session, describing the different courses in considerable detail, apply to the Registrar.

GRADUATE SCHOOL AND COLLEGE OF LETTERS AND SCIENCE

ANATOMY

PROFESSOR BARDEEN; ASSOCIATE PROFESSOR MILLER

1. Physiological Anatomy. *M., W., F.*, 8; *one credit.* MR. BARDEEN.
2. Mammalian Anatomy. *M., Tu., W., Th., F.*, 2:30 *to* 5:30; *three credits.* Mr. MILLER.
3. Histology and Organology. *M., Tu., W., Th., F.*, 9 *to* 12; *three credits.* Mr. MILLER.
4. Neurology. *M., Tu., W., Th., F.*, 9 *to* 12; *credit according to work done.* MR. MILLER.
5. Human Anatomy. *M., Tu., W., Th., F.*, 9 *to* 5:30; *credit according to work done.* Mr. BARDEEN.
6. Topographical Anatomy. *M., Tu., W., Th., F.*, 9 *to* 5:30; *credit according to work done.* Mr. BARDEEN.

ART

DR. KRIEHN (Princeton University)

1. History of Italian Art. *M., Tu., W., Th., F.*, 10; *two credits.*
2. History of Modern Art. *M., Tu., W., Th., F.*, 11; *two credits.*

BOTANY

ASSISTANT PROFESSORS DENNISTON, GILBERT; MR. STEIL; DR. STEWART; MR. SMITH

1. General Botany. *M., Tu., W., Th., F.*, 8 *to* 10 *and three additional hours; three credits.* Mr. DENNISTON, Mr. STEIL.
102. Plant Physiology. *M., Tu., W., Th., F., S.*, 8 *to* 11; *four credits.* Mr. DENNISTON, Mr. SMITH.
103. Classification of Seed Plants. *M., W., F.*, 2:30 *to* 4:30; *one credit.* MR. STEWART.
104. Morphology of the Fungi. *M , W., F.*, 2:30 *to* 4:30 *and two additional hours; two credits.* Mr. GILBERT.
105. Mosses and Ferns. *M., W., F.*, 10 *to* 12, *and two additional hours; two credits.* Mr. STEWART.
106. Vegetable Histology. *M., W., F.*, 11 *to* 1; *two credits.* MR. DENNISTON, Mr. STEIL.
107. Botanical Methods. *M., W., F.*, 11; *one credit.* Mr. GILBERT.
108. Research. *Hours to be arranged; credit according to work done.*

CHEMISTRY

PROFESSOR FISCHER; ASSOCIATE PROFESSOR WALTON; MR. CARLETON, DR. KLEIN, MR. JUDD, MR. NEBEL, MR. SCHUETTE

1. General Chemistry. *M., Tu., W., Th., F.*, 10; *two or more credits.* MR. WALTON, MR. JUDD.
2. Qualitative Analysis. *M., W., F.*, 8; *two or more credits.* MR. KLEIN.
3. Quantitative Analysis. *Tu., Th.*, 8; *three or more credits.* MR. CARLETON.
104. Adv. Quantitative Analysis. *Tu.*, 9; *two or more credits.* MR. CARLETON.
105. Teaching of Chemistry. *Tu., Th.*, 12, *and a third hour; two credits.* Mr. WALTON.
106. Organic Chemistry. *M., Tu., W., Th., F.*, 9; *two or more credits.* Mr. FISCHER, Mr. NEBEL.

107. Organic Analysis. *Hours to be arranged; two or more credits.* Mr. FISCHER, Mr. SCHUETTE.
108. Water and Gas Analysis. *Hours to be arranged; two credits.* MR. FISCHER, MR. SCHUETTE.
109. Physical Chemistry. *M., W., F.*, 12; *one credit.* Mr. KLEIN.
210. Chemical Research. *Hours to be arranged; credit according to work done.*

EDUCATION

PROFESSORS ELLIOTT, O'SHEA; ASSOCIATE PROFESSOR HENMON; MR. WELLS, MR. COOK.

1. History of Modern Education. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. WELLS.
2. Public Education. *M., Tu., W., Th., F.*, 9; *two credits.* MR. ELLIOTT.
3. Principles of Teaching. *M., Tu., W., Th., F.*, 10; *two credits.* MR. O'SHEA.

104. History of American Education. *M., Tu., W., Th, F.*, 10; *two credits.* MR. WELLS.
105. Educational Measurements. *M., Tu., W., Th, F.*, 8; *two credits.* MR. ELLIOTT.
106. Social Education. *M., Tu., W., Th, F.*, 9; *two credits.* MR. O'SHEA.
107. Advanced Educational Psychology. *M., Tu., W., Th., F.*, 10; *two credits.* MR. HENMON.

ENGLISH

PROFESSOR HUBBARD; ASSOCIATE PROFESSORS LATHROP, PYRE; ASSISTANT PROFESSORS BEATTY, DODGE; MISS ASHMUN, DR. LOMER, DR. WATT.

1. Preparatory English. *M., Tu., W., Th., F.*, 8. *M., W., F.*, 9; *three credits.* MR. WATT.
2. Freshman English. *M., Tu., W., Th., F.*, 8; *M, W., F.*, 9; *three credits.* MR. LOMER.

3. Freshman English. *M., Tu., W., Th., F.*, 10. *M., W., F.*, 11; *three credits.* Mr Watt.
4. Advanced Composition. *M., Tu., W., Th., F.*, 8; *two credits.* Mr. Dodge.
5. General Survey. *M., Tu., W., Th., F.*, 10. *M., W., F.*, 11; *three credits.* Mr. Dodge, Mr. Lomer.
6. American Literature. *M., Tu., W., Th., F.*, 11; *two credits.* Miss Ashmun.
7. Romantic Movement. *M., Tu., W., Th., F.*, 10; *two credits.* Mr. Pyre.
8. Teaching of Eng. Composition. *M., Tu., W., Th., F.*, 9; *two credits.* Mr. Lathrop.
9. Teaching of English Literature. *M., Tu., W., Th., F.*, 12; *two credits.* Miss Ashmun.

110. Chaucer. *M., Tu., W., Th., F.*, 8; *two credits.* Mr. Hubbard.
111. Shakspere. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. Pyre.
112. Novel. *M., Tu., W., Th., F.*, 10; *two credits.* Mr. Lathrop.
113. Tennyson. *M., Tu., W., Th., F*, 9; *two credits.* Mr. Beatty.
214. Milton. *M., Tu., W., Th., F.*, 9; *two credits.* Mr. Hubbard.
215. Wordsworth. *M., Tu., W, Th., F.*, 8; *two credits.* Mr. Beatty.

FESTIVALS

Associate Professor Bassett; Mr. Dykema (Ethical Culture School, New York).

1. The School Festival. *M., Tu., W., Th., F.*, 8.

GEOGRAPHY

Associate Professor Whitbeck.

1. Physical Geography. *M., Tu., W., Th., F.*, 11; *two credits.*
2. Commercial Geography. *M., Tu., W., Th. F.*, 9; *two credits.*
3. Summer Field Course. *August 4 to September 1. Four or more credits.*

GERMAN

PROFESSOR HOHLFELD; ASSOCIATE PROFESSOR ROEDDER; ASSISTANT PROFESSORS GOODNIGHT, PROKOSCH, PURIN; DR. FEISE, DR. HAUSSMANN, DR. MORGAN.

1. First Semester German. *M., Tu., W., Th., F.*, 10 *to* 12; *four credits.* Mr. PURIN.
2. Second Semester German. *M., Tu., W., Th., F.*, 10 *to* 12; *four credits.* Mr. MORGAN.
3. Third Semester German. *M., Tu., W., Th., F.*, 8 *to* 10; *four credits.* Mr. HAUSSMANN.
4. Conversation. *M., Tu., W., Th., F.*, 8; *one credit.* Mr. GOODNIGHT.
5. Composition. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. ROEDDER.
6. Sophomore Reading. *M., Tu., W., Th., F.*, 9; *two credits.* Mr. FEISE.
7. Prose Readings. *M., Tu., W., Th., F.*, 12; *two credits.* Mr. MORGAN.
8. Lessing. *M., Tu., W., Th., F.*, 12; *two credits.* Mr. HAUSSMANN.

109. Advanced Practice. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. PROKOSCH.
110. Phonetics. *M., W., F.*, 10; *one credit.* Mr. PROKOSCH.
111. Teachers' Course. *M., W., F.*, 12; *one credit.* Mr. PURIN.
112. 19th Century Drama. *M., Tu., W., Th., F.*, 10; *two credits.* Mr. HOHLFELD.
113. History of the German Language. *M., Tu., W., Th., F.*, 9; *two credits.* Mr. PROKOSCH.
114. Advanced Middle High German. *M., W., F.*, 12; *one credit.* Mr. ROEDDER.
115. Novel of 1st part of the 19th Century. *M., W., F.*, 9; *one credit.* Mr. GOODNIGHT.
216. German Lyrics, with Metrical Exercises. *M., W., F.*, 8; *one credit.* Mr. FEISE.
217. Philological Seminary. *M., W., F.*, 9; *one credit.* Mr. ROEDDER.
218. Literature Seminary. *Tu., Th.*, 11 *to* 1 *and an additional hour; credit according to work done.* Mr. HOHLFELD.

GREEK

ASSOCIATE PROFESSOR LAIRD.

1. Elementary Greek. *M., Tu., W., Th., F.*, 12; *two credits.*
2. Xenophon's *Anabasis. M., W., F.*, 8; *one credit.*
3. Homer's *Iliad. Tu., Th., S.*, 8; *one credit.*

104. Advanced Reading Course. *Tu., Th., S.*, 9; *one credit.*

HEBREW ANE HELLENISTIC GREEK

MR. DAVIES.

1. Elementary Hellenistic Greek. *M., Tu., W., Th., F.*, 10; *two credits.*
2. Matthew and Mark. *M., W., F.*, 11; *one credit.*

103. The Apostolic Age. *M., W., F.*, 9; *one credit.*

4. The Message of Hebrew Prophesy. *M., W., F.*, 12; *one credit.*

HISTORY

SELLERY; ASSOCIATE PROFESSORS CHASE, HOCKETT (University of Ohio); ASSISTANT PROFESSOR SCHOLZ (University of California).

1. Ancient History. *M., Tu., W., Th., F.*, 9; *two credits.* Mr. SCHOLZ.
2. Medieval History. *M., Tu., W., Th., F.*, 10; *two credits.* Mr. SELLERY.
3. U. S. History since 1830. *M., Tu., W., Th., F.*, 8; *two credits.* Mr. HOCKETT.

104. Roman Imperial History. *M., Tu., W., Th., F.*, 10; *two credits.* Mr. SCHOLZ.

105. Protestant Revolt. *M., Tu., W., Th., F.*, 9; *two credits.* Mr. SELLERY.

106. American Colonies. *M., Tu., W., Th., F.*, 9; *two credits.* Mr. HOCKETT.

107. Napoleon Bonaparte. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. LINGELBACH.

109. Nineteenth Century Europe. *M., Tu., W., Th., F.*, 12; *two credits.* Mr. LINGELBACH.

108. History of West to 1837. *M., Tu., W., Th., F.*, 10; *two credits.* Mr. PAXSON.

110. Teaching of History. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. CHASE.

211. Seminary in American History. *M., Tu., W., Th., F.*, 8; *two credits.* Mr. PAXSON.

LATIN

ASSOCIATE PROFESSOR FISKE; ASSISTANT PROFESSOR ALLEN; MR. BRIDGHAM.

1. Beginning Latin. *M., Tu., W., Th., F.*, 8 *to* 10; *four credits.* Mr. BRIDGHAM.

102. Teachers' Course. *M , Tu., W., Th., F.*, 8; *two credits.* Mr. FISKE.

103. Advanced Latin Composition. *Tu., Th.*, 9 *and an additional hour; one credit.* Mr. FISKE.

104. Latin Satirists of the Empire. *M., W., F.*, 9; *one credit.* Mr. FISKE.

105. Mythology of Ovid and Virgil. *M., Tu., W., Th., F.*, 10; *two credits.* Miss ALLEN.

106. History Roman Prose Literature. *M., W., F.*, 11; *one credit.* Miss ALLEN.

107. Pliny and Martial. *Tu., Th.*, 11 *and an additional hour; one credit.* Miss ALLEN.

108. Lectures open to the public. *Hours to be arranged.* Miss ALLEN.

LIBRARY TRAINING

MISS HAZELTINE.

1. Library Training. *Hours to be arranged; credit according to work done.*

MANUAL ARTS

PROFESSORS CRAWSHAW, PHILLIPS; ASSISTANT PROFESSOR MILLAR; SUPERINTENDENT GODDARD, MISS HOPE, MR. MILLER (Brooklyn Manual Arts High School); MR. BOOTH (Providence, R. I.), MR. CHISHOLM, MR. DABNEY, MR. DORRANS, MR. ORTH, MR. PAYTON, MR. SCHUMANN, MR. SLADKY.

1. Mechanical Drawing I. *M., Tu., W, Th., F.*, 10 *and* 1:30 *to* 4:30; *three credits.* Mr. PHILLIPS.
2. Mechanical Drawing II. *M., Tu., W., Th., F.*, 10 *and* 1:30 *to* 4:30; *three credits.* Mr. ORTH.
3. Descriptive Geometry. *M., Tu., W., Th., F.*, 10 *and* 1:30 *to* 4:30; *three credits.* Mr. MILLAR.
4. Elementary Woodwork. *M., Tu., W., Th., F.*, 8 *to* 11; *three credits.* Mr. CRAWSHAW, Mr. DORRANS.
5. Furniture and Cabinet Design. *M., Tu., W., Th., F.*, 1:30 *to* 4:30; *three credits.* Mr. CRAWSHAW, Mr. DORRANS.
6. Wood Turning. *M., Tu., W., Th., F.*, 8 *to* 11; *three credits.* Mr. CHISHOLM, Mr. DORRANS.
7. Pattern Making. *M., Tu., W., Th., F.*, 8 *to* 11; *three credits.* Mr. CHISHOLM, Mr. DORRANS.
8. Foundry Work. *M., Tu., W., Th., F.*, 1:30 *to* 4:30; *three credits.* Mr. DORRANS, Mr. PAYTON.
9. Forge Work. *M., Tu., W., Th., F.*, 8 *to* 11; *three credits.* Mr. GODDARD, Mr. SCHUMANN.
10. Machine Shop Work. *M., Tu., W., Th., F.*, 8 *to* 11; *three credits.* Mr. DABNEY, Mr. GODDARD, Mr. SLADKY.
11. Principles of Design. *M., W.*, 8. *M, Tu., W.*, 10 *to* 12; *two credits.* Miss HOPE.
12. Decorative Metal. *M., Tu., W., Th., F*, 1:30 *to* 4:30; *three credits.* MR. MILLER.
13. Development and Teaching of Manual Arts. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. CRAWSHAW.
14. Architectural Drafting. *M., Tu, W., Th., F.*, 8 *to* 11; *three credits.* Mr. MILLER.
15. Architectural Construction. *M., Tu., W., Th., F.*, 1:30 *to* 4:30; *three credits.* Mr. MILLER, Mr. BOOTH.

MATHEMATICS

PROFESSOR SLICHTER; ASSOCIATE PROFESSOR SKINNER; ASSISTANT PROFESSORS HART, MARCH, WOLFF; DR. BURGESS.

1. Algebra. *M., Tu., W., Th., F.*, 12; *two credits.* MR. SLICHTER.
2. Solid Geometry. *M., Tu., W., Th., F.*, 11; *two credits.* MR. HART.
3. Plane Trigonometry and Logarithms. *M., Tu., W., Th., F.*, 9; *two credits.* MR. MARCH.
4. Analytic Geometry. *M., Tu., W., Th., F.*, 10; *two credits.* MR. HART.
5. Calculus. *M., Tu., W., Th., F.*, 11; *two credits.* Mr. SKINNER.
7. Elementary Analysis (begins Monday, June 17) *M., Tu., W., Th., F., S.*, 8 *and* 11; *five credits.* Mr. BURGESS.
8. Integral Calculus (begins Thursday June 20) *M., Tu., W., Th., F., S.*, 8 *and* 11; *four credits.* Mr. WOLFF.
9. Algebra of Investments. *M., Tu., W., Th., F.*, 10; *two credits.* MR. SKINNER.
110. Teaching of Mathematics. *M., Tu., W., Th., F.*, 10; *two credits.* Mr. HART.
111. Differential Equations. *M., Tu., W., Th., F.*, 10; *two credits.* MR. MARCH.
112. Mechanics. *M., Tu., W., Th., F.*, 9; *two credits.* MR. SLICHTER.
213. Higher Algebra. *M., W., F.*, 12; *one credit.* Mr. BURGESS.
214. Differential Geometry. *M., Tu., W., Th., F.*, 8; *two credits.* MR. SKINNER.
15. Theory of Functions. *M., Tu., W., Th., F.*, 11; *two credits.* MR. MARCH.
216. Aerodynamics. *M., W., F.*, 10; *one credit.* Mr. SLICHTER.

METEOROLOGY

MR. MILLER.

1. Elementary Meteorology. *M., Tu., W., Th., F.*, 2:30; *two credits.*

MUSIC

PROFESSOR COERNE; MR. DYKEMA (Ethical Culture School, New York).

1. Public School, Elementary. *M., Tu., W., Th., F.*, 11; *two credits.* MR. DYKEMA.
2. Public School, Advanced. *M., Tu., W., Th., F.*, 12; *two credits.* MR. DYKEMA.
3. Music Appreciation. *M., Tu., W., Th., F.*, 10; *one credit.* MR. COERNE.
4. Harmony. *M., W., F.*, 9; *one credit.* MR. COERNE.

PHILOSOPHY

PROFESSOR SHARP; ASSOCIATE PROFESSOR HENMON; DR. OTTO.

1. General Psychology. *M., Tu., W., Th., F.*, 9; *two credits.* MR. HENMON.
2. Logic. *M., Tu., W., Th., F.*, 9; *two credits.* MR. OTTO.
3. Man and Nature. *M., Tu., W., Th., F.*, 10; *two credits.* MR. OTTO.
4. Moral Education. *M., Tu., W., Th., F.*, 8; *two credits.* MR. SHARP.

105. Social Psychology. *M., Tu., W., Th., F.*, 11; *two credits.* MR. SHARP.

106. The Philosophy of Henri Bergson. *Tu., Th.*, 1:30 *to* 3; *one credit.* MR. OTTO.

PHYSICAL EDUCATION AND PLAY

PROFESSOR EHLER; ASSISTANT PROFESSORS ELSOM, MEANWELL, RICHARDS; MISS TRILLING (Chicago Teachers' College), and assistants.

(Courses 5, 6, 8, 9, 10, 11, and 12 may be taken for credit only by students majoring or minoring in Physical Education.)

1. Physical Education. *M., Tu., W., Th., F.*, 9; *two credits.* MR. EHLER.

2. Nature and Function Play. *M., Tu., W., Th., F.*, 10; *two credits.* MR. EHLER.
3. Playgrounds. *Tu., Th., S.*, 11; *one credit.* MR. MEANWELL.
4. Secondary School Athletics. *M., W., F.*, 11; *one credit.* MR. RICHARDS.
5. Scoutcraft. *Tu., Th., S.*, 12. MR. ELSOM.
6. First Aid to the Injured. *M., W., F.*, 12. MR. ELSOM.
7. Physical Examinations. *F.*, 11. MR. ELSOM.
8. Principles and Methods of Coaching. *M., W., F.*, 12; *one credit.* MR. RICHARDS.
9. Athletics and Games. *M., Tu., W., Th., F.*, 2:30; *one credit.* MR. MEANWELL.
10. Gymnastics, Plays, and Games. *M., Tu., W., Th., F.*, 3:30; *one credit.* Miss TRILLING.
11. Folk Dancing. *M., Tu., W., Th., F.*, 4:30; *one credit.* Miss TRILLING.
12. Athletics. *M., Tu., W., Th., F.*, 3:30 *to* 5:30. MR. RICHARDS, MR. MEANWELL.
13. Swimming, Women's classes. *Tu., Th., S.*, 11. *M., W., F.*, 4:30. Men's classes *Tu., Th., S.*, 4:30. MR. ELSOM and assistants.

PHYSICS

PROFESSOR MASON; ASSOCIATE PROFESSOR INGERSOLL; ASSISTANT PROFESSOR TERRY; DR. FORSYTHE.

1. General Lectures. *M., Tu., W., Th., F.*, 12; *two credits* MR. TERRY.
2. General Laboratory Practice. *Hours to be arranged; one credit for each thirty hours of work.* MR. FORSYTHE.
3. Lectures for High-School Teachers. *M., Tu., W., Th., F.*, 5. MR. INGERSOLL.

104. Advanced Heat or Light. *M., Tu., W., Th., F.*, 9; *two credits.* MR. INGERSOLL.

105. Advanced Lab., Heat or Light. *M., Tu., W., Th., F.*, 10 *to* 12; *one credit for each thirty hours of work.* MR. INGERSOLL.

106. Advanced Electricity and Magnetism. *M., Tu., W., Th., F.* 8; *two credits.* MR. TERRY.
107. Advanced Lab, Electricity & Magnetism. *M., Tu., W., Th., F.*, 2 *to* 4; *credit according to work done.* MR. TERRY.
108. Theory of Physical Phenomena. *M., W., F., hour to be arranged; two credits.* MR. MASON.
209. Gyroscopic Motion. *Hours to be arranged; one credit.* MR. MASON.
210. Electricity and Magnetism. *Hours to be arranged; two credits.* MR. MASON.

POLITICAL ECONOMY

ASSOCIATE PROFESSOR LLOYD-JONES; ASSISTANT PROFESSOR HALL.

1. American Government. *M., Tu., W., Th., F*, 8; *two credits* MR. LLOYD-JONES.
102. Party Government. *M., Tu., W., Th., F.*, 9; *two credits.* MR. LLOYD-JONES.
103. American Constitutional Law. *M., Tu., W., Th., F.*, 10; *two credits.* MR. HALL.
104. Municipal Government. *M., Tu., W, Th., F.*, 11; *two credits.* MR. HALL.

PUBLIC SPEAKING

MISS JOHNSON.

1. Practical Public Speaking. *Tu., Th., S.*, 9; *one credit.*
2. Interpretative Reading: Browning. *M., W., F.*, 8; *one credit.*
3. High School Problems. *M., W., F.*, 9; *one credit.*
4. Principles and Practice. *Tu., Th., S.*, 8; *one credit.*

ROMANCE LANGUAGES

PROFESSOR SMITH; ASSISTANT PROFESSORS CERF, REED; MR. CATTELL, MR. MILLER.

FRENCH

1. Beginners' French. *M., Tu., W., Th., F.*, 8 *to* 10; *four credits.* MR. REED. *M., T., W., Th., F.*, 10 *to* 12; *four credits.* MR. CATTELL.
2. Second Semester French. *M., Tu., W., Th., F.*, 11; *two credits.* MR. MILLER.
3. Advanced French. *M., Tu., W., Th., F.*, 9; *two credits.* MR. SMITH.
4. Grammar and Composition. *M., W., F.*, 12; *one credit.* MR. CATTELL.

105. French Pronunciation. *Tu., Th.*, 10 *and an additional hour; one credit.* MR. CERF.
106. Elementary Conversation. *M., Tu., W., Th., F.*, 8; *one credit.* MR. CERF.
107. Advanced Conversation. *M., W., F.*, 10; *one credit.* MR. CERF.
108. Modern French Drama. *M., W., F.*, 8; *one credit.* MR. SMITH.
109. Molière. *Tu., Th.*, 12 *and an additional hour to be arranged; one credit.* MR. CATTELL.
110. Victor Hugo. *M., W., F.*, 9; *one credit.* MR. CERF.
111. Balzac, Daudet, Anatole France. *M., W., F.*, 10; *one credit.* MR. REED.
212. Old French. *M., W., F.*, 12; *one credit.* MR. SMITH.
213. Old French Literature. *M., W., F.*, 11; *one credit.* MR. SMITH.
214. Research in French. *Hours to be arranged; credit according to work done.* MR. CERF, MR. SMITH.

ITALIAN

115. Elementary Italian. *Tu., Th.*, 10 *and additional hour to be arranged; one credit.* MR. REED.
216. Italian Literature. *Hours to be arranged; credit according to work done.* MR. REED.

SPANISH

17. Elementary Spanish. *M., Tu., W., Th., F.*, 8. *M., W., F.*, 9; *three credits.* MR. MILLER.
118. Advanced Spanish. *Tu., Th.*, 8 *and an additional hour; one credit.* MR. MILLER.
119. Research in Old Spanish. *Hours to be arranged; credit according to work done.* MR. MILLER.

ZOOLOGY

ASSISTANT PROFESSOR WAGNER; MR. WODSADALEK.

1. General Zoology, Lectures. *M., W., F.*, 8; *three credits.* MR. WAGNER.
2. Entomology, Lectures. *Tu., Th.*, 8; *two credits.* MR. WAGNER.
103. Advanced Zoology and Research. *Hours to be arranged; credit according to work done.* MR. WAGNER.
4. Zoological Methods. *Hours to be arranged; one credit.* MR. WAGNER.

COLLEGE OF ENGINEERING

ELECTRICAL ENGINEERING

ASSISTANT PROFESSOR SHUSTER.

1. Continuous Currents. *M., W., F.*, 11; *three credits.*
2. Testing Direct Current Dynamos. *Hours to be arranged; one or two credits.*
3. Testing Alternative Current Machinery. *Hours to be arranged. One or two credits.*
4. Thesis.

HYDRAULIC ENGINEERING

ASSISTANT PROFESSOR DAVIS.

1. Elements of Hydraulics. *M., Tu., W., Th., F.,* 8; *three credits.*
2. Hydrometry. *Hours and credits to be arranged.*
3. Experimental Hydraulics.

MACHINE DESIGN

PROFESSOR MACK.

A. Elementary Design. *No credit.*
1. Mechanism. *Hours and credit to be arranged.*
3. Design of Complete Machines. *Hours and credit to be arranged.*

MECHANICAL DRAWING

PROFESSOR PHILLIPS; ASSISTANT PROFESSOR MILLAR; MR. ORTH.

1. Elements of Drawing. Class, *M., Tu., W., Th., F.,* 10. Drafting, *M., Tu., W., Th., F.,* 1:30 *to* 4:30; *three credits.* MR. PHILLIPS.
2. Elements of Drawing. Class, *M., Tu., W., Th., F.,* 10. Drafting, *M., Tu., W., Th., F.,* 1:30 *to* 4:30; *three credits.* MR. ORTH.
3. Descriptive Geometry. Class, *M., Tu., W , Th., F.,* 10. Drafting, *M., Tu., W., Th., F.,* 1:30 *to* 4:30; *three credits.* MR. MILLAR.

MECHANICS

ASSISTANT PROFESSOR WITHEY; MR. KOMMERS.

1. Statics. *M., Tu., W., Th., F.,* 8. *M., W., F.,* 2:30; *three credits.* MR. KOMMERS.
2. Mechanics of Materials. *M., Tu., W., Th., F.,* 11; *two credits.* MR KOMMERS.

3. Mechanics of Materials (cont'd) *M., Tu., W., Th., F.*, 10. *M., W., F.*, 1:30; *three credits.* MR. WITHEY.
4. Dynamics. *M., Tu., W., Th., F.*, 11; *two credits.* MR. WITHEY.
8. Laboratory Research, Materials of Construction. *Hours and credit to be arranged.*

51, 52, 53. Materials of Construction. *Hours to be arranged; two credits.*

SHOP WORK

SUPERINTENDENT GODDARD; MR. CHISHOLM, MR DABNEY, MR. PAYTON, MR. SCHUMANN, MR. SLADKY, MR. ZURIAN.

1. Elementary Pattern Making. *One credit.* MR. CHISHOLM.
2. Bench Work in Iron. *One-half credit.* MR. DABNEY, MR. SLADKY.
3. Elementary Forge Work. *One half credit.* MR. SCHUMANN.
4. Lathe Work in Metals. *One credit.* MR. DABNEY, MR. SLADKY.
5. Planing and Milling. *One credit.* MR. DABNEY, MR. SLADKY.
6. Tool Making. *Two credits.* MR. DABNEY, MR. SLADKY.
7. General Shop Work. *Four credits.* MR. DABNEY, MR. SLADKY.
8. Heat Treatment of Steel. *One credit.* MR. GODDARD, MR GABRIEL.
9. Advanced Pattern Making and Foundry Practice. *One credit.* MR. CHISHOLM, MR. PAYTON.

STEAM AND GAS ENGINEERING

ASSOCIATE PROFESSOR THORKELSON; MR. HIGSON.

1. Steam Turbines. *M., W., F.*, 8; *one credit.* MR. THORKELSON.
2. Gas Engines. *M., W., F*, 9; *one credit.* MR. THORKELSON.
3. Compressed Air. *M., W., F.*, 10; *one credit.* MR. THORKELSON.

4. Heating and Ventilation. *M., W., F.*, 11; *one credit.* Mr. Thorkelson.

Laboratory Courses. *Tu., Th.*, 1:30 *to* 5:30; *one credit.* Mr. Higson. *S.*, 8 *to* 12; *one credit.* Mr. Thorkelson. Mr. Higson.

SURVEYING

Associate Professor Smith; Mr. Beebe, Mr. Cutler, Mr. Owen, Mr. Parker.

1. Topographic Drawing and Mapping. *Hours and credits to be arranged.* Mr. Owen.
2. Elementary Surveying I. *M., Tu., W., Th., F.*, 8, *first two weeks; 50 hours of field work to be arranged; two credits.* Mr. Owen.
3. Elementary Surveying 11. *M., Tu., W., Th., F.*, 9 *to* 11, *first three and a half weeks; 50 hours of field work to be arranged; four credits.* Mr. Owen.
4. Advanced Surveying. *M., Tu., W., Th., F.*, 9 *to* 11; *first two and a half weeks; 50 hours of field work to be arranged; three credits.* Mr. Owen.
5. Trigonometric Survey at Devil's Lake, Wis. *Begins June 20, continues four weeks. Credit according to work accomplished.* Mr. Smith, Mr. Parker, Mr. Cutler.

Surveying for Electrical and Mechanical Engineers. *Hours to be arranged; three credits.* Mr. Owen.

7. Mining Survey. *Hours and credits to be arranged.* Mr. Owen.

LAW SCHOOL

PROFESSORS COOK (University of Chicago), GILMORE, KALES, (Northwestern University), LORENZEN, RICHARDS; MR. RUNDELL.

1. Criminal Law. Beale's *Cases on Criminal Law. Eight hours a week, first 5 weeks; two and two-thirds credits.* MR. GILMORE.
2. Persons. Kales' *Cases on Persons. Eight hours a week, second 5 weeks; two and two-thirds credits.* MR. KALES.
3. Torts. Ames' & Smith's *Cases on Torts. Four hours a week, 10 weeks; two and two-thirds credits.* MR. LORENZEN.
4. Corporations. Selected Cases. *Eight hours a week, first 5 weeks; two and two-thirds credits.* MR. RICHARDS.
5. Conflict of Laws. Lorenzen's Cases. *Four hours a week, 10 weeks; two and two-thirds credits.* MR. LORENZEN.
6. Equity III. Ames' *Cases on Equity. Eight hours a week, second 5 weeks; two and two-thirds credits.* MR. RUNDELL.
7. Mortgages. Kirchwey's *Cases on Mortgages. Eight hours a week, first 5 weeks; two and two-thirds credits.* MR. RUNDELL.
8. Trusts. Ames' *Cases on Trusts. Eight hours a week, second 5 weeks; two and two-thirds credits.* MR. COOK.

COLLEGE OF AGRICULTURE

AGRICULTURAL BACTERIOLOGY

MR. WRIGHT.

101. Agricultural Bacteriology. *M., W., F.*, 9. *Tu., Th.*, 2:30 *to* 4:30; *two credits.*

102. Agricultural Bacteriology, *Lab. M., Tu., W., Th., F.*, 10 *to* 12; *two credits.*

AGRICULTURAL CHEMISTRY

MR. PETERSON.

101. Gen. Agricultural Chemistry. *M., Tu., W., Th, F.*, 8; *two credits.*

102. Household Chemistry. *M., Tu., W., Th., F.*, 10 *to* 12; *two credits.*

AGRICULTURAL EDUCATION

ASSOCIATE PROFESSOR HATCH.

101. Agricultural Education. *M., Tu., W., Th., F.*, 4:30; *two credits.*

AGRICULTURAL ENGINEERING

ASSISTANT PROFESSOR O'COCK.

1. General Agricultural Engineering. *Tu., Th.*, 8. *M., W., F.*, 10 *to* 12; *two credits.*

AGRONOMY

PROFESSOR MOORE; ASSISTANT PROFESSOR STONE; MR. LEITH.

1. General Outline of Agronomy. *M., W., F.*, 8. *Tu., Th.*, 11 *to* 1; *two credits.* MR. MOORE, MR. LEITH.

102. Weed Identification. *Tu., Th.*, 10. *M., W., F.*, 10 *to* 12; *two credits.* MR. STONE.

ANIMAL HUSBANDRY

ASSISTANT PROFESSOR FULLER.

1. Elementary Live Stock Judging. *Tu., Th.*, 8. *M., W., F.*, 11; *two credits.*

2. Live Stock Practice. *M., W., F.*, 9. *Tu., Th.*, 2:30 *to* 4:30; *two credits.*

DAIRY HUSBANDRY

PROFESSOR FARRINGTON; ASSISTANT PROFESSOR BENKENDORF.

1. Milk and its Products. *Tu., F.*, 9. *M., W., F.*, 2:30 *to* 4:30; *two credits.* MR. FARRINGTON, MR. BENKENDORF.

102. Dairy Practice. *Hours to be arranged; one credit for each forty-eight hours of work.* MR. BENKENDORF.

FARM MANAGEMENT

PROFESSOR OTIS.

102. Traveling Field Course. *Four weeks; credit according to work done.*

HOME ECONOMICS

Miss Hope, Miss Loomis, Miss Schmit (Milwaukee).

101. Foods. *Tu., Th.*, 9. *M., Tu., Th.*, 10 *to* 12; *two credits.* Miss Loomis.

102. Economic Problems of Food Supply. *Tu., Th.*, 8. *M., Tu., Th.*, 2:30 *to* 4:30; *two credits.* Miss Loomis.

103. Textiles. *Tu., Th.*, 2:30. *W., F.*, 10 *to* 12. *W.*, 2:30 *to* 4:30; *two credits.* Miss Schmit.

104. Hand and Machine Sewing. *M., W.*, 9. *Tu., Th., F.*, 8 *to* 10; *two credits.* Miss Schmit.

105. Art and Design. *M., W.*, 8. *M., Tu., W.*, 10 *to* 12; *two credits.* Miss Hope.

HORTICULTURE

Associate Professor Moore.

1. Principles of Fruit Growing. *M., Tu., W., Th., F.*, 10; *two credits.*

2. Horticultural Practice. Recitation *Tu., Th.*, 9. *Laboratory M., W., F.*, 8 *to* 10; *two credits.*

SOILS

Mr. Walster.

101. Elementary Soils. *M., W., F.*, 11. *Tu., Th.*, 11 *to* 1; *two credits.*

102. Laboratory in Soils. *M., Tu., W., Th., F.*, 2:30 *to* 4:30; *two credits.*

POULTRY HUSBANDRY

Associate Professor Halpin.

1. General Poultry Raising. *M., Tu., W., Th., F.*, 8 *and* 10; *four credits.*

2. Poultry Judging. *Tu., Th.*, 9. *M., W., F.*, 2:30 *to* 4:30; *two credits.*

THE GRADUATE SCHOOL

GEORGE C. COMSTOCK, Director.

GENERAL STATEMENT

The University of Wisconsin is a part of the system of public instruction provided by the State, but is open to all properly qualified students without regard to state lines. The students of the Graduate School are largely from other educational institutions located in many states, although many of them come from the University's own undergraduate departments. It is the aim of the University to offer the opportunities for advanced instruction and research to as wide a constituency as possible. No limitations are placed upon a student's freedom in research and in the expression of his conclusions upon subjects which he is prepared to treat, but the University avoids all that is partisan in politics and sectarian in religion, without debarring its members from investigation and activity in any field.

ORGANIZATION

Prior to 1895 the graduate work of the University was conducted by its several departments of instruction without further cooperation than is implied in their relations to the University as a whole. The development of this work, however, led to its organization, in 1895, as a Department of Graduate Study, and in 1904 it was advanced to the status of a Graduate School, the administration of which was entrusted to a committee of the University faculty called the Administrative Committee of the Graduate School. In 1906 the office of Director of the Graduate School was created and in 1910 a graduate faculty was organized for consideration of the larger questions affecting the school. The Director is charged with general supervision of all graduate students and is the medium of communication between such students and the University administration.

AIMS AND METHODS

The Graduate School aims to serve the needs of young men and women of college training who desire a larger and more thorough acquaintance with the scholarship and research of the world than can be obtained in the current undergraduate courses. It seeks to awaken in the minds of capable men and women an appreciation of high scholarship, research, and the advancement of learning, to the end that they may effectively aid, not only in the promulgation of academic instruction, but also in extending the boundaries of knowledge. Although the work of the Graduate School is in large part planned with reference to the needs of those who desire to fit themselves for the higher positions in the work of education, and who as preparation for this work seek to specialize along definite lines, the opportunities of the School are open to others as well.

The University aims to give advanced instruction of a high character in each department of its Graduate School, but the scope, form, and methods of this instruction are determined independently, within the several departments. Lectures, laboratories, and the seminary method are largely employed, and special emphasis is everywhere laid upon bringing the graduate student into contact with the research problems of his department of study. To this end able students share in the investigative work of their instructors, and are encouraged to acquire the spirit as well as the methods of productive work. Provision has been made by the University for the publication under its auspices of the results of specially meritorious work of this kind, and doctors' theses of more than common merit are occasionally thus published.

CLUBS AND SOCIETIES

To promote interest in problems of scholarship and investigation, and for training in the presentation of results, numerous voluntary clubs and societies have been established by instructors and students in the Graduate School. Among these are:

THE SCIENCE CLUB,

THE CLASSICAL CLUB,

THE LANGUAGE AND LITERATURE CLUB,

THE HISTORICAL CONFERENCE,
THE ROMANCE LANGUAGE CLUB,
THE GERMAN JOURNAL CLUB,
THE CHEMICAL CLUB,
THE BIOLOGICAL CLUB,
THE MATHEMATICAL CLUB,
THE WISCONSIN SECTION OF THE AMERICAN CHEMICAL SOCIETY,
THE UNIVERSITY OF WISCONSIN BRANCH OF THE AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS,
THE UNIVERSITY OF WISCONSIN SECTION OF THE AMERICAN ELECTROCHEMICAL SOCIETY.

THE GRADUATE CLUB, while sharing in these purposes, is primarily a social organization for the promotion of acquaintance and good fellowship among graduate students and members of the faculty.

FELLOWSHIPS AND SCHOLARSHIPS

University Fellowships

For the purpose of promoting higher scholarship and research the Regents of the University have established twenty University Fellowships of the annual value of $400 each. These are allotted to the several departments of instruction as follows:

To Political Economy, two; to History, two; to Geology and the Biological Sciences, two; to Engineering, two; to Agriculture, two; to the following departments and groups of departments one each, viz: Botany, Political Science, Sociology, Latin, Greek, German, Romance Languages, Chemistry, Physics, Mathematics and Astronomy, Philosophy and Education.

To the above should be added an endowed fellowship in English especially described upon a following page.

The following are the regulations respecting these fellowships:

1. Any fellowship to which the present regulations apply may be held by any graduate of a college of recognized standing or by anyone whose education is equivalent to that represented by a college degree. Those about to take such a degree are eligible candidates, the regulations applying to the time of entrance upon the duties of the fellowship. Men and women are equally eligible. Preference in appointment will usually be shown to candidates who possess a competent reading knowledge of French and German.

2. Fellowships will be granted upon application only, which should be made upon a special blank form furnished by the Registrar of the University; such application, with accompanying evidence of merit, attainment, and ability, to be in the hands of the Registrar before March

1st of the collegiate year preceding that during which the fellowship is to be held.

3. All fellowships will be filled each year. Fellows may be re-appointed for one additional year only.

4. Application must be accompanied by evidence of scholarship, ability, and general worthiness; such as theses (whether prepared for this or other purposes), published writings, testimonials from instructors, outline of educational course pursued, special distinctions gained and the like. Applications for reappointment should contain a full account of the work of the preceding year. Applications to receive attention, must contain a definite statement of the special studies which the applicant intends to pursue.

5. Each fellow shall pursue his studies under the direction of the professor or professors in charge of his special studies. Assignment of University services to the fellow shall be made by the President in consultation with the head of the department to which the fellow has been assigned, and the work assigned may be equivalent to one hour of teaching daily, or the supervision of laboratory work for two hours daily. It is stipulated that the holder of the Sociology fellowship shall do work at the University Settlement in Milwaukee.

6. Vacancies in fellowships, due to resignation or other cause, may be filled as they occur, at the option of the faculty.

Honorary Fellowships

The Regents have established honorary fellowships, equal in number to the regular fellowships, and filled in a similar way. These are restricted, however, to persons who have already held academic honors, such as fellowships. No compensation is attached to these positions except the remission of University fees, and no teaching service is required; but to be eligible to an honorary fellowship one must be a graduate of at least one year's standing.

Teaching Fellowships

For the promotion of educational efficiency, the Regents of the University have established in addition to the University Fellowships above described six Teaching Fellowships, which are to be filled annually upon nomination made by the Committee for the Training of Teachers. The holders of these fellowships devote one-half year to special graduate study within the University and one-half year to apprenticeship teaching, under supervision, in a "co-operating high school." For the latter service a payment of $125 is made in addition to the stipend of $250 attached to the fellowship.

For further details concerning these teaching fellowships application may be made to the Director of the Course for the Training of Teachers.

Working Fellowships

A tentative arrangement has been made between the University and certain departments of the state government whereby a limited number of graduate students may be appointed to positions known as Working Fellowships and bearing an annual salary of $600. Appointment to these positions is made substantially in the same manner as to University fellowships and the incumbent is expected to devote one-half of his time to graduate study within the University and one-half to the service of the state, viz. the Tax Commission, The Rairoad Commission, and the Department of Insurance. It is expected that the service rendered to these departments will be in part at least of the nature of investigation furnishing a valuable supplement to academic work in the University Department of Political Economy. For further information application may be made to the University Registrar.

An industrial fellowship yielding $1,000 annually for a period of two years has been created in the College of Agriculture by the Wisconsin Pea Packers Association to provide for the study of pea diseases in the department of Plant Pathology.

THE MARY M. ADAMS GRADUATE FELLOWSHIP IN ENGLISH

By will the late Charles Kendall Adams, formerly President of the University of Wisconsin, conveyed the larger part of his estate to the regents of the University for the gradual establishment of fellowships in Modern History, Greek, and in the English Language and Literature. The first of these fellowships, the Mary M. Adams Graduate Fellowship in the English Language and Literature became available in the academic year 1906–07, since which time the annual amount paid to the incumbent has ranged from $450 to $500.

ALUMNI FELLOWSHIP IN JOURNALISM

A graduate fellowship in journalism of an annual value of $400 is offered by the Alumni Association of the University of Wisconsin to be filled from graduates of the University.

GRADUATE SCHOLARSHIPS

The Regents of the University maintain twenty-one graduate scholarships of the value of $225 each. Two of these are designated for Economics, one for Political Science, one for European history, one for American history, two for Agriculture, and three for Engineering. Appointments to these scholarships are in general made in the same manner as appointments to fellowships, but by special provision authority is conferred upon the faculties of Beloit College, of Carroll College, of Lawrence College, of Marquette University, of Milwaukee Downer, and of Ripon College to nominate annually to the faculty of the University of Wisconsin one member of their respective senior classes as a suitable candidate for a University scholarship. Such candidates when duly appointed by the Regents of the University, shall be in all respects upon the same footing as other University scholars.

Through the generosity of friends of the University, there has been established the Henry Gund Graduate Scholarship in the Department of German, of the annual value of approximately $225, and two J. Ogden Armour Scholarships in Agriculture, of the annual value of $250 each.

All fellows and University scholars are required to pay the regular incidental fee, but are exempt from the non-resident tuition fee.

ADMISSION TO THE GRADUATE SCHOOL

Graduates from four-year courses of liberal study in any approved university or college will be admitted to the Graduate School without examination, but will not be considered as candidates for a higher degree until announcement of such candidacy has been made to the director of the Graduate School. Undergraduates of the University of Wisconsin who have completed all requirements for the baccalaureate degree will also be admitted to the Graduate School. Each applicant for admission to the Graduate School should, in person, present his college diploma to the University Registrar, who will admit him to the University, and will furnish a statement of fees to be paid at the Regents' office. This statement serves also as a certificate of enrollment in the Graduate School, and should be presented promptly to the

Director, at Room 162 University Hall, who will issue to the student an election card for presentation to the several instructors under whom he desires to study. Students already enrolled in the Graduate School should obtain from the Director an election card at or before the beginning of each semester. (For a statement of fees to be paid in the Graduate School see page 547.)

ASSIGNMENT OF STUDIES

The election card should be presented first to the instructor under whom the student's principal work is to be done, designated his major professor, who will advise with regard both to the courses of major study and the subordinate studies that may be combined advantageously with the major. The studies thus determined will be entered upon the election card, which must be signed by the instructor in charge of the major and endorsed with the approval of each other instructor with whom work is to be taken. The completed card should be submitted, in person, to the Director of the Graduate School as soon as possible after the opening of the semester. The student's registration is not complete until the election card has been thus submitted to and approved by the several officers above named and returned to the Director.

Graduate students are invited to confer freely with the Director of the Graduate School in all matters concerning their relations to the University.

SECOND DEGREES

The University of Wisconsin confers the following second degrees: *Master of Arts, Master of Science, Master of Philosophy, Civil Engineer, Mechanical Engineer, Electrical Engineer, Chemical Engineer, Engineer of Mines.*

These degrees are conferred in accordance with the conditions set forth below, upon graduates of the University of Wisconsin and upon graduates of other institutions of learning whose training has been substantially equivalent to that represented by the baccalaureate degree of the University of Wisconsin. The University will determine this substantial equivalence of training by such methods as seem best adapted to each case, and may impose upon any candidate such additional requirements as seem

needful and just; its judgment in this respect being influenced by the actual attainments of the candidate in larger measure than by the institution at which he has previously studied.

The degree, *Master of Arts*, is conferred upon candidates whose undergraduate work corresponds to that now leading to the degree, *Bachelor of Arts*, as conferred by the University of Wisconsin, and whose graduate studies are non-professional in character. The degree, *Master of Science* and the second degrees in engineering, are respectively conferred upon candidates whose undergraduate work corresponds to that now leading to the degree, *Bachelor of Science*, as conferred by the University of Wisconsin. The degree, *Master of Philosophy*, is conferred only upon those candidates who have received from the University of Wisconsin the degree of *Bachelor of Philosophy*, but such candidates may receive the M. A. degree in lieu of Ph. M. by absolving, as a supplement to their graduate work, all requirements for the B. A. degree not satisfied at the time of taking their Ph. B.

Candidacy for the above degrees is normally based upon resident study at the University, but in a considerable class of cases provision is made whereby a measure of credit is extended to work done *in absentia*. In no case, however, will a master's degree be conferred in course without the equivalent of one semester of resident graduate study at the University of Wisconsin.

The following regulations for the attainment of second degrees apply to all candidates in residence.

1. During a period of at least one academic year the candidate must pursue a course of graduate study characterized by definiteness of purpose and approved by the University as appropriate to that purpose and suitable in amount. Such a course includes normally for each semester assigned graduate work carrying from nine to twelve credits and at least one-half of his work must lie in a single department. The undergraduate preparation of the candidate must be sufficient to satisfy the instructor that the advanced work may be profitably undertaken. Undergraduate courses not listed for graduate credit, may be elected in addition to the normal amount of graduate work, provided that the recommendation of the professor in charge of the student's major and the approval of the Director of the Graduate School be obtained in advance.

2. Students who during their candidacy for the master's degree are engaged in teaching, or other remunerative employment, will be required to devote to their studies such period longer than one year as may be designated by the Graduate Committee.

3. For students seeking to specialize in a definite line of study the preparation of a thesis may be required and subject to the approval of the professor in charge, such thesis work may be elected by others. If elected, a typewritten copy of the completed thesis bearing the approval of the professor under whom it is taken must be filed with the Librarian of the University on or before June 1 of the year in which the degree is to be conferred.

4. The candidate must sustain an oral examination upon the graduate work offered in support of his candidacy. Subject to the approval of the President of the University, the time and place of this examination will be determined and the examining committee appointed by the Director of the Graduate School.

Second Degrees in Engineering

The degrees, *Civil Engineer*, *Mechanical Engineer*, *Electrical Engineer*, *Chemical Engineer* and *Engineer of Mines* will be conferred:

(a) Upon graduates of approved institutions who have completed suitable undergraduate courses and who pursue not less than one year of advanced engineering study at the University of Wisconsin, in accordance with the rules above set forth for the attainment of second degrees.

(b) Upon graduates of the College of Engineering of the University of Wisconsin who have spent three years in professional work, at least one of which must have been in a position of responsibility, and who present a satisfactory thesis.

Second Degrees for Students in Professional Colleges

Graduates of approved institutions who are regularly enrolled in the professional colleges of this University may supplement their professional studies by work taken in the Graduate School. Upon the completion of an approved course of study they will be admitted to examination for the master's degree, to be conferred at the time of their graduation from the professional college. The course of study thus prescribed for the attainment of the

masters degree may be expected, normally, to require one-third of the student's time for a period of two years.

CANDIDATES FOR THE MASTER'S DEGREE PARTLY IN ABSENTIA

Candidates for the master's degree who are graduates of the University of Wisconsin may be permitted, by vote of the Graduate Committee, to do one-half of this work *in absentia*.

By consent of the departments concerned any person, whether a graduate of the University of Wisconsin or not, otherwise eligible to candidacy for a second degree and who has done satisfactory graduate work during one Summer Session of the University, may be admitted to candidacy for a master's degree upon the following terms:

1. The candidate must conform to all of the above regulations for candidates for the master's degree with exception of the requirement of residence for one year.

2. During a period of two consecutive years, while not in residence at the University, the candidate must pursue a course of advanced study previously arranged and approved by some department of the University. This work is designated his major study, and during two Summer Sessions, in addition to the one above named, he must pursue, at the University, work in continuation of, or collateral to, this major; for example, laboratory or seminary work in the department in which the major is taken.

3. As some departments of the University do not concede the privilege of candidacy *in absentia*, the applicant for this privilege must arrange in advance with the department concerned, for its approval of the proposed work and must show that he has access to adequate facilities for its prosecution. A form showing that such arrangement has been made must be completed and filed with the Director of the Graduate School at or before the close of the first summer session of candidacy. Continuous supervision by the University cannot, in general, be given to work done *in absentia*, and its amount and character will therefore be tested at the opening of each summer session by examination upon the ground covered *in absentia* during the preceding year. The University prescribes that the total amount of *absentia* work assigned in such candidacy shall be equal in amount to the total work normally accomplished during attendance upon three sum-

mer sessions. Experience has shown that this amount of work can rarely be done within the minimum period of two years by teachers or other persons charged with similar onerous duties and these should expect to devote more than the prescribed minimum period to their candidacy.

THE DOCTOR'S DEGREE

The degree Doctor of Philosophy is not conferred solely as the result of faithful study extending over any prescribed period; special attainments are required in all candidacy for this degree, particularly the power of independent investigation as shown by the production of a thesis embodying original research or creative scholarship, presented with a fair degree of literary skill. Candidacy for the degree is based upon resident graduate study normally extending over a period of not less than three academic years, at least one of which must be spent at this university. Candidates who are engaged in teaching or other remunerative employment will be required to devote to their candidacy such additional period in excess of three years as may be designated by the Graduate Committee.

The attention of graduate students is called to the following regulations respecting candidacy for the doctor's degree and he will be presumed cognizant of them.

1. Major Study. Candidates for this degree are required to select a major study which may be coextensive with one of the "subjects" under which the departmental announcements of courses are classified, or which may be constructed from two closely related subjects. Only in exceptional cases and with the prior approval of the Director of the Graduate School will a major be allowed to extend to more than two subjects. The courses composing the major may be divided among several instructors, one of whom, designated as In Charge of the Major Study, will act as the student's adviser in the selection and arrangement of courses constituting the major and also the minor studies defined below, and will have immediate supervision of the thesis.

2. Minor Studies. Supplementary to his major work, the candidate must pursue one and may pursue two minor studies. If but one minor is offered, it should represent from one-fourth to one-third of the entire work given to candidacy for the degree.

An amount of work not exceeding one-half of the whole may be divided between two minors, but no minor study will be recognized which represents less than one-third of the full work of an academic year. At least one minor must be taken outside the department in which the major lies and no minor may be taken in chief part under the professor in charge of the major. A minor study must lie wholly within a subject as above defined and shall include no part of any subject that enters into the major study.

3. Not later than November 1 of the academic year in which the doctor's degree is to be taken, each candidate for the degree must submit to the Director of the Graduate School certificates from the departments of French and German of the University of Wisconsin, showing that he possesses a sufficient reading knowledge of these languages to use them for purposes of research in his major study. All graduate students are urged to absolve this requirement at the earliest possible date.

4. Not later than November 1 of the academic year in which the degree is sought, the candidate shall file with the Director of the Graduate School his formal application for admission to candidacy, accompanied by the title of his proposed thesis, subject to future verbal amendment, and by departmental recommendation of his candidacy obtained through one of the following methods:

(a) Through a written examination conducted by the departments in which his major and minor subjects lie and designed to test the extent of his knowledge in those fields. The questions constituting this examination and the answers, graded with respect to excellence, must be filed with the Director of the Graduate School at or before the time at which application for admission to candidacy is made.

(b) Through an oral examination of purpose and scope comparable with (a) but conducted by the departments concerned in the presence of one or more representatives of the University designated for that purpose by the Director of the Graduate School. A report upon this examination delimiting its scope and the degree of merit shown by the candidate and signed by the examiners and by the representative above named must be filed with the director at or before the time at which application for admission to candidacy is made.

(c) Through the application of such other substantial tests as the department may elect. In this case a report must be filed with the Director setting forth the nature of the tests employed, and the report must bear the signatures of the professor in charge of the candidate's major and minor subjects.

The several examinations and tests above prescribed will normally be held at the close of the second year of graduate study, but, with the prior approval of the Director of the Graduate School, they may be placed at any date within four months of the normal time.

When approval of a candidacy is made through either of the methods above designated (a) or (b), it may be accompanied by a memorandum limiting the scope of the final oral examination to a specified part of the major and first minor subjects, and may further provide for a written examination to be held immediately prior to the oral examination as a supplement to it.

The Director of the Graduate School will transmit to the committee upon the oral examination provided in Rule 5, the reports and other papers filed as above prescribed, for such consideration and use as the committee may desire to give them.

5. Every candidate for the doctor's degree will be orally examined upon the general field of his major and minor studies but examination upon a second minor subject may be waived upon the recommendation of the instructor in charge accompanied by a certificate that the candidate has passed a special written examination adequately covering the field of such subject. Subject to the approval of the President of the University the Director of the Graduate School will appoint for each candidate an examining committee, usually composed of five members, and will designate a time and place for the examination.

6. Ten days prior to the oral examination the candidate shall deposit his thesis, approved for form by the Director of the Graduate School with the student's major professor for the use of the examining committee. He shall likewise deposit with the Director of the Graduate School an abstract of his thesis certified by the major professor to be suitable for publication. The certificate of the University Librarian that he has received the printed copies of the thesis prescribed in Rule 7 will be accepted in satisfaction of this requirement. In exceptional cases, by consent of the Graduate Committee and upon the recommendation of

the professor in charge of the major, the candidate for the doctor's degree may be permitted to take the general oral examination prior to the approval of the thesis, but the degree will not be conferred until the candidate has passed an additional oral examination upon the special field of his thesis, to be held when the thesis is approved.

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. In the case of a doctor's thesis published in (1), such scholarly periodicals, or society or university publications, as shall be approved by the Director of the Graduate School; or (2), in bound volumes issued and sold by well known publishing houses, approved by the Director of the Graduate School, the candidate shall be required to deposit six copies of reprints, or volumes, with the University Librarian, in form approved by him, in lieu of the hundred copies otherwise required. The diploma may be conferred before the thesis is printed, provided a written or typewritten copy bearing the approval of the major professor is deposited with the University Librarian, and the sum of fifty dollars is deposited with the Bursar of the Regents as a guaranty of subsequent publication. This deposit will be refunded on presentation of the printed copies to the University Librarian within the ensuing two years but is liable to forfeiture after this period.

DEGREE OF DOCTOR OF PUBLIC HEALTH

The degree of Doctor of Public Health (Dr. P. H.) is open to holders of the degree of Doctor of Medicine from medical schools recognized as maintaining satisfactory standards. Candidates for the degree of Dr. P. H. must spend at least two years in the study of sciences related to hygiene and public health, subsequent to the regular medical course. The last of these years must be spent at Wisconsin and be devoted chiefly to work upon a special subject leading to a thesis containing some original research acceptable to the Executive Committee of the Medical School. The general requirements for the degree are essentially

similar to those specified for the degree of Doctor of Philosophy with the following exceptions:

1. The language requirements are those maintained for the B. S. degree (Medical Science Course).

2. The time requirements are as outlined above.

3. The preliminary examination of the candidate is to be conducted by and his thesis approved by the executive committee of the medical school as well as by the department in which the major work is taken.

FEES AND EXPENSES

Graduate students, including those working under supervision *in absentia*, pay the same fees as undergraduates in the College of Letters and Science. See Index, under Fees and Expenses.

COURSES FOR GRADUATES

In all departments of the University courses are offered for undergraduates and graduates, and in many of them, courses primarily for graduates. These courses are described under the above headings in the departments of study in which they are severally offered.

GRADUATE CIRCULAR

The special announcement of the Graduate School for 1912–13, giving detailed information concerning the school, may be obtained upon application to the Registrar of the University.

DEGREES

CONFERRED ON COMMENCEMENT DAY, 1911

COLLEGE OF LETTERS AND SCIENCE

Bachelor of Arts

Harry Gustav Albert Abendroth
Laurinda Anna Albers
John Carl Andressohn,
Mary Lucile Ayer
Hazel Babcock,
Harriet Carolyn Baenen
Mabel Lorraine Bahr,
Samuel Lyman Barber
Marie Christiana Bartenbach
Everetta Ethel Bass
Roger Putnam Batchelor
Emma Wilhelmina Becker
Charles Williams Bedwell
Paul Blackburn
Elmer Bingham Blake
Cornelia Louise Boettge
*Karl Kasper Borsack
Sophia Boss
Stanley Mayo Boyd
Ward Franklin Boyd
Otto Franc Bradley
Mabelle Claire Bredette
*Ann Ursula Brennen
Bernice Stockton Brown
*Irving Henry Brown
Timothy Brown
Louise Langdon Buck
Glenna Catherine Buckley
Anga Marie Burnson
Otto Edward Buth
William Edward Butt
Zelda Byrne
Florence Melanie Carpenter
Bessie Ann Carter
Fred Gay Carter
Lucy Ada Case
Mark Bailey Castelloe
*Ruby Belle Chappell
John Lawrence Childs
Caroline Louise Clausen
Margaret Loretta Collentine
Mary Storer Conover
Norma Conyne
Frances Catherine Coon
Harold Howell Crawford
Marion Dahl
Agnes Helene Dahle
Lawrence Charles Dake
Marie Warren Damon
Elizabeth Mary Davis
Margaret Frances Davison
Charles William Dawson
Beatrice Marian Dayton
Esther Ethel DeBoos
Alida Degeler
*Luther William Deniston
Raymond Albert Denslow
Bessie Hoard Dexter
Estelle Madaline Didier
Arthur Brittan Doe
John Alexander Dorney
Grace Sue Dunwiddie
Mathilda Elsie Eggener
Herbert Walter Eidmann

* Degree conferred since commencement, 1911.

William Henry Ellis
Evelyn Emerson
Esther Johanna Erb
Anita May Eschenburg
*Victor John Farrar
Bess Farrell
Kayutah Ferrar
David Joseph Flanagan
Belle Louise Fleek
Alfred Thomas Flint
Kathryn Margaret Fordyce
Leonard Peter Fox
Lucy Wells Fox
Dorothy Frankenburger
Cynthia Pearl Probert Frey
Lillian Mary Frogatt
James Robert Gates
Josephine Myrtle Gath
Herman Martin Gersbach
Orson Clarke Gillett
Edwin Arthur Gottschalk
Mae Lillian Graham
Bessie Gertrude Gulliford
Margaret Oria Habermann
Margaret Barbara Habhegger
Lovina Lucile Haddow
Carl Herman Haessler
George Peter Halverson
Leonora Hambrecht
Lulu Runge Hambrecht
Loretto Frances Hannan
*Andrew Elmor Hansen
Charles Ford Harding, Jr
Medora Emmeline Harker
Hester Lewis Moore Harper
Fleurette Sophie Hartwig
Margaret Louise Head
Robert Pinkerton Heald
Lura Fellows Heilman
Roman August Heilman
Irma Amalie Hellberg
Grace Cronkrite Helmer
Olive Rosetta Hendrickson
Grace Angeline Hessing
Josephine Heuer
*Jane Elizabeth Hobbs
Elsie Anna Hoebel
Gertrude Mary Hohler
Florence Ethel Holcombe
Malynda Curtice Holley
*Marion Helen Holmes
Helen Amanda Hood
Hazel Houser
William Tracy Hover
Herbert Dutton Hurn
Luis Cirilo Infante
Hester Antoinette Jacobs
Lillian Augusta Jaedecke
Ada Frances James
Mary Elizabeth James
Wilhelmine Henrietta Johannes
Edna Grace Johnson
*J. Leroy Johnson
*Laurie Child Johnson
Quincy Journey Jones
†Victoria Esther Jones
Jacinto Manila Kamantigue
Thomas Matthew Kearney, Jr.
Marion Caro Keats
Paul Frederick Kelly
Annie Bell Kirch
Gertrude Kitchell
Florence Katherine Klaus
Myra Ellenetta Knapp
Rokuro Konno
Bernard Charles Korn
Else Frieda Landeck
*Maud Luella Lea
Sarah Katherine Lehmann
Caroline Margaret Lewis
Harmon Lewis
Hilda Margaret Lins
Jennie Lorenz
Ada Ormsby McAdam
*Ida Belle McAdow
Martha Swingley McClure
Arlie Mae McComb
Delyle Howard McDermaid
Charlotte McDougall
Della McGregor
Douglas Francis McKey
Esther Caroline Mangan

---

* Degree conferred since commencement, 1911.
† Degree conferred March 1, 1911.

Marie Mathilda Martin
Marion Eliza Martin
Mary Anne Martin
Roy Martin
Harriet Maxon
*Loretta Catherine Meighen
Alice Marguerite Melick
Rhea Belle Meloche
Fred Merk
Elfreida Merz
Ocea May Metcalfe
Erwin Aaron Meyers
Nora May Mielenz
Maude Miller
Walter Baker Miller
Kathleen Moroney
Hannah Morris
Harold Hulett Morris
Ella Margaret Mosel
Mildred Mamie Murray
Alice Jane Nelson
Ferne Desire Nelson
William Louis Ninabuck
Lona Margaret Norris
Albert Henry Ochsner
Sigurd Louis Odegard
Effie Clarissa Paine
Marjorie Gertrude Park
Thad Cassius Parr
Elva E. Partridge
Laura Maida Penniston
Louise Perkins
Mary Sophie Peterson
Mabel Pierpont
Josephine Adelia Plank
Orville Brandon Porter
Jennie Elizabeth Potts
Alice Helena Raymond
Oscar Norton Refsell
Rose Beatrice Reichert
Lillian Antoinette Reinking
Arch Eldredge Richards
Elizabeth Lyle Richards
Anna Kurt Rietow
Ethel Theodora Rockwell
Norma Rosalie Roehm
Leone Roffers
Dorothy Rogers
Martha Jane Rogers
Gertrude Amy Rosencranz
Elizabeth Rossberg-Leipnitz
Jesse Jones Ruble
Theresa Marie Ryan
Carl William Sagen
Marie Rachel Sander
*Mamie Amelia Sanders
Harriet E. MacKowen Schaper
*Katherine Schladweiler
Alfred Charles Schmidt
Irma Natalie Schmidt
Theodora Geneva Schmirler
Gretchen B. Schoenleber
Helen Margaret Schram
Henry Charles Schranck, Jr.
Matilda Emma Schuh
Emma Johanna Schulze
Edith Emma Schuster
Elsa Nona Schweppe
Gladys Carrie Scribner
Edith Amelia Sears
Lillie Emelie Seilstad
Estelle Arlette Shapiro
Frances Ermina Shattuck
Jean Thomas Sheafor
Anna Ida Sinnen
Emily Ida Sinnen
Alma May Slater
Luella Belle Smeaton
Alice Belle Smith
Ella Mabel Smith
Gladys Smith
Grace Marie Smith
Harry Forsythe Smith
Mabel Marion Smith
Johanna Grace Soland
Arthur August Sperling
William Henry Spohn
Lewis Arthur Stark
Anna Corrine Steen
Eva Stenhouse
*James Colclazier Stephens
Pearlie Mae Stetler
Ross Orville Stine
Sibylla Mae Stitzer

* Degree conferred since commencement, 1911.

Millie Coe Stone
Irma Susie Strassen
Clara Millard Stryker
Ethyl Frances Swan
Edna Swenholt
Henry Sterling Taylor
*Clarence John TeSelle
Oscar Benjamin Thayer
Thaxter, Crugier Thayer
Charles Goodwin Thompson
Martin John Thue
Helen Gertrude Thursby
Michael Francis Timbers
*Bertha Trautman
Elizabeth Tucker
Margaret Louise Tuffley
Marion Deane Tufts
Phoebe Ann Twining
Dorris Lovice Tyler
Bessie Florilla Tyrrell
Helen Christmas Tyrrell
Alice Browne Underwood
Bertha Van Hove
Winnifred Anna Van Vleck
Florence Leotta Van Vliet
Fay Vaughan
George Arthur Vollmer
Irene Adelaide Walsh
Charlotte Jane Warden
Paul John Weaver
Edna Hertha Weber
Gertrude Janet Wehmhoff
*Florence Adele Wells
Leslie Longley Welter
Marian Whidden
Eva Parker White
Alma Magdalin Wiechers
Harry Goetseels Wilde
Frederick Erdman Jesse Wilde
Florence May Wilson
Coila Maria Winter
Otto Louis Winter
Herman Louis Wittwer
Edna Pearl Witwen
Lisette Katherine Woerner
Helen Margaret Wolf
Cordelia Eleanor Worthington
Marie Louise Wright
Rowe Wright
Harold George Yahn
Anna Barbara Zellmann
Aimee Mary Zillmer

Course in Commerce

Harold Augustus Arpin
Rupert Joseph Batz
George Edward Cleary
Erwin Joseph Dohmen
Robert Dickinson Green
Robert Littlefield Hatch
Charles Lester Johns
Arthur Kleinpell
Clifford LeRoy McMillen
Robert Connor O'Malley
Will Cleveland Reyer
Chester Ferdinand Rohn
Robert Louis Schuetter
Alvin Walter Schwarting
Calvin Floyd Schwenker
Charles Richard Sexton
*Kenneth Loveland Smith
*Leo Joshua Stephens
Louis Herman Stolzenburg
Edgar Carpenter Wilson
William Herman Zinke

Bachelor of Philosophy

Elizabeth ApRoberts
Alice Baker
Amanda Marie Bodden
Grace Mary Conlan
Estelle Cory
Margaret Katherine Dunphy
*Paul Frederick Finner
Florence Villritt Hargrave

* Degree conferred since commencement, 1911.

Mary Hargrave
Ruth Margaret Johnson
Julia Winnifred Johnston
Roy Clair Judd
Mary Ellen Murphy
Sarah Estelle O'Hora
Elizabeth Quackenbush
*Walter Phillip Schatz
*Madeline Semmelmeyer
Roxie Eva Barbara Shepherd
William Nicholas Steil
*John Wills Taylor
Leora Vail
Matthew Fletcher Wadleigh
Hattie Edith Webster
†Jerry Edward Wodsedalek
Frederick Charles Worthington
Katherine Desire Wright

Bachelor of Science, Medical Science Course

Gerald Randolph Allaben
Gilbert Elliott Brereton
James Philip Dean
Victor Sofus Falk
Forrest Henry Frey
Albion Henry Heidner
Lloyd William Johnson
*Francis B. McMahon
Ralph Kenneth Mitchell
Oscar Eugene Nadeau
Frank Richard Nuzum
William Joseph Quigley
Walter Fritz Winholt

Bachelor of Science, Chemistry Course

Frederick Whelpley Bentzen
Carl Diedrich Geidel
John Augustus Schreier
Otto Wiese

Graduate in Pharmacy

Edwin Bruce Arnold
John August Baker
John Raymond Beedle
Lynn Wider Byron
Gustave Joseph Gigot
William Seymour Hammersley
James Hanson
Harold Howard Holmes
Henry Olia Jaastad
William Otto Kleinheinz
Harry William Leonard
*Paul Francis Pfeil
Ralph Pomeroy
Andrew LeRoy Quigley
Oscar Rennebohn
John Wigren, Jr.

COLLEGE OF ENGINEERING

Bachelor of Science

CIVIL ENGINEERING COURSE

Howard Merle Anderly
Walton Cook Ball
John Herman Barth
Horace Merle Beebe
James Baldwin Bingham
Albert Birch
Harry Duvall Blake
Hans Nelson Brue
Clayton Roger Burt
William Harrison Curwen
Drake Paul Dale
†Lorenzo Juan Davila

---

* Degree conferred since commencement, 1911.
† Degree conferred March 1, 1911.

Louis Edward Dequine
John Walter Dohm
Carl William Esau
Edward John Fetzner
Charles Roswell Fisher
Otto Fred Goeke
Carl Martin Halseth
Walter Adams Hatch
Philip Henry Hintze
Fritz J. Hoffman
William Raymond Holmes
Tometaro Kitagawa
Meinhard Carl Koenig
John Wesley Lowell, Jr.
Andrew Ludberg
Carl John Lueders
Juan Guico Macaraeg
Arthur Edwin May
*Forest Foster Mengel
Charles James Moritz
George Harold Nickell
Edwin J. Paulus
Ernest Leopold Pflanz
Louis Frederick Pope
Walter August Reinert
George Allen Scarcliff
Joseph Philip Schwada
William Louis Schwalbe
Charles Morrison Scudder
Ewald Daniel Steinhagen
*Lyman Robert Talbot
*Herbert Cecil Taylor
Frances Arthur Torkelson
Frederick William Ulius, Jr.

MECHANICAL ENGINEERING COURSE

Henry Austin Christie
Harvey William Edmund
Clifford Fell Gray
Robert Holverscheid
Ralph Sherman Hoyt
Karl Louis Kraatz
John Sutherland Langwill
Angus MacArthur, Jr.
James Donald McLean
Roger Sherman Moore
Benjamin Harrison Mueller
Roy Chester Phipps
William Harold Pugh
Chapin Roberts
Alexander Carlton Sladky
George Elias Steudal
Nathan Clark Sweet
Robert Dwight Watson
Arnold Adolph Wegner
Lucien Alexander Wood

ELECTRICAL ENGINEERING COURSE

Jesse Fred Alexander
Carroll Owen Bickelhaupt
Carl William Borecky
Glen Parker Cowan
Ernest Werner von Geltch
Louis Earle Glover
Edward Haven Handy
Kenneth Ross Hare
Earl Hills
John Alexander Hoeveler
Foye Peabody Hutchinson
Howard Frederick Ilgner
Maurice Johnson
Edward Albert Kalsched
Aloysius Deony Keller
Henry Halleck Kerr
Herman Henry Koenig
Maurice Brereton Lamont
Jesse Edward Lauderdale
Frank Henry Lawrence
James Nichols Lightbody
Bert E. Miller
Alfred Geoffrey Oehler
Samuel Reuben Shapiro
Stewart Woods Stanley
Charles Earl Terry
Leonard Eugene Voyer
John Baptist Whelan
George Leybourne White
Willis Raymond Woolrich

* Degree conferred since commencement, 1911.
† Degree conferred March 1, 1911.

CHEMICAL ENGINEERING COURSE

William Tyler Cushing
Edmund Clarence Haag
Frederich Louis Theurer
Albert Ray White
Frank Louis Wurl

MINING ENGINEERING COURSE

William Verne Bickelhaupt
Cyril Anton Fay
Daniel McPherson Grant
William Gilchrist Pearsall
Almon Fulton Robertson
Herbert Edgar Schmidt

GRADUATES OF ADVANCED ENGINEERING COURSES

Civil Engineer

John Rudolph Iakisch

Mechanical Engineer

Loren Loomis Hebberd

Electrical Engineer

John Hugo Johnson
William Bilton Kemp
James Mainland
William Ulysses Murrish

Engineer of Mines

Lloyd Gomer Bonesteel

COLLEGE OF AGRICULTURE

Bachelor of Science (Agriculture)

Martin Anderson
Walter Axley
Arthur Christopher Baer
Roy Perry Bean
Otto Ingman Bergh
George August Blank
George Byron Carter
Thomas Rustone Davidson
John James Doerschuk
Sidney Ball Dudgeon
Claude B. Ernst
Ewald Reinhard Finner
John Cameron Graham
Edward John Graul
Carl Hugo Hanson
William Canterbury Howe
Ray Stillman Hulce
William Malcolm Jackson
Benjamin Jelinek
Hugh Christian Johnson
Benjamin Donald Leith
James Bernard McNulty
Alfred Henry Meyer
Frank Barron Morrison
Robert Lewis Post
Emil Rauchenstein
Griffith Richards
John Samuel Roeseler
Raymond Young Sanders
Leroy Adolph Schoenmann
Verner Ephraim Scott
Robert Flint Smiley
Harvey George Smith
*David Mack Warren
Hubert Draper White
Walter Evan Wied

* Degree conferred since commencement, 1911.

Bachelor of Science (Home Economics Course)

Fern Esther Boll
Nora Buell
Anita Louise Dohmen
Leone Marie Fess
Grace Carrier Howe
Christmas Kelly
Clarissa Augusta Kuhns
Alice Lloyd-Jones
Hazel Marguerite Mead
Vera Virginia Mutchler
Anna Pfund
Annabell Turner
Roxie Marie Yorgey

Graduate in Agriculture

Frank Arthur Belz
George Andrew Belz
Allen Olmsted Brophy
Charles Frederick Burton
Bernard Henry Conlin, Jr.
Walter Rockwood Dunwiddie
Elmer Gerhard Elvehjem
*Albert Martin Field
Earl Elmer Langworthy
Glen Alcott Palmer
Byron Sears Potter
William Albert Reid
Miles Albert Robinson
Gilbert Wright Stone
Kenneth Stuart Templeton
Willard Wilson Yates

LAW SCHOOL

Bachelor of Laws

Louis Arthur Coorsen, B. A.
Arthur John Crowns
Richard Frederick Duckert
Shirley Lincoln Emmett
Fred Henry Esch, B. A.
*Clark Robinson Fletcher
†Albert William Grady, B. A.
*Oscar Rudolph Haase, B. A.
Emery David Harnden
Marx Hirsch, B. A.
*James Mangan Hogan, B. A.
Emmet Horan, Jr.
John Reese Jones
George Jacob Leicht
Harvey Augustus Malig
James Francis Malone
Frank Callis Meyer
Peter James Murphy
*Haskell Noyes, B. A.
Albert Wallace Orr, B. A.
Clifford Coleman Pease, B. A.
Alvin Benjamin Peterson, B. S.
John Archibald Roberts
Herman William Sachtjen, B. A.
Alvin Lawrence Stengel
Clarence John TeSelle
†Ko-ung Wong

SCHOOL OF MUSIC

Graduate in Music

Margaret Anderson
Barbara Hazel Klinefelter
Grace Irma Polley

Graduates from Course for Supervisors of Music

Lucinda Langworthy Carr
Florence Lea Gosselin
Florence Ione Hugill
Barbara Hazel Klinefelter
Frances Esther Lehmann
Elvera Matson
*Mattie Salome Ringling
Lillian Victoria Sunstrum

* Degree conferred since commencement, 1911
† Degree conferred March 1, 1911.

GRADUATE SCHOOL

Master of Arts

†Loyal Blaine Aldrich, B. A. (University of Wisconsin), in Physics.
Lelia Bascom, B. L. (University of Wisconsin), in English.
Ernest F. Bean, B. A. (University of Wisconsin), in Geology.
*Benjamin Sanford Beecher, B. A. (University of Wisconsin), in Political Economy.
Edward William Blakeman, B. A. (Lawrence College), in Political Economy.
*Alice Julia Borresen, B. A. (University of Wisconsin), in Romance Languages.
Rose Andrews Bowen, B. A. (University of Wisconsin), in English.
†Julia Louise Clark Brookins, B. A. (University of Wisconsin), in English.
Gilbert Lee Brown, B. L. (Ohio Northern University), in Education.
*Lena Celestus Bruner, B. S. (Franklin College), in Mathematics.
Charles Winfield Burchard, B. A. (Allegheny College), in Chemistry.
*Agnes Challoner, B. A. (University of Wisconsin), in Chemistry.
*George Arthur Chaney, M. S. (Highland Park College), in Mathematics.
Guok-Tsai Chao, B. A. (University of Wisconsin), in Political Science.
Roy V. Coleman, B. A. (Kansas University), in History.
Clarence Edwin Cousins, B. A. (Tufts College) in Romance Languages.
Alma Daniels, B. A. (Swarthmore College), in German.
*Walter Bert Davison, B. A. (University of Wisconsin), in Political Economy.
*Amritlal C. Desai, L. Ag., (College of Science, India), in Political Economy.
Frederic Ernst, B. A. (Charleroi, Belgium), in Romance Languages.
Elizabeth Learoyd Ewing, B. L. (Smith College), in Latin.
Alexander Fleisher, B. A. (University of Pennsylvania) in Sociology.
Herbert Spencer Gasser, B. A. (University of Wisconsin), in Anatomy.
Bertha Mary Gesell, B. A. (University of Wisconsin), in German.
Denton Loring Geyer, B. A. (University of Wisconsin), in Philosophy.
Grace Gertrude Goodrich, B. A. (Ripon College), in Latin.
John Robert Hayes, B. A. (University of Wisconsin), in Political Science.
*Abby May Higgins, B. A. (Ripon College), in Latin.
*Willard Wellington Hodge, B. A. (Ripon College), in Chemistry.
*Roberta Hodgson, B. S. (Teachers College, New York), in History.
Frances Ethlyn Holt, B. A. (Ripon College), in English.
*Minoru Ikeda, Graduate, (Osaka Higher Comm'l School), in Political Economy.
Agnes Learned Johnson, B. A. (University of Wisconsin), in Romance Languages.
*Marie Antoinette Kasten, B. A. (University of Wisconsin), in History.

---

* Degree conferred since commencement, 1911.
† Degree conferred March 1, 1911.

Susan Catharine Klinkhammer, Ph. B. (University of Wisconsin), in German.
*Lenore Krause, B. A. (University of Wisconsin), in French.
Howard Thompson Lewis, B. A. (Lawrence College), in Political Economy.
Fannie Winifred Lyon, B. A. (Allegheny College), in English.
Philip Walter MacDonald, B. A., (University of Wisconsin), in History.
Clifford Cyrille Meloche, B. A. (University of Wisconsin), in Chemistry.
Earl Bowman Millard, B. A. (University of Colorado), in Chemistry.
*Paul G. Miller, B. A. (University of Wisconsin), in Education.
*Julia Aloysius Murray, B. A. (University of Wisconsin), in English.
Ralph Woodland Owen, Litt. B. (Princeton University), in English.
Lylia Janet Owens. B. A. (University of Wisconsin), in German.
Francis Ward Paine, B. A. (Yale University), in Geology.
Mabel Bird Palliser, B. A. (Vassar College), in History.
Maude Marshall Parkinson, B. A. (University of Wisconsin), in French.
†Bertha Marie Rakow, B. A. (University of Wisconsin), in German.
*Pauline Katherine Rieth, B. A. (University of Nebraska), in German.
Cora Josephine Rohn, B. A. (University of Wisconsin), in German.
Philip Rosenberg, B. S. (Ohio Wesleyan University), in Physics.
Frances Ruedebusch, B. A. (University of Wisconsin), in History.
Jessie Gertrude Schindler, B. A. (University of Wisconsin), in English.
Mariele Rosalie Schirmer, B. A. (Milwaukee-Downer College), in German.
Hyrum Schneider, B. A. (Brigham Young University), in Geology.
Clanton Paine Shangle, B. A. (University of Oregon), in Political Science.
Jessie Evelyn Sherman, Ph. B. (University of Chicago), in Education.
*Wilson Porter Shortridge, B. A. (Indiana University), in History.
Henry Lyman Simpson, B. A. (Kansas State University), in History.
*Alice May Sinclair, B. A. (Beloit College), in Botany.
*Sister Mary James Cavanaugh, B. L. (University of Wisconsin), in English.
*Sister Mary George Adamson, B. A. (Washington University) in Latin.
Olaus Olson Sövde, B. A. (Carnegie University), in Norse Literature.
Peter Alexander Speek, (Graduate of Teachers' College, St. Petersburg), in Political Economy.
Henry Edward Swensen, B. A. (University of Wisconsin), in History.
Chu-Tung Tsai, B. A. (University of Wisconsin), in Political Science.
Louis Peter de Vries, Jur. Can. (University of Leyden), in Romance Languages.
Mary Jennie Walters, B. A. (State Teachers' College, Iowa), in Latin.
Andrew Thomas Weaver, B. A. (Carroll College), in Philosophy.
Corinne Rosalys Wendel, B. A. (Adelphi College), in English.
*Alfred Edward Whitford, B. A. (University of Chicago), in Physics.
Herbert Wing, Jr., B A. (Harvard University), in History.
*Howard Webster Wolfe, B. A. (University of Indiana), in German.
Grace Anna Wright, B. L. (University of Wisconsin), in History.
F. Milton Yockey, B. A. (Simpson College), in Political Science.

* Degree conferred since Commencement, 1911.

Master of Science

John Lucas Bishop, B. S. (Virginia Polytechnic Institute), in Dairy Husbandry.
*Calhoun Lillius Cannon, B. S. (Clemson College), in Agronomy.
Charles Ives Corp, B. S. (Kansas University), in Hydraulic Engineering.
*William Jacobs Cotton, B. A. (Ripon College), in Chemistry.
George Harold Dacy, B. S. (University of Wisconsin), in Agricultural Journalism.
Katherine Agnes Donovan, B. A. (University of Wisconsin), in Home Economics.
*Martin Luther Fisher, B. S. (Purdue University), in Agronomy.
*Marion Jacob Funchess, B. S. (Clemson College), in Soils.
Oliver W. Hunter, B. S. (Kansas State College), in Dairy Bacteriology.
James Johnson, B. S. (University of Wisconsin), in Horticulture.
*George Wannamaker Keitt, B. S. (Clemson College) in Plant Pathology.
Orren L'oyd-Jones, B. S. (University of Wisconsin), in Animal Breeding.
Charles August Mann, B. S. (University of Wisconsin), in Chemistry.
Robert Marshall Murphy, B. S. (University of Tennessee), in Dairy Husbandry
Walter Nebel, B. S. (University of Wisconsin), in Chemistry.
*James Cleveland Pridmore, B. S. (Clemson College), in Agronomy.
Maurice Leonard Richardson, B. S. (University of Wisconsin) in Anatomy.
John Andersen Somdal, B. S. (University of Christiania, Norway), in Chemistry.
Alonzo F. Vass, B. S. (Kansas State College), in Bacteriology.
*Furman Bryant Wise, B. S. (Clemson College), in Agronomy.

Master of Philosophy

Harold Eugene Culver, Ph. B. (University of Wisconsin) in Geology.
*William Bismark Kempthorne, Ph. B. (University of Wisconsin), in Mathematics.
Lenore Leins, Ph. B. (University of Wisconsin), in German.
*William Giles Russell, Ph. B. (University of Wisconsin), in History.
Jerry Edward Wodsedalek, Ph. B. (University of Wisconsin) in Zoology.

Civil Engineer

Horace Prentice Boardman, B. S. (University of Wisconsin).
Thesis: Wind pressure against inclined roofs.
John George Hirsch, B. S. (University of Wisconsin).
Thesis: Report on the plant and pumpage requirements of Evelth, Minnesota, waterworks.
Herbert John Kuelling, B. S. (University of Wisconsin).
Thesis: The present status of bituminous road construction.

---

* Degree conferred since commencement, 1911.

Marcus Sanders McCollister, B. S. (University of Illinois).
Thesis: Investigation of the losses in a reciprocating power pump, including a special study of the valve action.

*Elmer Earl Moots, M. S. (University of Illinois).
Thesis: The design and testing of a monorail car model.

William Atkinson North, B. S. (University of Illionis).
Thesis: Investigation of the losses in a reciprocating power pump including a special study of the valve action.

Daniel Parker Pace, C. E. (University of Texas).
Thesis: Design of a hydro-electric plant on the Colorado river at Austin, Texas.

*Harry E. Pulver, B. S. (University of Wisconsin).
Thesis: The design and testing of a monorail car model.

Mechanical Engineer

Joseph Robert Smith Blaine, B. S. (University of Wisconsin).
Thesis: The design of a band resaw and its relation to the manufacture of lumber.

Henry Charles Schneider, B. S. (University of Wisconsin).
Thesis: Theory and development of windmills.

Electrical Engineer

George Barnes Blake, B. S. (University of Wisconsin).
Thesis: Corona Loss.

Franz August Kartak, B. S. (University of Wisconsin).
Thesis: Argon in the incandescent carbon lamp bulb.

Wilmar Francis Lent, B. S. (University of Wisconsin).
Thesis: Argon in the incandescent carbon lamp bulb.

Glen Edward Smith, B. S. (University of Wisconsin).
Thesis: Investigation of a proposed method for obtaining high frequency currents from continuous current sources.

Edward Schildauer, B. S. (University of Wisconsin).
Thesis: Design construction operation tests of construction plant for Gatun locks and Gatun dam of the Panama canal.

Rudolph Frederick Schuchardt, B. S. (University of Wisconsin).
Thesis: Short circuit tests on a 12000 K. W. 9000 colt, 25 cycle turbo-generator with external reactance coils.

Chemical Engineer

Walter Biersach Schulte, B. S. (University of Wisconsin).
Thesis: Heat transmission and transfer and a study of the heat transference from a cast iron partition to various solutions.

Lawrence Charles Turnock, B. S. (University of Illinois).
Thesis: The electrolytic corrosion of iron and steel by stray currents.

* Degree conferred since Commencement, 1911.

Engineer of Mines

Julius Fred Wolff, B. S. (University of Wisconsin).
Thesis: The treatment of the sandy iron ores of the western Mesabi range, Minnesota.

Doctor of Philosophy

*Martin Fuller Angell, M. A. (University of Wisconsin), in Physics, Mathematical Physics, Electrical Engineering.
Thesis: Thermal conductivity of metals at high temperatures.

Frances Campbell Berkeley, M. A. (Columbia University), in English Literature, Comparative Literature, French.
Thesis: Mary Sidney, Countess of Pembroke.

Joseph Granger Brandt, Ph. B. (Lawrence College), in Latin, Greek, Archaeology.
Thesis: A contribution to the history of the third Augustan legion with special reference to religion.

William Henry Collins, B. A. (University of Toronto), in Geology, Petrography, Physical Chemistry.
Thesis: The geology of Gowganda mining division.

Guy Henry Cox, M. A. (University of Wisconsin), in Geology, Petrography, Chemistry.
Thesis: The origin of the lead and zinc ores of the upper Mississippi valley.

*Frederick William Cunningham, B. S. E. E. (Princeton University), in Electrical Engineering, Chemical Engineering, Physics.
Thesis: A study of fume settling.

James Nimrod Currie, M. A. (Indiana State University), in Agricultural Chemistry, Physical Chemistry, Bacteriology.
Thesis: A study of the optical form of lactic acid produced by pure cultures B. Bulgaricus.

*Horace Grove Deming, M. S. (University of Wisconsin), in Chemistry (General and Physical), Organic Chemistry and Applied Electrochemistry.
Thesis: Some compounds of cellulose.

*Melvin Edison Diemer, M. A. (University of Wisconsin), in Inorganic Chemistry, Geology.
Thesis: A study of aurous compounds.

Paul Harrison Dike, M S. (Northwestern University), in Physics, Mathematical Physics, Meteorology.
Thesis: Photo-electric potentials of thin cathode films.

*James Arthur Estey, B. A. (Oxford University), in Economic Theory, Labor Problems, Political Science.
Thesis: Revolutionary syndicalism in France.

William Elmer Forsythe, M. S. (University of Wisconsin), in Physics, Mathematical Physics, Mathematics.
Thesis: A determination of the melting point of Tungsten and Tantalum.

* Degree conferred since Commencement, 1911.

Lewis Cecil Gray, M. A. (William Jewell College), in Political Economy, Sociology, Agricultural Economics.

Thesis: The genesis and expansion of the plantation system in the southern states of North America during the colonial period.

*Robert Harvie, M. S. (McGill University), in Geology, Petrography, Meteorology.

Thesis: Ontario gabbros and associated ores.

Alcan Hirsch, M. S. (University of Wisconsin), in Chemical Engineering, Inorganic Chemistry, Metallography.

Thesis: The preparation and properties of metallic cerium.

*Earnest Albert Hooton, M. A. (University of Wisconsin), in Latin, Greek, Classical Archaeology.

Thesis: The Evolution of Literary Art in Pre-Hellenic Rome.

*Stanley Kuhl Hornbeck, B. A. (University of Denver and Oxford, England), in Political Science, History, Roman Law.

Thesis: The most favored nation clause in commercial treaties.

*Winfield Scott Hubbard, B. A. (Columbia University), in Organic Chemistry, Physical Chemistry, Pharmacy.

Thesis: Studies of the Tryptic digestion of silk.

Arden Richard Johnson, M. S. (University of Wisconsin), in General and Physical Chemistry, Organic Chemistry, Applied Electrochemistry.

Thesis: A study of organic boro-nitrogen compounds.

*Axel Johnson, M. A. (Kansas University), in Sociology, Political Economy and Political Science.

Thesis: Social and economic effects of unemployment in Milwaukee during 1908 and 1909.

Charles Townsend Kirk, M. A. (University of Oklahoma), in Geology, Mineralogy, Metallurgy.

Thesis: Conditions of mineralization of the copper veins at Butte, Montana.

Jesse Talbot Littleton, Jr., M. A. (Tulane University), in Physics, Mathematical Physics, Astronomy (Celestial Mechanics).

Thesis: The optical constants of alloys as a function of composition.

*George Vest McCauley, M. A. (University of Wisconsin), in Physics, Mathematical Physics, Physical Chemistry.

Thesis: The distribution of energy in the spectra of metals.

Frederick Alexander Manchester, M. A. (University of Wisconsin), in English Literature, French Literature, English Philology.

Thesis: The influence of Sainte Beuve on Matthew Arnold.

*Robert Bell Michell, M. A. (Harvard University), in French Literature, Old Spanish, Comparative Literature.

Thesis: The poetic history of Duc Naime de Baviere.

Max Charles Otto, M. A. (University of Wisconsin), in History of Philosophy, Ethics, Logic.

Thesis: Some logical implications of causation.

---

* Degree conferred since Commencement, 1911.

*Lawrence Marsden Price, M. A. (Tufts College), in German, European History, French.

Thesis: The attitude of the Grenzboten toward English literature.

†Richard Frederick Scholz, M. A. (University of Wisconsin), in Ancient History, Mediaeval History and Latin.

Thesis: Municipal and feudal tendencies in Roman imperial administration.

*Horace Secrist, B. A. (Wisconsin), in Political Economy, Public Finance, Political Science.

Thesis: An economic analysis of the constitutional restrictions upon public indebtedness in the United States.

Leon Irwin Shaw, M. S. (Syracuse University), in General and Physical Chemistry, Inorganic Chemistry, Applied Electrochemistry.

Thesis: Studies of the conductivity of non-aqueous solutions.

*George Ware Stephens, M. A. (University of Wisconsin), in Political Economy, Sociology, Political Science.

Thesis: Early history of railroads in Iowa.

*Paul Emerson Titsworth, Ph. B. (Alfred University), in German, French, English.

Thesis: The attitude of Goethe and Schiller toward French classic drama.

Joseph Douglas Trueman, B. S. (Queen's University), in Geology, Petrography, Chemistry.

Thesis: The value of certain criteria for the determination of the origin of foliated crystalline rocks.

*Benjamin Bruce Wallace, B. A. (Macalaster College), in Political Science, History, Political Economy.

Thesis: Origin and development of village government in New York.

August William Weber, Ph. M. (University of Wisconsin), in Education, Educational Psychology, Philosophy.

Thesis: State control of instruction—a study of centralization in public education.

HONORARY DEGREES

Doctor of Science

George Henry Benzenberg, Consulting Engineer, Milwaukee.

Doctor of Letters

George Santayana, Professor of Philosophy, Harvard University.
Paul Shorey, Professor of Greek, University of Chicago.

---

*Degree conferred since Commencement, 1911.
†Degree conferred March 1, 1911.

Doctor of Laws

*Ernst Daenell, of the University of Berlin. (Harvard Exchange Professor, 1910–1911)

*Max Friedländer, of the University of Kiel. (Kaiser Wilhelm Professor at Columbia University, 1910–1911)

HONORS IN SPECIAL STUDIES

College of Letters and Science

John Carl Andressohn, in German.
Thesis: Die literarische Geschichte des Milwaukees deutschen Bühnenwesens, 1850–1900.

Leonard Peter Fox, in History.
Thesis: Sectionalism in the continental congress, 1774–1776.

Robert Littlefield Hatch, in Commerce.
Thesis: The development of a scientific budget for the state of Wisconsin.

Wilhelmine Henrietta Johannes, in German.
Thesis: A study in the description of the appearance of characters in German novels.

Martha Swingley McClure, in Philosophy.
Thesis: The religious philosophy of Royce.

Ethel Theodora Rockwell, in History.
Thesis: The international copyright in America.

Chester Ferdinand Rohn, in Commerce.
Thesis: Shoe manufacturing with special reference to welt standard screw and nailed shoes.

Edith Amelia Sears, in Latin.
Thesis: A comparative study of plays containing the character of Oretes: Choephori of Aeschylus, Electra of Sophocles, Electra of Euripides, Agamemnon of Seneca, Oretes of Voltaire, Orestes of Alfieri.

William Nicholas Steil, in Botany.
Thesis: Fertilization and related phenomena in ferns.

Law School

Marx Hirsch, B. A.
Thesis: The status of the holding company engaged in the mercantile or the manufacturing business in the United States and its territories.

---

* Degree conferred March 31, 1911.

SUMMARY OF GRADUATES

		1911
Number of first degrees granted, 1854–1911	8790	568
Present Courses:		
Courses leading to the degree of Bachelor of Arts, 1904–1911	1903	323
(Included in the above is the Course in Commerce, 1904–1911, 198; 1911, 21.)		
Course for Normal School Graduates, Ph. B., 1898–1911	349	26
Chemistry Course, B. S., 1909–1911	12	4
Medical Science Course, B. S., 1909–1911	34	13
Pharmacy Course, B. S., 1895–1911	39	
Pharmacy Course, Ph. G., 1884–1911	287	16
School of Music, M. G., 1898–1911	123	3
Course for Supervisors of Music, 1910–1911	8*	8*
Course in Agriculture, B. S., 1878–1911	180	36
Home Economics Course, B. S., 1909–1911	14	13
Course in Agriculture, (Middle Course), Ag. G., 1910–1911	24*	16*
Law Course, LL. B., 1869–1911	1864	27
Chemical Engineering Course, B. S., 1903–1911	38	5
Civi Engineering Course, B. S., 1873–1911	472	46
Electrical Engineering Course, B. S., 1892–1911	433	30
Mechanical Engineering Course, B. S., 1876–1911	312	20
Mining Engineering Course, B. S., 1910–1911	7	6
Courses discontinued:		
Ancient Classical Course, B. A., 1854–1903	470	
Modern Classical Course, B. L., 1876–1903	548	
English Course, B. L., 1887–1903	458	
Civic Historical Course, B. L., 1893–1903	383	
General Science Course, B. S., 1886–1903	722	
School of Commerce (B. L., 8; B. S., 1, 1902–1903)	9	
Normal Course, 1865–1868	25	
Metallurgical Engineering Course, B. M. E., 1876–1896	16	
General Engineering Course, B. S., 1901–1910	92	
Higher Degrees on Examination, 1875–1911	1031	162
Master, 1879–1911	680	101
Engineer, 1879–1911	155	26
Doctor of Philosophy, 1892–1911	196	35

* Not included in totals.

SUMMARY OF DEGREES.

Number of first degrees granted, 1854–1911		8790
Bachelor of Arts, 1854–1911	2373	
Bachelor of Philosophy, 1898–1911	349	
Bachelor of Letters, 1876–1903	1397	
Bachelor of Science, 1873–1911	2356	
Bachelor of Metallurgical Engineering, 1876–1896	16	
Bachelor of Laws, 1869–1911	1864	
Graduate in Music, 1898–1911	123	
Graduate in Pharmacy, 1884–1911	287	
Graduate in Agriculture (Middle Course), 1910–1911	24*	
Normal Course, 1865–1868	25	
Course for Supervisors of Music, 1910–1911	8*	
Higher Degrees on Examination, 1875–1911		1031
Master, 1879–1911	680	
Engineer, 1879–1911	155	
Doctor of Philosophy, 1892–1911	196	
Grand total of first and higher degrees granted, 1854–1911		9821

* Not included in totals.

STUDENTS

GRADUATES

FELLOW AND SCHOLARS

Baker, Frances Helen June — *Stevens Point*
B. A., Carroll College, — Carroll College Scholar.
Blank, George August — *Grafton*
B. S., University of Wisconsin, — Fellow in Agriculture.
Boutwell, Paul Winslow — *Beloit*
B. S., Beloit College, — Beloit College Scholar
Brooks, Robert Preston — *Athens, Georgia*
B. A., Oxford University, England, — Fellow in American History.
Bryan, Samuel — *Washington, D. C.*
M. A., Leland Stanford Junior University — Scholar in Political Economy.
Burns, Josephine Elizabeth — *Macomb, Ill.*
M. A. University of Illinois, — Fellow in Mathematics.
Cook, William Adelbert — *Madison*
M. A., University of Illinois, — Fellow in Education.
Custer, John Sherman — *Madison*
B. A., Oxford University, — Fellow in European History.
Dake, Charles Laurence — *Sparta*
B. A., University of Wisconsin, — Fellow in Geology.
Damon, Marie Warren — *Milwaukee*
B. A., University of Wisconsin, — Teaching Fellow in English.
Das, Rajani Kanta — *Dacca, Bengal, India*
M. S., University of Missouri, — Honorary Fellow in Agriculture.
Degeler, Alida — *Milwaukee*
B. A., University of Wisconsin, — Scholar in Romance Languages.
de Vries, Louis Peter — *Chicago, Ill.*
M. A., University of Wisconsin, — Fellow in Romance Languages.
Doe, Julia Adrienne — *Milwaukee*
M. A., University of Wisconsin, — Fellow in Greek.
Farrell, Bess — *Sioux City, Ia.*
B. A., University of Wisconsin, — Teaching Fellow in English.
Freeman, Clytus Allen — *Madison*
M. A., Albion College, — Fellow in Political Economy.
Grossenbacher, John Gasser — *Geneva, N. Y.*
B. A., University of Missouri, — Fellow in Botany.

Haddow, Lovina Lucile — *River Falls*
B. A., University of Wisconsin, Scholar in English.

Hosler, Mildred Bell — *Reedsburg*
B. A., Milwaukee Downer College, Milwaukee Downer Scholar.

Keitt, George Wannamaker — *Clemson College, S. C.*
B. S., Clemson College, Scholar in Plant Pathology.

Kiekhoefer, William Henry — *Madison*
B. A., Northwestern College, Fellow in Sociology.

Lawrence, James Nelson — *Buffalo, N. Y.*
M. S., Syracuse University, Fellow in Chemical Engineering.

Lehmann, Sarah Katherine — *Woodland*
B. A., University of Wisconsin, Scholar in German.

Leonard, William Ezekel — *Bellevue, Nebr.*
Ph. B., Grinnell College, Fellow in Political Economy.

Leschke, August Herman — *Hartford, Conn.*
B. S., Trinity College, Scholar in Railway Engineering.

Little, Arthur William — *Park Rapids, Minn.*
B. A., Lawrence College, Lawrence College Scholar.

McClure, Martha Swingley — *Mount Morris, Ill.*
B. A., University of Wisconsin, Scholar in Philosophy.

Mayers, Louis — *Brooklyn, N. Y.*
B. A., College of the City of New York,
Fellow in Political Science.

Mielenz, Nora May — *Milwaukee*
B. A., University of Wisconsin, Teaching Fellow in Latin.

Morgan, Ezra Leunidus — *Topeka, Kans.*
B. A., McKendree College, Scholar in Agriculture.

Nelson, Carl Ferdinand — *Rockford, Ill.*
M. A., University of Wisconsin, Fellow in Chemistry.

Notz, William Frederick — *Watertown*
Ph. D., University of Wisconsin,
Honorary Fellow in Hebrew and Hellenistic Greek.

Ort, Albert August L. — *Bensenville, Ill.*
B. S., South Dakota State College,
Fellow in Hydraulic Engineering.

Paine, Effie Clarissa — *Milwaukee*
B. A., University of Wisconsin, Teaching Fellow in Latin.

Palliser, Mabel Bird — *Brooklyn, N. Y.*
M. A., University of Wisconsin, Scholar in American History.

Peters, Chauncey George — *New Richmond*
B. A., Ripon College, Ripon College Scholar.

Schroetter, Erich Wilhelm — *Graz, Austria*
Graduate Gymnasium, Austria, Henry Gund Scholar in German.

Scudder, Charles Morrison — *Marinette*
B. S., University of Wisconsin, Scholar in Hydraulic Engineering.

Shero, Lucius Rogers — *Racine*
B. A., Haverford, Scholar in Greek and Latin.

Simmons, Lucretia Van Tuyl — *Richmondville, N. Y.*
M. A., Pennsylvania State College, Fellow in German.

Strassen, Irma *Lyons.*
B. A., University of Wisconsin, Teaching Fellow in Mathematics.
Taylor, Herbert Cecil *Lancaster*
B. S., University of Wisconsin, Scholar in Structural Engineering.
Wales, Julia Grace *St. Andrews East, Quebec, Canada*
M. A., Radcliffe College, Mary M. Adams Fellow in English.
Wessels, Philip Henry *Flint, Mich.*
M. S., University of Wisconsin, Fellow in Agricultural Chemistry.
West, Allen Brown *Milton Junction*
M. A., University of Wisconsin, Fellow in Latin.
Wilde, Frederick Erdman Jesse tc *Milwaukee*
B. A., University of Wisconsin, Scholar in European History.
Wodsedalek, Jerry Edward *Kewaunee*
M. Ph., University of Wisconsin, Fellow in Zoology.
Zillmer, Aimee *Milwaukee*
B. A., University of Wisconsin, Teaching Fellow in Mathematics.
Zillmer, Raymond, l *Milwaukee*
B. A., University of Wisconsin, Scholar in Political Science.
Zobel, Otto Julius *Ripon*
M. A., University of Wisconsin, Fellow in Physics.

OTHER GRADUATES

Abels, Margaret Hutton *Waukesha*
B. A., University of Wisconsin, Political Economy.
Allen, Grace Sims *Madison*
Ph. B., De Pauw University, German.
Allen, Hugh *Milwaukee*
Graduate U. S. Naval Academy Horticulture.
Ames, Merl McMain *Shiocton*
Ph. B., University of Wisconsin, History.
Anderson, Jean Harriet McLean *Manitowoc*
B. A., Wilson College, German.
Andressohn, John Carl *Milwaukee*
B. A., University of Wisconsin, German.
ApRoberts, Elizabeth *River Falls*
Ph. B., University of Wisconsin, English.
Aron, Albert William *Madison*
M. A., University of Nebraska, German.
Ash, Isaac Emery *Madison*
B. A., West Virginia Wesleyan University, Education.
Ashmun, Margaret Eliza *Waupaca*
M. A., University of Wisconsin, English Literature.
Atwood, Marion John *Madison*
B. A., University of Wisconsin, Political Science.
Awoki, Tamotsu *Kagawaku, Japan*
B. S., Tokyo Polytechnic Institute,
Electric Railway Engineering.

Bachman, Freda Marie. — *Genoa, O.*
M. A., Miami University, Botany.
Bailey, Grace Ethel — *Madison*
B. L., University of Wisconsin, History.
Baker, Oliver Edwin *Madison*
M. A., Columbia University, Agricultural Economics.
Baker, Ross Allen, *Madison*
M. A., DePauw University, Chemistry.
Banning, Bernice Thornton — *Providence, R. I.*
M. A., University of Wisconsin, Greek.
Barnebey, Oscar Leonard *Madison*
M. A., University of Nebraska, Inorganic Chemistry.
Bartholomew, Elbert T. *Stockton, Kansas*
B. A., Kansas State Normal College, Biology.
Bascom, Leila — *Madison*
M. A., University of Wisconsin, English.
Bean, Ernest F. *Madison*
M. A., University of Wisconsin, Geology.
Beath, Orville Andrew *Evansville*
B. A., University of Wisconsin, Chemistry.
Bell, Willis James *Madison*
M. A., University of Wisconsin, Education.
Belsky, Charles James *Madison*
B. S., University of Wisconsin, Electrical Engineering.
Beyer, Theodore Ernest m *Milwaukee*
B. A., Yankton College, Medicine.
Bieber, John Henry *Kutztown, Pa.*
B. S. Muhlenberg College, Mathematics.
Bird, Francis Henry *Wellesley Hills, Mass.*
M. A., Dartmouth College, Political Economy.
Birge, Julius Stanley *St. Louis, Mo.*
M. A., Colorado College, Horticulture.
Birge, Raymond Thayer, *Troy, N. Y.*
M. A., University of Wisconsin, Physics.
Blake, Elmer Bingham, *Milwaukee*
B. A., University of Wisconsin. Political Economy.
Bohannan, Charles Dudley *Columbus, Ohio*
B. A., University of Nebraska, Education.
Bonnell, John Kester *Madison*
M. A., Harvard University, English.
Boss, Sophia — *Oshkosh*
B. A., University of Wisconsin, English.
Boström, Otto Henry *Wollsjö, Sweden*
B. A., Augustana College, Hellenistic Greek.
Bradley, Leah Margaret — *Kingfisher, Okla.*
B. A., Kingfisher College, English.
Brenneman, Jesse La Mar *Madison*
B. S., University of Chicago, Electrical Engineering.

Brereton, Gilbert Elliot c p h m — *Madison*
B. S., University of Wisconsin, — Medicine.
Bresee, Emily May — *Madison*
B. A., University of Wisconsin, — Spanish.
Bridgham, John Merrill — *Dexter, Maine*
M. A., Dartmouth College, — Latin.
Bridgman, Robert White — *Madison*
B. A., University of Wisconsin, — American History.
Brown, Irving Henry — *Madison*
B. A., University of Wisconsin, — French.
Budde, Clarmae — *Palo Alto, Cali.*
B. A., Leland Stanford Junior University, — Political Economy.
Buechel, Frederick Anthony — *Madison*
Ph. B., University of Wisconsin, — Political Economy.
Bumpus, Herman Carey M. m — *Madison*
Ph. B., Brown University. — Anatomy.
Burchard, Charles Winfield — *Madison*
M. A., University of Wisconsin, — Physical Chemistry.
Burton, Anna Livingston — *Livingston*
B. S., University of Wisconsin, — Botany.
Bush, Lydian Ursula — *Sparta*
B. A., Lawrence College, — Latin.
Butt, William Edward — *Madison*
B. A., University of Wisconsin, — Political Economy.
Byars, Luther Parris — *Marion, S. C.*
B. S., Clemson College. — Plant Pathology.
Campbell, Arthur James — *Detroit, Mich.*
B. S., University of Michigan, — Plant Chemistry.
Campbell, Lily Bess — *Winona Lake, Ind.*
M. A., University of Texas, — English.
Carr, Lucina Langworthy — *Madison*
B. A., University of Wisconsin, — English.
Carr, Muriel Bothwell — *St. John, N. B., Canada.*
M. A., Radcliffe College, — English.
Carr, Ralph Howard — *Wooster, Ohio.*
M. A., University of Wisconsin, — Agricultural Chemistry.
Carroll, Alice Berry — *Columbus, Ohio.*
B. S., Ohio State University, — Agricultural Chemistry.
Carson, William Wallace — *Spartanburg, S. C.*
M. A., Trinity College, — American History.
Carter, Homer McClelland, m — *Madison*
B. A., Beloit College, — Anatomy.
Cary, Myra Treat — *Madison.*
M. A., University of Wisconsin, — Political Economy.
Cast, Gottlob Charles — *Madison.*
M. A., Northwestern University. — German Literature.
Cattell, James Llewellyn — *Madison*
B. A., Bucknell College, — French.

Caulfield, Annie Alberta — *Gloster, Miss.*
B. A., Industrial Institute and College, Columbus, Miss. — English.
Chapman, Paul Hardinger — *Toledo, Ohio.*
B. A., St. John's University, — Agriculture.
Cook, Herbert Leigh — *Madison.*
B. S., University of Wisconsin, — Engineering.
Cotton, William Jacobs — *Madison.*
B. A., Ripon College, — Chemistry.
Cousins, Clarence Edwin — *Salem, Mass.*
M. A., University of Wisconsin, — French.
Crain, Edward Patrick — *Eldorado*
Ph. B., University of Wisconsin, — Political Science.
Crane, Fred Randall — *Menomonie.*
M. S., University of Illinois, — Agricultural Education.
Crothers, Hayes Baker — *Ashland.*
B. A., Monmouth College, — American History.
Curtis, Roy Emerson — *Madison.*
M. A., University of Wisconsin, — Political Science.
Cushman, William Howenstine — *Emporia Kansas.*
B. A., Miami University, — Mathematics.
Dagenais, Louis Edward — *St. Jerome, Canada.*
B. S. A., Laval University, — Geology.
Dahm, Thomas Matthew — *McGregor, Iowa.*
M. A., Northwestern University, — Physics.
David, Charles Wendell — *Onarga, Illinois.*
B. A., Hartford University, Oxford, — European History.
Davies, Howell David — *Madison.*
M. A., Princeton University, — Hebrew and Helenistic Greek.
Davis, Daniel Elias — *Columbus, O.*
B. S., Ohio State University, — Hydraulics.
Davis, Marguerite — *Racine.*
B. S., University of California, — Chemistry.
DeBra, Walter Brown — *Cameron, Mo.*
B. S., Cornell University, — Physics.
Deiman, Harry — *Madison.*
B. A., Yankton College, — Sociology.
Dengler, Rose — *Madison.*
B. L., University of Wisconsin, — German.
Dietrichson, Gerhard — *Menomonie.*
B. S., University of Minnesota, — Physical Chemistry.
Dodge, Florence Adele — *Windsor.*
B. A., University of Wisconsin, — Latin.
Douglass, Howard Higby — *Lansing, Mich.*
B. S., Michigan Agricultural College, — Dairy Husbandry.
Drake, Harvey Stewart — *Juneau.*
B. A., Lawrence College, — Chemistry.
Dryzer, Frank Moses — *Madison*
M. A., University of Chicago, — Mathematics.

Dubach, Ulysses Grant — *Wathena, Kansas.*
M. A., Harvard University, — Political Science.
Duffus, William McGlasham — *Madison.*
B. A., Leland Stanford University, — Political Economy.
Duke, Charles Sumner — *Madison.*
B. A., Harvard University, — Engineering.
Dunnewald, Theodore John — *Madison.*
B. S., University of Wisconsin, — Soils.
Ellingson, Emil Oscar — *Madison.*
M. A. University of Wisconsin, — Physical Chemistry.
Elston, Alexander — *Milwaukee.*
B. S., Marquette University, — Physics.
Ely, Richard S. — *Madison*
B. A., Harvard University, — Political Economy.
Elston, Josephine W. — *Milwaukee.*
B. S., Knox College, — Political Economy.
Ernst, Frederic — *Charleroi, Belgium.*
M. A., University of Wisconsin, — French.
Esch, Fred Henry — *Manitowoc*
B. A., LL. B., University of Wisconsin, — Political Economy.
Evans, Alice Catherine — *Potterville, Pa.*
M. S., University of Wisconsin, — German.
Evans, Frank Caradoe — *Camden, Maine.*
M. A., Bowdoin College, — Chemistry.
Everett, Benjamin Bryan — *Palmyra, N. C.*
B. Agr., North Carolina Agricultural and Mechanic Arts, — Soils.
Falconer, John Ironside — *Milford, N. H.*
B. S., New Hampshire State College, — Agricultural Economics.
Farrar, Victor John — *Madison.*
B. A., University of Wisconsin, — History.
Fasten, Nathan — *New York, N. Y.*
B. S., College of City of New York, — Zoology.
Faust, Charles Julius — *Madison.*
B. A., North Dakota University, — American History.
Fifield Ruth Alden — *Janesville*
M. A., University of Michigan, — English Literature.
Finner, Ewald Reinhard — *Dodge.*
B. S., University of Wisconsin, — Soil Physics.
Flint, Alfred Thomas — *Madison.*
B. A., University of Wisconsin, — Political Economy.
Flint, Edgar Martin — *Madison.*
M. A., Columbia University, — Agricultural Chemistry.
Flint, Helen — *Madison.*
B. A., University of Wisconsin, — Home Economics.
Foerster, Norman — *Madison*
B. A., Harvard University, — English.
Forbes, Cornelia Brigham — *Worcester, Mass.*
B. A., Vassar College, — Political Economy.

Fox, Leonard Peter	*Fond du Lac.*
B. A., University of Wisconsin,	American History.
Freer, Helen	*Mt. Vernon, Iowa*
B. A., Cornell College,	History.
Frost, Florence Myrtle	*Sioux Falls, S. D.*
B. A., Northwestern University,	History.
Fuller, William David	*Madison*
Ph. B., University of Wisconsin,	Education.
Fuller, William John	*Madison.*
B. A., University of South Dakota,	Structural Engineering.
Galland, Joseph Stanislaus	*Madison.*
M. A., University of Wisconsin.	Romance Languages.
Garman, Frederick	*Lexington, Ky.*
B. S., University of Kentucky,	Physical Chemistry.
Garwood, Lynn Eugene	*Madison.*
B. A., Otterbein University,	American History.
Geidel, Carl Diedrich, c p h	*Madison*
B. S., University of Wisconsin.	Chemistry.
Gerry, Eloise	*Madison*
M. A., Radcliffe College,	Botany.
Gilbert, Edward Martinius	*Blair.*
Ph. B., University of Wisconsin,	Botany.
Glascock, Hardin Roads	*Muncie, Ind.*
B. A., Ohio Wesleyan.	Zoology.
Glover, Louis Earle	*Oshkosh.*
B. S., University of Wisconsin,	Electrical Engineering.
Glyer, George Arthur	*Superior.*
B. A., Carroll College	History.
Goodenough, Aubrey Ward	*Battle Creek, Mich.*
M. A., Yale University,	Political Economy.
Graber, Laurence Frederick	*Mineral Point*
B. S. University of Wisconsin.	Agronomy.
Gray, Frank	*Madison.*
B. S., Purdue University,	Physics.
Griffin, Grace Margaret	*Madison.*
B. A., University of Wisconsin,	Physical Education.
Hagberg, John Bernard	*Superior.*
Ph. B., University of Wisconsin,	Physics.
Hall, Katharine	*Watertown.*
B. A., University of Wisconsin,	Philosophy.
Hall, Leland Boylston	*Malden, Mass.*
B. A., Harvard University,	English.
Hamilton, Maud	*Emporia, Kansas.*
B. A., Cornell University,	Ancient History.
Han, Ngan	*Chao Sien, China.*
M. S., University of Michigan,	Agriculture.
Hashimoto, Yojizaemon	*Madison.*
B. S., Kansas State College,	Dairy Husbandry.

Hawkins, Pliny Haine — *Madison.*
M. S., Montana Agricultural College, — Botany.
Hay, Earl Downing — *Madison.*
B. S., Rose Polytechnic Institute, — Engineering.
Hayden, Estelle M., — *Sun Prairie*
M. L., University of Wisconsin, — English.
H'Doubler, Margaret Newell — *Madison.*
B. A., University of Wisconsin, — Physical Education.
Hebberd, Nell — *La Crosse.*
B. A., University of Wisconsin, — Journalism.
Hedrick, Arly Luther — *Madison.*
B. A., Yale University, — Railway Engineering.
Heezen, Helen Mary — *Muscatine, Ia.*
B. A., Grinnell College, — English.
Heise, George William — *Milwaukee.*
B. S., University of Wisconsin, — Chemistry.
Helm, Harold McMurdo — *Beloit.*
B. A., Beloit College, — Anatomy.
Henderson, Martin Perry — *Clifton, Idaho.*
B. A., University of Utah, — Botany.
Herrick, Louis Rowell — *Madison.*
M. A., University of Wisconsin, — French.
Higson, Charles Roy — *Madison.*
B. S., University of Wisconsin, — Electrical Engineering.
Hill, Edith Durham — *Hamilton, O.*
B. A., Miami University, — English.
Hill, John — *Dresden, Tenn.*
M. A., Vanderbilt University, — Spanish.
Hinderaker, Theodore — *Astoria, S. D.*
B. A., St. Olaf College, — Scandinavian.
Holmes, Arthur T. — *La Crosse.*
B. A., University of Wisconsin, — Political Economy.
Holmes, Marion Helen — *Milwaukee.*
B. A., University of Wisconsin — French.
Hooley, Osborne Edward — *Milwaukee.*
B. A., University of Wisconsin, — American History.
Hopper, Walter Everett — *Madison.*
M. A., Cornell University, — Geology.
Hotchkiss, William Otis — *Madison.*
C. E., University of Wisconsin, — Geology.
Hoyt, Edith Evans — *Madison.*
M. A., University of Wisconsin, — Education.
Hoyt, Grace Elizabeth — *Madison.*
B. A., University of Wisconsin, — Latin.
Humphrey, Clarence John — *Princeton, Minn.*
B. A., University of Nebraska, — Botany.
Hyde, Grant Milnor — *Madison.*
B. A., Yale College, — English.

Isobe, Paul Fusanobu — *Madison*
M. S., University of Wisconsin, — Chemistry.
Jacobson, James Peter — *Franksville*
B. S., Beloit College, — Physics.
Jessup, Walter Edgar — *Los Angeles, Cal.*
B. A., University of Southern California, — Hydraulic Engineering.
Johnson, Aaron Guy — *Madison.*
M. S., Purdue University, — Plant Pathology.
Johnson, Elbe Herbert — *Madison.*
B. A., Olivet College, — Physics.
Johnson, Glen LeRoy — *Madison*
B. S., University of Wisconsin, — Agriculture.
Johnson, Ida Petrine — *Onalaska.*
B. A., University of Wisconsin, — German.
Johnston, A. Walfred — *Minneapolis, Minn.*
M. A., University of Minnesota — Geology.
Jones, Edward Haulting — *East Hampton, N. J.*
B. A., Lafayette College, — Zoology.
Johnson, James — *Deerfield.*
M. S., University of Wisconsin, — Horticulture.
Judd, Roy Clair — *Endeavor.*
Ph. B., University of Wisconsin, — Chemistry.
Juve, Oscar A. — *Madison*
B. A., Luther College, — Agricultural Economics.
Kalman, Lasser — *New York City.*
B. A., College of the City of New York, — Political Economy.
Karges, Rudolph Andrew — *River Falls.*
Ph. B., University of Wisconsin, — Physics.
Kawabe, Kisaburo — *Tokio, Japan.*
LL. B., Waseda University. — Political Economy.
Keats, Marion — *Milwaukee.*
B. A., University of Wisconsin, — Latin.
Keffer, Ralph — *Cottage Grove, Ind.*
B. A., Miami University, — Mathematics.
Keirn, Nellie Sutton — *Lexington, Miss.*
B. A., Industrial Institute, College of Mississippi, — Education.
Kellar, Herbert Anthony — *Peoria, Ill.*
B. A., University of Chicago, — History.
Keller, William Jacob — *Madison.*
M. A., Northwestern University, — German.
Kelley, Francis James — *Philadelphia, Pa.*
B. S. University of Pennsylvania, — Experimental Breeding.
Kelsey, Rachel Marjorie — *Baraboo.*
M. L., University of Wisconsin, — English.
Killebrew, Cincinnatus Decatur — *Newton, Ala.*
M. S., Alabama Polytechnic Institute, — Physics.
King, Willford Isbell — *Madison.*
M. A., University of Wisconsin, — Political Economy.

Kirk, John Robert Young — *Springfield, S. D.*
B. S., South Dakota State College, — Animal Husbandry.
Klauser, Eldred — *Madison.*
B. A., Williams College, — Dairy Husbandry.
Klinger, Allen Counable — *Delaware, O.*
B. A., Ohio Wesleyan University, — American History.
Knop, Dena Lucinda — *Fond du Lac.*
B. A., Ripon College, — German.
Koenig, Alfred Edward — *Madison.*
M. A., University of Wisconsin, — Physical Chemistry.
Kurata, Kosuke — *Tokio, Japan.*
Graduate, Imperial Japanese Marine College, — Mechanical Engineering.
Lacy, Henry Veere — *South Milwaukee.*
B. S., Ohio Wesleyan University, — Education.
Lauderdale, Clara Mary — *Elkhorn.*
B. A., University of Wisconsin, — History.
Leslie, Helen — *Memphis, Mo.*
B. A., Vassar College, — History.
Lewis, Harmon — *Oak Park, Ill.*
B. A., University of Wisconsin, — Geology.
Lewis, Howard Thompson — *Madison.*
M. A., University of Wisconsin, — Political Economy.
Libbey, Barnem — *Scranton, Pa.*
B. S., Princeton University, — Mathematics.
Liverance, Wallace Burt — *Lansing, Mich.*
B. S., Michigan Agricultural College, — Dairy Husbandry.
Lloyd, Orson Gunnell — *Madison.*
B. S., Utah Agricultural College, — Agricultural Economics.
Lloyd-Jones, Orren, — *Hillside.*
M. S., University of Wisconsin, — Experimental Breeding.
Long, Walter Sterritt — *Madison.*
M. A., Ohio Wesleyan University, — Chemistry.
Longenecker, Albert M., — *Paola, Kansas*
B. A., University of Kansas, — American History.
Loomis, Milton Earle — *Cleveland, Ohio.*
B. A., Western Reserve University, — Political Science.
Lora, Mariano Romero — *Havana, Cuba*
B. A., Catholic University, — Civil Engineering.
Lorenzen, Lilly Elfriede — *Madison.*
Graduate of Hohere Lehrerimenseneisar at Schleswig, Germany, — German Philology.
Lussky, George Frederic — *Ottawa, Ill.*
B. A., University of Chicago, — German.
Lynn, Eldin Verne — *Madison.*
M. A., University of Wisconsin, — Chemistry.
McCalmont, Mary Myrtle — *Tarkio, Mo*
B. S., Westminster College — Chemistry.

MacDonald, Philip Walter — *Peshtigo.*
M. A., University of Wisconsin, — Mediaeval History.
McFetridge, William Lauren — *Oshkosh.*
B. S., University of Wisconsin, — Agronomy.
McKee, Mary Rose — *Madison.*
B. A., University of Wisconsin, — Physical Education.
McShane, John James c p h — *Madison.*
M. D., Rush Medical College, — Bacteriology.
Mann, Charles August — *Madison.*
M. S., University of Wisconsin, — Chemistry.
Marken, Richard Louis — *Valders.*
B. S., University of Wisconsin — Agriculture.
Maule, Howard Wesley — *Dousman.*
B. A., Carroll College, — History.
Maxson, Mabel — *Milton Junction.*
B. A., Milton College, — English.
Mead, Warren Judson — *Madison.*
M. A., University of Wisconsin. — Geology.
Meggers, William Frederick — *Clintonville.*
B. A., Ripon College, — Physics.
Melhus, Irving E. — *Madison.*
B. S., Iowa State College, — Plant Pathology.
Meloche, Clifford Cyrille — *Madison.*
M. A., University of Wisconsin. — Inorganic Chemistry.
Merriman, Alice P. — *New York City.*
B. A., Swarthmore College, — German.
Michels, Charles Arthur — *Fargo, N. D.*
B. S., North Dakota Agricultural College, — Experimental Breeding.
Miller, Andrew Howard — *Los Angeles, Cal.*
B. A., Oxford University, — Physics.
Miller, Bert E. — *Madison.*
B. S., University of Wisconsin, — Electrical Engineering.
Miller, Paul Gerard — *Madison.*
M. A., University of Wisconsin, — Spanish.
Morrison, Frank Barron — *Madison.*
B. S. University of Wisconsin, — Agricultural Chemistry.
Morse, Warner Jackson — *Orono, Me.*
M. S., University of Vermont, — Plant Pathology.
Mueller, Hermann Carl Paul — *Milwaukee.*
B. A., University of Wisconsin, — German.
Musback, Fred Ludwig — *Madison.*
B. S., University of Wisconsin, — Soils.
Nash, Lola Grace — *San Antonio, Texas.*
B. A., University of Texas. — Sociology.
Nebel, Walter — *Madison.*
M. S., University of Wisconsin. — Chemistry.
Neidig, William Jonathan — *Madison.*
B. A., Leland Stanford Junior University, — Romance Languages.

Neville, Clara Brooks — *Oshkosh.*
B. A., University of Wisconsin, History.
Newcomer, Harry Sidney m — *Madison.*
M. A., University of Wisconsin, Mathematics.
Noble, Elsie Claire — *Monticello, Ia.*
B. A., Coe College, Latin.
Nordlie, Herman Clarence — *Deerfield.*
M. A., University of Wisconsin, History.
Norton, Mary Elizabeth wls — *Faulkton, S. D.*
B. A., Redfield, S. D., College, English.
Nyberg, Joseph Antonius — *Chicago, Ill.*
M. S., University of Chicago, Mathematics.
Odegard, Sigurd Louis — *Madison.*
B. A., University of Wisconsin, Political Economy.
Outzen, Andrew Newton — *Madison.*
B. S., University of Wisconsin, Electrical Engineering.
Owen, Gladys — *Madison.*
B. A., Smith College, Philosophy.
Owen, Ralph Woodland — *Eau Claire.*
M. A., University of Wisconsin, English.
Peabody, Marion Grace — *Madison.*
B. A., University of Wisconsin, History.
Pearsall, William Gilchrist — *McGregor, Ia.*
B. S., University of Wisconsin, Geology.
Perlman, Selig — *Madison.*
B. A., University of Wisconsin, Political Economy.
Peterson, William Harold — *Madison.*
M. A., Columbia University, Agricultural Chemistry.
Plank, Josephine — *Oconomowoc.*
B. A., University of Wisconsin, English.
Pollock, Christine Mina — *Fargo, N. D.*
B. A., Fargo College, German.
Price, Lawrence Marsden — *Madison*
M. A., Tufts College, German.
Primm, Roy Lee — *Hannibal, Mo.*
M. A., University of Missouri, Bacteriology.
Pritchard, Roberta Estelle — *Madison*
M. A., University of Wisconsin, Political Economy.
Pulling, Howard Edward — *Marshfield*
B. S., Beloit College, Botany.
Purin, Charles Maltador — *Madison*
M. A., University of Wisconsin, German Literature.
Quackenbush, Elizabeth — *Madison*
Ph. B., University of Wisconsin, History.
Quale, Susanna Josephine — *Madison*
B. A., University of Wisconsin, Journalism.
Rebman, Lana Gail — *Frederick, Ill.*
B. A., University of Illinois, Education.

Reed, Ruth Agnes — *Canandaigua, N. Y.*
B. A., Vassar College. — History.
Remund, Laura F. — *Waseca, Minn.*
B. A., University of Minnesota. — English.
Richards, Mabel Wilson — *Madison*
B. A., Emerson College. — French.
Rickman, Hugo Albert — *Racine*
B. A., University of Wisconsin. — Education.
Roads, Samuel Hardin — *Madison*
B. S., Ohio Wesleyan University. — Railroad Engineering.
Roller, Juliann Anna — *Madison*
B. A., University of Wisconsin. — German.
Roy, Basanta Koomar — *Calcutta, India*
B. A., University of Wisconsin. — Political Science.
Runzler, William Theodore — *Milwaukee*
M. A., Harvard University. — German.
Ryan, Marion Eva — *Wausau*
B. A., University of Wisconsin. — English.
Saby, Anna Gunihlla — *Baldwin*
M. A., University of Wisconsin. — Romance Languages.
Samuels, Alexander Felix — *West Salem*
B. A., University of Wisconsin. — Physics.
Sasaki, Yekizo — *Miyazaki, Japan*
B. A., Waseda, Tokio. — Journalism.
Schindler, Jessie Gertrude — *Madison*
M. A., University of Wisconsin. — English.
Schirmer, Mariele Rosalie — *Milwaukee*
M. A., University of Wisconsin. — German.
Schneider, Hyrum — *Madison*
M. A., University of Wisconsin. — Geology.
Schrenk, Otto Jacob — *Beloit*
B. S., University of Missouri. — Agriculture.
Schubring, Selma Langenhan — *Madison*
M. A., University of Wisconsin. — English.
Schuette, Henry August — *Green Bay*
B. S., University of Wisconsin. — Chemistry.
Schulte, Walter Biersach — *Madison*
Ch. E., University of Wisconsin. — Chemistry.
Shapovalou, Michael — *Dorpat, Russia*
B. A., Theological Seminarium. — Horticulture.
Sherman, James Morgan — *McLean, Va.*
B. S., North Carolina Agricultural and Mechanic Arts. — Dairy Husbandry.
Sievers, Frederick John — *Madison*
B. S., University of Wisconsin. — Soils.
Sime, Diana Lenore — *Fennimore*
Ph. B., University of Wisconsin. — English.
Simpson, Thomas Marshall — *Madison*
M. A., University of Wisconsin. — Mathematics.

Slatter, Frances — *Sun Prairie*
B. S., University of Wisconsin, — Mathematics.
Smith, Beulah Evelyn — *Ashland*
B. A., University of Wisconsin, — Sociology.
Smith, Elizabeth A. — *Covington, Ky.*
B. A., University of Cincinnati, — Zoology.
Smith, Gilbert Morgan — *Beloit*
B. S., Beloit College, — Botany.
Smith, Mark Anson — *Lebanon, N. H.*
B. A., Dartmouth College, — Political Economy.
Smith, William Fletcher — *Warrensburg, Mo.*
B. A., Harvard University, — Latin.
Souther, Mary Genevieve — *Mauston*
B. A., Lawrence College, — Latin.
Spear, Morris Edmund — *Maplewood, Mass.*
M. A., Harvard University, — English.
Speek, Peter Alexander — *Madison*
M. A., University of Wisconsin, — Political Economy.
Stark, Lewis Arthur — *Sun Prairie*
B. A., University of Wisconsin, — Hellenistic Greek.
Stecker, Hannah Dora — *New York City*
B. A., University of Cincinnati, — American History.
Steil, William Nicholas — *Madison*
Ph. B., University of Wisconsin, — Botany.
Stevenson, John Alford — *Cobden, Ill.*
B. A., Ewing College, — Education.
Stoekle, Erwin Rudolph — *Madison*
B. S., Northwestern University, — Physics.
Straight, Hazel Azubah (In absentia) — *Eau Claire*
B. A., University of Wisconsin, — History.
Straley, James Claudius — *Madison*
B. A., Kansas State Normal — History.
Strong, Earl D. — *Ottumwa, Iowa*
Ph. B., Grinnell College, — Political Economy.
Swenson, Thorborg, — *Rockford, Ill.*
B. A., University of Wisconsin, — German.
Talbot, Charles William — *Pullman, Wash.*
B. S., Washington State College, — Physiological Chemistry.
Tarrell, Arch LeRoy — *Platteville*
B. A., University of Wisconsin, — Physics.
Taylor, Eugene — *Columbus, Ind.*
M. A., DePauw University, — Mathematics.
Taylor, George Graham — *Taylorville, Ill.*
B. A., University of Illinois — Political Economy.
LL. B., John Marshall Law School.
Tennant, Herschel Vern — *Madison*
B. S., Dakota Wesleyan University, — Civil Engineering.
Titus, William Jacy — *Madison, Ind.*
B. A., Indiana University, — Civil Engineering.

Tobenkin, Joseph — *Madison*
B. A., University of Wisconsin, — German.
Trumbower, Henry R. — *Madison*
M. A., Princeton University, — Political Economy.
Truog, Emil — *Arcadia*
B. S., University of Wisconsin, — Chemistry.
Trytten, John Melvin — *Albert Lea, Minn.*
B. A., Luther College, — History.
Uglow, William Laurence — *Kingston, Ontario, Canada*
M. A., Queen's University, — Geology.
Van Dusen, Sara Heimdal — *Madison*
B. S., University of Wisconsin, — English.
Van Hise, Mary Janet — *Madison*
B. A., University of Wisconsin, — Sociology.
Vaughan, Richard English — *Woodstock, Vt.*
B. S., University of Vermont, — Plant Pathology.
Wackman, Lee D. — *Madison*
B. A., Beloit College, — Agriculture.
Wade, Thomas Henry — *Smith Sta., Ala.*
M. A., Columbia University, — English.
Walster, Harlow Leslie — *Spring Green*
B. S., University of Wisconsin, — Soils.
Ward, Herry Barnes — *Madison*
M. A., Hamilton College, — Greek and Latin.
Wegel, Raymond Lester — *Fond du Lac*
B. A., Ripon College, — Physics.
Weir, Robert Angus — *Portage*
B. A., Ripon College, — Political Economy.
Weir, Wilbert Walter — *Madison*
B. S., University of Wisconsin, — Soils.
Welch, Arnon Wallace — *Elsberry, Mo.*
B. S., Meridian Male College, — Political Science.
Wells, James Parrish — *Rochester, N. Y.*
B. S., Rochester University, — Hydraulic and Sanitary Engineering.
Wernli, Jacob Augustus — *Basel, Switzerland*
B. A., German Wallace University, — Romance Languages.
White, Earl Archibald — *Madison*
B. S., University of Illinois, — Mechanical Engineering.
White, Frank M. — *Madison*
B. S., University of Illinois — Agricultural Engineering.
Wiechers, Alma Magdalin — *Racine*
B. A., University of Wisconsin, — German.
Williams, Frank Ernest — *Madison*
B. A., University of Wisconsin, — Geology.
Wing, Herbert, Jr. — *Madison*
M. A., University of Wisconsin, — Ancient History.
Witte, Edwin Emil — *Watertown*
B. A., University of Wisconsin, — American History.

Wittwer, Herman Louis — *Madison*
B. A., University of Wisconsin, — Political Economy.
Works, George Alan — *Madison*
Ph. B., University of Wisconsin. — Agricultural Education.
Youmans, Jay Carlton — *Oshkosh*
B. A., Lawrence College — Political Economy.
Young, Charles Edmund — *Beloit*
M. A., University of Wisconsin, — French.

—377

UNDERGRADUATES

COLLEGE OF LETTERS AND SCIENCE

Seniors

Aberg, William John P. l — *Shell Lake*
Albers, Edgar Harvey — *Thiensville*
Allyn, Josephine t c — *Madison*
Anderson, Alice Therese t c — *Abbotsford*
Anderson, Alvin l t c — *Windsor*
Anderson, Marion Suzanne t c — *Milwaukee*
Anderson, Ross W. — *Shenandoah, Ia.*
Antes, Madeline Elizabeth t c — *Evansville*
Anthony, Marie Alexia t c — *Milwaukee*
Arnold, Schuyler — *Barnard, N. Y.*
Arnsdorf, Henry Gustav — *Eau Claire*
Austin, Edwin Charles — *Wilmette, Ill.*
Axford, Richard H. Norman t c — *Castlewood, S. D.*
Bagley, Lorna Doone t c — *Madison*
Ballard, Roger Kingsley — *Indianapolis, Ind.*
Barrett, Maude Truscott t c — *Galena, Ill.*
Batz, Margaret Carmen t c — *Sun Prairie*
Bedford, Edgar William m — *Sheboygan*
Beidleman, Elisha Biggs t c — *South Milwaukee*
Bettinger, Beulah Elizabeth t c — *Milwaukee*
Bilkey, Henry Edward — *Dodgeville*
Blackburn, Ralph — *Elgin, Ill.*
Blanchard, Pearl Ethel t c — *Colby*
Blood, Laura Lillian t c — *Kenosha*
Blust, Harry John t c — *Sheboygan Falls*
Blythe, Stuart Oakes — *Washington, D. C.*
Boardman, Robert Paige — *Oshkosh*
Boott, Ella Haden t c — *Milton Junction*
Boulware, Judson Powell m — *Eminence, Ky.*

Bowen, Robert Linde m	*Oshkosh*
Boyer, Mary Elma t c	*Ft. Dodge, Ia.*
Boyle, Margaret	*Madison*
Bradshaw, Ethel Belle	*Rockford, Ill.*
Breck, Katharine Maria t c	*Milwaukee*
Breen, Helen Marie t c	*Kenwood Park, Ia.*
Breitkreutz, Elsa Helen t c	*Wausau*
Brereton, Ruth Virginia t c	*Madison*
Brown, Helen Mariette t c	*Chippewa Falls*
Browne, Fannie Arnetta t c	*Madison*
Browne, Mary Abigaile t c	*Madison*
Brundage, Phoebe Farnum t c	*Somanauk, Ill.*
Buhlig, Alma Emma t c	*Chicago, Ill.*
Bunta, Emil m	*Milwaukee*
Burke, Elsie Margaret	*Madison*
Burke, Nellie Ellen t c	*Monroe*
Buss, Flora Emma t c	*Milwaukee*
Carson, Harriet Mildred t c	*Madison*
Case, Gaylord James	*Oshkosh*
Cavanaugh, Leo David t c	*Hartford*
Chamberlain, Marie t c	*Phillips*
Chandler, Horace Gilmore	*Ottumwa, Ia.*
Clemens, Albert Harrison l	*Cuba City*
Cleveland, Clarence Rugg	*Rockford, Ill*
Coe, Laurence Smith l	*Barron*
Coerper, Roland Frederick	*Hartford*
Colignon, Constant Moreaux m	*Sturgeon Bay*
Connor, Helen Melissa t c	*Marshfield*
Cook, Lillian Elizabeth wls	*Park Falls*
Cotton, Ruth t c	*Eau Claire*
Crane, Winifred Lucy t c	*Kalispell, Mont.*
Crawford, Willard Goldsworthy	*Mineral Point*
Crosby, Florence Armstrong t c	*Rhinelander*
Cunningham, Roger George l	*Janesville*
Currie, Constance Mary	*Superior*
Dahl, Alice Idell t c	*Madison*
Daley, Frank Aloysius l	*Madison*
Davis, Agnes Hopkins t c	*Madison*
Davis, Florence Hume wls	*Freeport, N. Y.*
Davis, Irwin Grant m	*Arcadia*
Davis, James E.	*Barneveld*
Deming, Marian Hazel	*Hammond, Ind.*
Deming, Wayne Edgar l	*Marshfield*
Dino, Nicholas l	*Madison*
Dunn, Robert Hiram	*Madison*
Durst, Letha Alice t c	*Monroe*
Eastman, Marjorie Mead t c	*Plymouth*
Ebert, Royal Benjamin t c	*Baraboo*

Eckhardt, George Harold l	*Viroqua*
Edwards, Henry Patrick l	*Dallas, Texas*
Edwards, Merwin Guy	*Ashland*
Ellsworth, Sarah Frances t c	*Madison*
Emery, Hazel t c	*Madison*
Evans, Emma Adelaide t c	*Evansville*
Evans, Russell Argyle t c	*Alma*
Evans, Sara Ellen t c	*Stoughton*
Farnham, Willard Edward	*Wichita, Kansas.*
Farquhar. Alice Milne wls	*Chicago, Ill.*
Ferrar, Kathleen	*Madison*
Feuerhak, Martin George	*La Crosse*
Finner, Fred Frank t c	*Dodge*
Flower, Dorothy wls	*Madison*
Foerster, Henry Robert m	*Milwaukee*
Foley, Mae Ellen t c	*Manson, Ia.*
Ford, Stella Eudora	*Madison*
Foster, Fayette Laverne	*Fall River*
Foulkes, Marie Nuzum t c	*Merrimac*
Foxwell, Daniel Donato	*Racine*
Francis, Harry Dalton	*Beloit*
Frawley, Honora Margaret t c	*Eau Claire*
Friedrich, Alexander Ernest	*Kendall*
Froehlich, Arno August Carl t c	*Sheboygan*
Garling, Elsie t c	*Mayville*
Geisse, Ruby Antoinette t c	*Madison*
George, Emily Cornelia t c	*Racine*
George, Leo Byron l	*Madison*
George, Mabel Hamilton t c	*Shullsburg*
Gillen, Edna Florian t c	*Racine*
Gillet, Majorie Burnton t c	*Madison*
Graff, Einar Hagemann	*Madison*
Graham, Mabel Blanche t c	*Red Wing, Minn.*
Grannis, Irving Van Vliet m	*Menomonie*
Gratiot, Mary Anne	*Shullsburg*
Gratz, Mabel Maud t c	*Madison*
Graves, Helen Dorothy t c	*River Forest, Ill.*
Greiner, Carabelle	*Terre Haute, Ind.*
Groom, Samuel Burton	*Milwaukee*
Gross, Selma t c	*Merrimac*
Habermann, Beatrice Estella t c	*Lodi*
Habermann, Eugenia Blanche t c	*Lodi*
Haessler, Clara Louise t c	*Milwaukee*
Halbert, Blanche Lodema	*Augusta*
Hall, Mattie Edith t c	*Viroqua*
Hall, Raymond Gilbert t c	*Milwaukee*
Hallam, Clark	*Sioux City, Ia.*
Hanan, Florence Louise t c	*Oregon*

Hanson, Otto Ludwig m	*Chippewa Falls*
Harris, Katherine Genevieve t c	*Chippewa Falls*
Hartley, Marion Belle	*Oshkosh*
Hartwig, Douglas Ferdinand m	*Watertown*
Haukohl, Robert Gustav	*Milwaukee*
Hayden, Gladys Langton t c	*Milwaukee*
Hayes, Frank Dennis	*Janesville*
Hecht, Frank Abner Jr.	*Madison*
Heilman, Raymond Julius l	*Oconomowoc*
Heitkamp, George William	*Cuba*
Henderson, Georgiana Dorothy t c	*West Allis*
Hinn, Anna Marie t c	*Fennimore*
Hints, Richard Francis	*Lodi*
Ho, Kim-Tong	*Honolulu, Hawaii*
Hoesley, Frieda Agatha t c	*Monroe*
Hogan, Dana Joseph	*Fond du Lac*
Hollingsworth, Laura Anne t c	*Dubuque, Ia*
Hook, Maude Persis t c	*South Milwaukee*
Hooper, Lorna t c	*Oshkosh*
Hopkins, Ada t c	*Madison*
Horne, Ella Margaret t c	*La Crosse*
Horner, Chester William	*El Paso, Ill.*
Howard, Edna	*Denver, Colo.*
Howlett, Irving Richard	*Madison*
Hoyer, Theodore Robert	*Madison*
Hoyt, Amy Glorane t c	*Augusta*
Hubbard, Joseph Bradley	*Madison*
Hubbell, Affa t c	*Madison*
Huegel, Fred Julius	*Madison*
Hull, Phoebe Gertrude t c	*Baraboo*
Hunt, Myrtle Mae t c	*Madison*
Hutson, Thomas Ralph	*Madison*
Hyatt, Chauncey Adelbert	*Sheboygan*
Imhoff, Wallace Garretson	*Pittsburg, Pa.*
Jackman, Margaret Jane t c	*Madison*
Jenner, George Herbert Austin l	*Madison*
Jenson, Clara Martina t c	*Edgerton*
Johnson, Agnes Beatrice t c	*Richland Center*
Johnson, Aline Victoria t c	*Geneseo, Ill.*
Johnson, Katherine Diantha t c	*Stoughton*
Johnson, Laura Butler mu, t c	*Madison*
Johnson, Palmer Oliver t c	*Lakefield, Minn.*
Johnson, Russell Martin m	*Madison*
Jones, Margery Vining t c	*Delafield*
Jones, Merritt LaCount m	*Wausau*
Jones, Montfort	*Cambria*
Josiassen, John Simon	*Madison*
Josten, Harriette Margaret t c	*La Crosse*

Jungkunz, Ilma De Murska t c	*Freeport, Ill.*
Kirch, Henrietta Ann t c	*Des Moines, Iowa*
Kirch, Iza Barbara	*Madison*
Kitchell, Bertha	*Topeka, Kansas*
Kleinpell, Louise Carolyn t c	*Elkader, Ia.*
Klug, Clara Maria Elizabeth t c	*Arcadia*
Kneeland, Martin Dwelle t c	*Northwood, Ia.*
Knox, Flora Roberts t c	*Milwaukee*
Knudson, Jeanette Louise t c	*Madison*
Koch, Oswald Theodore	*Osceola*
Kolinsky, Pete Charles l	*Racine*
König, Selma Sophie t c	*Madison*
Kragh, Stella Marguerite t c	*Madison*
Kremer, Eugene Edward	*Fond du Lac*
Kunz, Fritz	*Freeport, Ill.*
Lake, Earl Garon	*Madison*
Leach, Olive Marion t c	*Sioux Falls, S. D.*
Lenroot, Katherine Frederica	*Superior*
Levitan, Abe Mortimer	*Madison*
Levitan, Esther t c	*Madison*
Li, Soong-dau	*Shanghai, China*
Ling, Pyan	*Canton, China*
Little, William Douglas	*Geneva, Ill.*
Loeffler, Oscar Frederick	*Milwaukee*
Loew, Jessie Daisy Ida t c	*Colgate*
Longfield, Sara Regina t c	*Madison*
Luethe, Walter Jacob	*Norwalk*
Lutz, Gertrude Harriett t c	*Michigan City, Ind.*
McCordic, Almer Sheridan t c	*Zion City, Ill.*
McGee, Brutus Albert	*Madison*
McGrath, Charles Blair	*Eau Claire*
McKinley, Harriet Belle	*St. Ansgar, Ia.*
McKinney, Marion Emma t c	*Saginaw, Mich.*
McLaughlin, Mabel Catherine	*Milwaukee*
Mangan, Julia Maria	*Bay City*
Manley, Irene Conway t c	*Beaver Dam*
Mann, Walter Louis l	*Lake Benton, Minn.*
Marks, Marie Anna t c	*Dodgeville*
Mauer, Florence Elizabeth t c	*Madison*
Meissner, Harry Victor l	*Milwaukee*
Mercer, Joseph David	*Evanston, Ill.*
Meyer, Mabel Matilda t c	*Kirkland, Ill*
Miller, Glenn Elmer l	*Guthrie Center, Ia.*
Miller, Grace Eugenia t c	*Juda*
Minch, Frances Eva t c	*Madison*
Minster, Charlotte Mae t c	*South Milwaukee*
Mitchell, Morris Bockee	*Madison*
Moerke, Rosalind Emilie t c	*Madison*

Moore, Edith t c	*Merrillan*
Moore, Raymond Judson	*Madison*
Moore, Sidney John	*Milwaukee*
Morley, Laura Hazel t c	*Baraboo*
Morrell, Gladys Leone t c	*Escanaba, Mich*
Mott, Anna Signa t c	*Decorah, Ia.*
Mueller, Corinne Charlotte t c	*Milwaukee*
Mueller, Therese Catherine t c	*Sauk City*
Munro, Dana Gardner	*Madison*
Murphy, Clarence Francis l	*Elkader, Ia.*
Murphy, Margaret Frances t c	*Clinton, Ia.*
Murray, Frances Josephine t c	*Madison*
Nash, Leo	*Grand Rapids*
Neitzel, Anna Louise t c	*Watertown*
Nelson, Casper Irving	*Madison*
Neprud, Carl Alwin	*La Crosse*
Nickerson, Pearl Irene t c	*Madison*
Nickson, Delbert Harry m	*Platteville*
Notz, Helen Eda t c	*Milwaukee*
Noyes, Arthur Herbert l t c	*Baraboo*
Nuzum, John Weston m	*Janesville*
Oliver, Jay Charles	*Morrison, Ill.*
Onsrud, Minnie Christine t c	*Stoughton*
Packard, Edna t c	*Basco*
Parent, Mary t c	*Madison*
Paris, Margaret Irma t c	*Prairie du Chein*
Patterson, Elizabeth t c	*Baraboo*
Peacock, Leila Irene t c	*Oconomowoc*
Perry, Clara Harmon t c	*Milwaukee*
Perry, Elizabeth Dorothy t c	*Davenport, Ia.*
Phelps, Harold Frederick	*Minto, N. D.*
Pickering, Harold Gregg	*Superior*
Pierce, Maurice Campbell	*Madison*
Pierson, Merle t c	*Milwaukee*
Piper, Raymond Frank	*Madison*
Platten, Helen Irene t c	*Green Bay*
Pollard, Hope Millicent t c	*Mendota, Ill.*
Pollock, Charles Martin	*Fargo, N. D.*
Pollock, Lorine Martha	*Fargo, N. D.*
Pope, Minnie Henrietta t c	*Madison*
Porter, Anna t c	*Wauwatosa*
Porter, Philip Howe l	*Madison*
Potts, Marian Edith wls	*Appleton*
Pullen, Jones Spencer l	*Evansville*
Raetzmann, Hilda Marie t c	*Reedsburg*
Ramsdell, Bailey Edwin l t c	*Wausau*
Rau, Erwin Frank t c	*Baraboo*
Rawson, Hazel Arvilla t c	*Portage*

Raymond, Mary Mercer	*Aurora, Ill.*
Reed, Nathan William	*Rosendale*
Rehfuss, Isidor Louis	*La Crosse*
Rich, Mabel Irene	*Monticello, Minn.*
Richards, Robert Baker	*Racine*
Richardson, Emma Hanks t c	*Janesville*
Richmond, Ada Maud t c	*La Crosse*
Richmond, Adam l	*Madison*
Ridgway, Grace Gladys mu, t c	*Madison*
Rietz, Walter Hermann m	*Manitowoc*
Ringling, Alice Josephine t c	*Baraboo*
Rissmann, Henriette Louise t c	*Bartlesville, Okla*
Roberts, Friday George	*Fox Lake*
Roberts, Hazel Isabelle t c	*Milwaukee*
Rosenkranz, Elizabeth Ruth	*Oconomowoc*
Rossbach, Clement Astor	*Milwaukee*
Rowley, Alden Bruce	*Madison*
Runals, Irene Margaret t c	*Ripon*
Runzler, Arthur Charles t c	*Milwaukee*
Sanders, Eura Christie t c	*La Crosse*
Sanford, Edith May t c	*Savona, N. Y.*
Sansum, William David m	*Baraboo*
Sayle, Florence Mildred t c	*Milwaukee*
Schernecker, Eleanor Frances t c	*Sun Prairie*
Schmidt, Otto Henry t c	*Bloomer*
Schroeder, Ernest Leonard m	*Shawano*
Schuldt, Clarence M. m	*Platteville*
Schultz, Augusta Friederika	*Westfield, N. Y.*
Schwartz, Nellie Elizabeth t c	*East Troy*
Scofield, Helen Cole t c	*La Crosse*
Scully, Frank Joseph m	*Bottineau, N. D.*
Sell, Marguerite	*Springfield, Ill.*
Sexton, Marie Jeanette t c	*Marshfield*
Shapiro, Lillie t c	*Medford*
Shea, Catherine Mary t c	*Ashland*
Shehan, Dorothea Frances	*Superior*
Shoop, Bonnie Louise t c	*Streator, Ill.*
Simpson, Olive Mary t c	*Shullsburg*
Skinner, Margaret Miron t	*Madison*
Smith, Grace Irene t c	*Madison*
Snell, Florence Wells t c	*Madison*
Snyder, Clarendon Sweet t c	*Monroe Center, Ill.*
Soutar, Richard Gray, Jr.	*Lake Geneva*
Stafford, William Reuben	*Oskaloosa, Ia.*
Starks, Irene Valanche t c	*Madison*
Starr, William	*Eau Claire*
Steele, Martha, Maria t c	*Cottage Grove*
Stevens, Elbert Crandall t c	*Oak Park, Ill.*

Stevens, Mabelle Erma t c	*Janesville*
Story, Harold Willis	*Milwaukee*
Strong, Marion Ruth t c	*Lake Mills*
Stryker, Mary Seymour	*Joliet, Ill.*
Sullivan, William Kirk	*Oak Park, Ill.*
Sutherland, Gladys t c	*Madison*
Sutherland, Laura Edith t c	*Eau Claire*
Suttle, Lois t c	*Viroqua*
Swerig, Mabel Beatrice t c	*Madison*
Swetting, Florence t c	*Berlin*
Talbot, Minnie Julia t c	*Berlin*
Taylor, Archibald Roger	*Barron*
Thomson, Harold Page l	*Madison*
Todd, Louise Frances	*Dixon, Ill.*
Tomhagen, Edith Sommer	*Chicago, Ill.*
Townsend, DeWayne m	*Oconomowoc*
Tredinnick, Clarence Edwin	*Linden*
Trowbridge, Isadore Maurine t c	*Hayward*
Tschudy, Marianne Helen t c	*Monroe*
Tsu, Wen-Shion	*Soochow, China*
Tufts, Helen Angeline	*Sioux Falls, S. D.*
Vaas, Marie Herfurth t c	*Madison*
VanBlarcom, Maude Estelle t c	*Fond du Lac*
Viles, Edith Josephine	*Chippewa Falls*
Vitz, Frank Edward t c	*Plymouth*
Wahl, Natalie Rice	*Madison*
Wakefield, Lois t c	*Milwaukee*
Wambold, Grace Isabelle t c	*Milwaukee*
Washington, Lawrence	*Chicago, Ill.*
Weigen, Anders Johann m	*Madison*
Westphal, William Carl t c	*Mayville*
Witaker, May Bell t c	*Kenosha*
Wieboldt, Elmer Frederick	*Chicago, Ill.*
Williams, Arthur Joseph m	*Waukesha*
Williamson, Robert Crosier t c	*Cleveland, O.*
Winslow, Edith Agnes t c	*Madison*
Wuesthoff, William Walter t c	*Milwaukee*
Zee, Treusinn Z.	*Shanghai, China*

—355

COURSE IN COMMERCE

Babler, William Emil	*Monticello*
Bailey, George Davis	*Madison*
Bell, Rae Floyd	*Madison*
Bennett, George Edward	*Lake Geneva*
Biersach, Hugo	*Milwaukee*
Boguslawsky, Marc	*Milwaukee*
Bonesteel, Verne Clinton	*Huron, S. D.*

Braasch, William Karl	*Sheboygan*
Bunin, Nohun Bernard l	*Stevens Point*
Carpenter, Floyd Goodrich	*Madison*
Christians, George Frederick	*Johnson Creek*
Day, LeRoy Irving	*Lake Geneva*
Diekelmann, Reinhold Julius	*Horicon*
Frey, Frank Armin	*Milwaukee*
Glaeser, Martin Gustave	*Sheboygan*
Greenwood, Albert Ernest	*Johnson Creek*
Grell, Walter Henry	*Johnson Creek*
Hobart, Arthur Thomas	*Batavia, Ill.*
Hoffmann, Carl Richard	*Waupaca*
Howard, Claude Earl	*Madison*
Igleheart, Austin Smith	*Evansville, Ind.*
Johnson, Alvin Oscar	*Woodville*
Johnson, Carl John	*Madison, S. D.*
Johnson, Margaret t c	*Madison*
Joslin, Richard Raymond	*Mauston*
Kauffman, Jacob Lorelle	*Madison*
Kiekhoefer, Benjamin Alvin	*Madison*
Kinsman, Thomas LeRoy	*Platteville*
Knorr, Lynn Elmer	*Granton*
Kuechle, Benno Ernest	*Sheboygan*
Lilly, Lewis	*Madison*
Mapel, Dexter Round	*Milwaukee*
Morgan, Thomas Henry	*Madison*
Neprud, Selmer	*Westby*
Oetking, Frank George	*Sheboygan*
Paulsen, August Herman	*Chilton*
Pullen, Paul Pike	*Evansville*
Reyer, Edward Gerald	*Colby*
Ruedebusch, Hans Henry	*Mayville*
Schroeder, Walter Henry	*Manitowoc*
Skinner, Roger Allen	*Brodhead*
Stoppenbach, Frank Emil	*Jefferson*
Torbet, Albert William	*Manistique, Mich.*
Tye, Frank Edward	*West Chicago, Ill.*
Whyte, Malcom Kenneth	*Watertown*

—45

Course for Normal School Graduates

Aldrich, Mildred Isabelle	*Milwaukee*
Anderson, Charles Joseph, t c	*Madison*
Blood, Emma Belle t c	*Oshkosh*
Bunker, Maude Ethel t c	*Lodi*
Clark, John S. t c	*Portage*
Doyle, James Harold	*Madison*
Haass, Lily Katherine t	*Pewaukee*

Harvey, Minnie	*Platteville*
Hedges, Clair Frank	*Neenah*
Hudson, Nellie Grace t c	*Boscobel*
Jackson, Elizabeth Brigham t c	*Stoughton*
Krause, Linnie t c	*Ridgeland*
Krienke, Edmund Otto t c	*Stevens Point*
La Rue, Edith Myrtle t c	*Wilton*
Leister, Henry Clinton t c	*Menomonee Falls*
Loomis, Helen Verne t c	*Kilbourn*
Lundberg, Elva Axelena t c	*DeKalb, Ill.*
Lusk, Grace Alberta t c	*Milwaukee*
McLain, Ernest Seth t c	*Madison*
Melville, Andrew Hutton t c	*Madison*
Phelps, Ella	*Milwaukee*
Plant, Ethel May t c	*Prentice*
Pratt, Alice Mary t c	*Beaver Dam*
Riley, John William t c	*Madison*
Roberts, Mabel t c	*Belleville*
Sabean, Izzetta Lee t c	*Hayward*
Schoepp, Elizabeth Dora t c	*Alma*
Shillander, Arthur Alexis t c	*Minneapolis, Minn.*
Slagg, William Edgar t c	*Albion*
Torgerson, Oscar t c	*Ontario*
Wallin, Zenas Beach	*Madison*

—31

Course in Chemistry

Ballance, Nevius Van Dyke	*Peoria, Ill.*
Barmeier, Floyd Everett	*Alberquerque, N. M.*
Blair, Walter Ellsworth	*Winona, Minn.*
Cathcart, Charles William	*Madison*
Dewey, Leon Henry	*Marshall*
Dvorak, Albert Charles	*Kewaunee*
Miller, Henry George	*Cambria*
Nelson, Victor Emanuel	*Eau Claire*
Pflaum, Walter Otto	*Evansville*
Riley, Donald Harrison Barnett	*Evanston, Ill.*
Roehling, Otto Carl	*Milwaukee*
Schunck, Fleetwood Edward	*Menomonee Falls*
Seeman, Frank John	*Kewaunee*
Sliwinski, Albert Adolph	*Oconomowoc*
Willaman, John James	*Rockford Ill.*
Witherell, Archie Lee	*Janesville*
Wollin, Andrew Albert	*Oconomowoc*

—17

Juniors

Abaly, Winnifred t c	*Madison*
Adam, Margaret	*Madison*
Ahrens, Hazel Campbell	*Milwaukee*

Albert, Charlotte t c	*Milwaukee*
Alton, Robert Leslie	*Winnetka, Ill.*
Anderson, Anna Marie t c	*Muncie, Ind.*
Anderson, Fred	*Dresser Junction*
Anderson, Margaret t c	*Eau Claire*
Arnold, Leah t c	*Sturgeon Bay*
Baldauf, Anthony Edward t c	*Eden*
Bandelin, Meta Christine t c	*Milwaukee*
Barker, Harold Henry	*Sparta*
Barrows, Walter Almer	*Cleveland, O.*
de La Barthe, Jeanne Savoie t c	*St. Paul, Minn.*
Bartmann, Selma Henrietta t c	*Marshfield*
Baskerville, Grace Dilla t c	*Madison*
Bauman, Walter John t c	*Monroe*
Baxter, Albert Rodney	*Brodhead*
Beath, Sterling Stanley	*Evansville*
Bechtel, Anita Else t c	*Madison*
Becker, Herbert William	*Chicago, Ill.*
Betz, Neven Ottillia	*Fairmont, Minn.*
Black, Samuel Bruce	*Ft. Atkinson*
Bonar, Jessie t c	*Streator, Ill.*
Bonino, Mary Cecelia t c	*Hurley*
Bourbeau, Elmore Alfred t c	*Brooklyn*
Boutin, Francis Charles	*Bayfield*
Bowman, Aleda May	*Sterling, Ill.*
Bredesen, Inga Martha	*Deerfield*
Bright, George Noyes	*Minneapolis, Minn.*
Brightman, Herbert Wendell	*Wausaukee*
Brookins, Medora Clarke	*Milwaukee*
Brown, Damon Alonzo m	*Spring Green*
Brown, Harlow Blair	*Madison*
Brown, Harry Gilbert	*Madison*
Buech, William Frederick	*Milwaukee*
Buell, Pauline Merry t c	*Madison*
Bundy, Harry Eugene m	*Milwaukee*
Bundy, Nell Reubena t c	*Eau Claire*
Burke, Margery Eleanor	*Milwaukee*
Buscheck, Alfred Joseph t c	*Manitowoc*
Bushfield, Anne Mary	*Miller, S. D.*
Bussell, Nellie Eileen	*Grand Rapids, Mich.*
Byrne, Margaret Jane t c	*Madison*
Canright, Blanche Ione	*Wauwatosa*
Cantril, Edna Edith t c	*Denver, Colo.*
Carey, Kathleen Comerford t c	*Hamilton, O.*
Carey, William Herbert	*Newtonville, Mass.*
Cartier, Morgan Edward	*Ludington, Mich.*
Cary, Harold Per Lee	*Madison*
Casey, Cyrus Ambrose t c	*Watertown*

Chambers, Charles Carroll	*Madison*
Chapman, Hazel Hortense	*Oshkosh*
Chesick, Henry Louis	*Milwaukee*
Chevalier, John Walter	*Clintonville*
Christie, George West	*Milwaukee*
Chu, Chin	*Wusih, China*
Chu, Chio Ching	*Wusih, China*
Clausen, Florence Rosalie t c	*Washburn*
Clayton, Gertrude Samantha t c	*Monroe*
Cluley, John Bowie	*Rosebush, Mich.*
Coapman, Lillian Emily t c	*Kilbourn*
Cochems, Stanley Carl	*Sturgeon Bay*
Coerper, Florence Maud	*Hartford*
Cole, Anna Lee t c	*Postville, Ia.*
Collins, Irene Margaret t c	*Madison*
Collins, Ruth Elizabeth t c	*Davenport, Ia*
Colton, Mabel Adella t c	*Sheboygan*
Conard, Harold Mead	*Oak Park, Ill.*
Conaway, Ross Kelly	*Warren, Pa.*
Connor, Donald Witten	*Marshfield*
Conrad, Agnes	*Madison*
Cook, Mary A.	*Somerset, Pa.*
Cooper, Harold L. t c	*Milwaukee*
Corry, Bernadette t c	*Marinette*
Cott, William Rainsford	*Shell Lake*
Coubal, Laudimire Joseph t c	*Manitowoc*
Cox, Fannie Edith t c	*Madison*
Crawford, John Jennings	*Hazel Green*
Crile, Dennis Rider Wood m	*Roswell, N. M.*
Croll, Eulalia Hattie t c	*Manitowoc*
Crowley, Jennie Gertrude t c	*Madison*
Curtis, Emory Blake	*Davenport, Ia.*
Dallwig, Lydia Irma t c	*Milwaukee*
Danielson, Hilda Josephine t c	*Madison*
Davies, John Pugh	*Racine*
Davis, Homer Allan	*La Crosse*
Deming, Helen W. t c	*Neillsville*
Denis, Alphonse Derbigny, Jr.	*Madison*
Dickerson, Agnes Woodworth w ls	*Helena, Mont.*
Dodd, Florence Elizabeth t c	*Ashland*
Dostal, Bernard Francis t c	*Milwaukee*
Dreutzer, Genevieve t c	*Sturgeon Bay*
Duffy, Lina Naomi t c	*Fond du Lac*
Dutton, Frederick Gary m	*Green Bay*
Dyar, Edna Gerrish m	*Madison*
Eagan, Joseph Bernard t c	*Avoca*
Eberle, Margaret Olivia t c	*Watertown*
Eckstein, John William m	*Madison*

Edwards, Frederick Trevenen	*Milwaukee*
Edwards, Nina Margaret	*Oshkosh*
Eldred, Frank Claude	*Berlin*
Ellis, Charles William	*Bryan, O.*
Ellman, Frances Catherine t c	*Madison*
Ely, Dorothy Belle wls	*Madison*
Emmel, Lilian May	*Madison*
Erickson, Clarence	*Stoughton*
Etsell, Irma	*Bayfield*
Etter, Arthur Edward t c	*Monroe*
Ewing, Ruth Dorothy	*River Falls*
Fagerland, Johan Lewis	*Stoughton*
Fauerbach, Angelica Anne t c	*Madison*
Faville, Harriet Elizabeth t c	*Lake Mills*
Fay, Thomas Hayes	*Cleveland, O.*
Feuling, Ellen Marie	*Madison*
Ficklin, Henry Stone	*Marshfield*
Fish, Harriette Hilton	*Milwaukee*
Fisk, Earl Ellsworth	*Green Bay*
Flagler, Lawrence Allen	*Eau Claire*
Fligelman, Belle	*Helena, Mont.*
Flower, Marie Rosamond t c	*Arlington, Ia.*
Foley, Kate Agnes t c	*Manson, Ia.*
Ford, Mary Estelle	*Madison*
Foster, Glen Reid	*Clarinda, Ia.*
Fox, W. Melvin	*Mt. Pleasant, Mich.*
Franzen, Ella Catherine	*St. Paul, Minn.*
Frear, Marguerite May	*Madison*
Freund, Carl m	*Belvidere, Ill.*
Frost, Edna Hayes	*Almond*
Gates, Neva Florence	*Ft. Dodge, Ia.*
Gefall, John Eugene	*Madison*
Gesell, Carl Franklin	*Tomahawk*
Gilbert, Charles Sherwood	*Burlington, Ia.*
Gill, Gladys	*Marengo, Ill.*
Gilman, Laura Leonard	*Madison*
Greenough, Francis Xavier t c	*Madison*
Griffith, George Perry	*Chicago, Ill.*
Groff, Eleanore Marie t c	*Winona, Minn.*
Gunderson, Nordahl Osmond m	*Stoughton*
Haessler, Herbert Ferdinand	*Milwaukee*
Haley, Camilla Myrtle	*Madison*
Hall, Agnes Mary	*Elgin, Ill.*
Hall, Alice Kassie t c	*Chicago, Ill.*
Hanchett, Russell Churchill	*Madison*
Harlin, Wilbur Albert	*South Bend, Ind*
Harris, Edna Mae t c	*Kilbourn*
Hartzheim, Lawrence John t c	*Juneau*

Havenor, Reslo Sheridan t c	*Belvidere, Ill.*
Heidner, Edith Butzke t c	*West Bend*
Helland, Randolph Olaf	*Mt. Horeb*
Hendrickson, Manville Fritzoff	*Portland, Ore.*
Herren, Walter	*Oswego, Ill.*
Hershey, Catherine Elizabeth	*Hershey, Pa.*
Hettinger, Grace Winifred t c	*Portage*
Hibbard, Ralph Rollins	*Wauwatosa*
Hickman, John Samuel m	*Madison*
Hill, Beulah Elaine t c	*Hamburg, Ia.*
Hillesheim, George Reinhard	*Chicago, Ill.*
Hinckley, Marguerite Josetta t c	*Stevens Point*
Hindes, Edward Lemuel t c	*Lodi*
Hinman, George Wheeler, Jr.	*Winnetka, Ill.*
Hoag, Frank Victor	*LaGrange, Ill.*
Holcombe, Helen Lucile t c	*Milwaukee*
Holman, Evalyn Constance t c	*Deerfield*
Homberger, Lynda Bertha t c	*Sauk City*
Hopkins, Mary Marguerite	*Madison*
Hornaday, Walter Charles	*Austin, Texas*
Horner, Herbert Frank	*Finley, N. D.*
Hornung, Albert Harry	*New Bavaria, O.*
Hudson, Alice t c	*Wausau*
Hutchison, Anne Phillips t c	*Mineral Point*
Irvine, Perry Dalber	*West DePere*
Jackman, Ellen Reis	*Chicago, Ill.*
James, Sadie t c	*Wales*
Janisch, Harold Peter	*Waterloo*
Jeffrey, Stella Marie t c	*Monroe*
Jennings, Rhea Mabel t c	*Necedah*
Jillson, Mary Esther	*Crete, Neb.*
Johnson, Aimee Louise t c	*Moline, Ill.*
Johnson, Mary Jane	*Kokomo, Ind.*
Johnson, Nathan Ritchey	*Milwaukee*
Jones, Ella Bessie t c	*Oshkosh*
Jones, Harry Edwin t c	*West Salem*
Jordan, Claudia Blanche	*Lancaster*
Kazda, Adolph Henry t c	*Manitowoc*
Kent, Fay Marie t c	*Helena, Mont.*
Kessler, Alvin Herman	*Madison*
Ketcham, Edna Murray	*Madison*
Kieckhefer, Anna Elizabeth t c	*Milwaukee*
Kieselbach, Clara Ottilie t c	*Mendota, Ill.*
Kilmer, Eva Marie t c	*Portage*
King, Annie Elizabeth t c	*DeKalb, Ill.*
King, Esther Josephine t c	*Waterloo*
Kliefoth, Alfred Will	*Madison*
Koch, Vincent William m	*Janesville*

Koehsel, Minnie Clara t c	*Madison*
Kohl, Edwin Phillips	*Marshfield*
Kohler, Bert M.	*Chicago, Ill.*
Kolls, Alfred Conrad m	*La Crosse*
Kraus, Raymond John	*Marshfield*
Kruger, Harry Charles	*Rhinelander*
Kuhnen, Arthur Nicholas	*Chicago, Ill.*
Kurz, Minnie Georgia t c	*Milwaukee*
LaCombe, Ina Gertrude t c	*Green Bay*
Lake, Bessie May t c	*Brodhead*
Lampert, Harold Milton	*Madison*
Landsberg, Gilbert Lawrence	*Paris, France*
Lange, Gladys Wilhelmina	*Eau Claire*
Langwill, Minnie Johnstone	*Madison*
Larson, Veda Belva t c	*Deerfield*
Lawler, Ethel Elizabeth t c	*Chicago, Ill.*
Leader, Katherine t c	*Superior*
Leavens, Marie Therese t c	*Milwaukee*
Lebeis, Clara Dora	*Chippewa Falls*
Legler, Rose Magdalen	*Valley Falls, Kans.*
Lewis, Marian t c	*Milwaukee*
Lewis, Paul John m	*Bloomington*
Lewis, Ritchie David	*Sun Prairie*
Lewis, Theodore Gorman	*McFarland*
Link, Frances Mary t c	*Madison*
Linwell, Delia	*Northwood, N. D.*
Lloyd-Jones, Ralph	*Hillside*
Loos, Lydia Emeline t c	*Elkhart Lake*
Lucke, Wylda Jay t c	*Madison*
Lueckenbach, Edward Jacob t c	*Marshfield*
Lukes, Helen Margaret t c	*Sioux City, Ia.*
Lund, Mildred Joyce t c	*Madison*
McBeath, Faye	*Milwaukee*
McCann, Vernie Lucile	*La Crosse*
McCormick, Jay Harry m	*Soldiers Grove*
McCoy, Leslie Layton	*Pittsville*
McGovern, Catherine Helen t c	*Cedarburg*
McGruer, Earl	*Langdon, N. D.*
McKay, John Gordon	*Eau Claire*
McKinney, Maurice Doane	*Janesville*
McMahon, Thomas Omar	*Milwaukee*
McMillen, Florence Cynthia	*Fort Atkinson*
McQuown, Norvin t c	*Madison*
Maas, Louis Herman	*Markesan*
Macdonald, Anna Catherine	*Superior*
Mahoney, Bessie t c	*Juneau*
Mailer, Katharine Margaret t c	*DePere*
Malone, Ralph Douglas	*Beaver Dam*

Mansfield, Ethel Amelia t c	*Milwaukee*
Marek, Frank Benjamin m	*Cadotte*
Martin, James Gardner	*Attica, Ind.*
Martin, Kenneth Dion t c	*Baraboo*
Martin, Marguerite Emma t c	*Madison.*
Martin, Thomas Andrew	*Madison*
Martindale, George Cumberland	*Detroit, Mich.*
Mathys, Erna Henrietta t c	*Arcadia*
Matts, Mary Ventura t c	*Verona*
Menne, Frank Raymond m	*Eden*
Menzies, Jessie, t c	*Janesville*
Merkelbach, Maria Louise mu. t c	*Madison*
Milhaupt, Vera Amalia t c	*New Holstein*
Moe, Harry Bugge m	*McFarland*
Morley, Inez Elizabeth t c	*Madison*
Morrissy, Katherine t c	*Elkhorn*
Mullon, Barbara	*Madison*
Mullon, Marjory t c	*Madison*
Murphy, George Michael	*Oconto*
Murphy, Walter Henry	*Elkhorn*
Naber, Della t c	*Mayville*
Nevin, Richard Clarence	*Racine*
Newman, Elsie Elizabeth Laura t c	*Madison*
Nicolls, Mary Mohr t c	*Wausau*
Niles, Sara Isabel t c	*LaPorte, Ind.*
Norton, Ruth Reid t c	*Elgin, Ill.*
Oates, Arthur Raymond	*Darlington*
Obata, Shigeyoshi	*Osaka, Japan*
O'Callaghan, Eleanor Marguerite t c	*Norway, Mich.*
Oistad, Elmer Nels	*Bayfield*
Olds, Minnie Malinda t c	*Albany, Ill.*
Olin, Burton Wilson	*Racine*
Olsson, Ellen Maud Wellesley t c	*Nashotah*
O'Malley, Agnes Elizabeth t c	*Madison*
Oppegard, Henry Albert	*Sacred Heart, Minn.*
Orput, Donald Turner	*Platteville*
Osborn, Esther Sarah t c	*Ashland*
Peabody, Arthur Cochrane	*Madison*
Pearce, Jane t c	*Dodgeville*
Pease, Edna Crystal t c	*Madison*
Pease, Mary Ennever	*Wauwatosa*
Pease, Spencer Adams	*Wauwatosa*
Peck, Helene Parkinson t c	*Darlington*
Pence, Nellie Ada t c	*Madison*
Pengelly, Jane M. t c	*Dodgeville*
Pennock, Edith Lillian t c	*Bloomington*
Perky, Laura Esther	*Boise, Idaho*
Peterson, Hazel Victoria t c	*Rice Lake*

Peterson, Helen Therese t c	*Soldiers Grove*
Petterson, Carl Matthew t c	*Ephraim*
Pfuderer, Helen Virginia t c	*Chicago, Ill.*
Plumb, Mary Alma t c	*Fairview, Kan.*
Pond, Ethel Pooley	*Madison*
Post, Jessie t c	*Madison*
Powell, Charles Healy t c	*Milwaukee*
Prees, Reginald Lloyd m	*Cambridge*
Pressentin, Olga Charlotte t c	*Madison*
Prince, Sarah Harriet	*Downers Grove, Ill.*
Proctor, Roy Harrison	*Madison*
Pryor, Edith Clara t c	*La Crosse*
Raaen, Aagot	*Hatton, N. D.*
Rannenberg, George Christian Louis	*Chicago, Ill.*
Ravn, Erling Oscar m	*Merrill*
Reber, Hugh Jackson	*Madison*
Reek, Alice Kaye t c	*Walworth*
Reid, Maude Dunlap t c	*Oconomowoc*
Reis, Alvin Carl	*Evansville, Ind.*
Reiser, Robert Mathew	*Madison*
Reuss, Beth Anna t c	*Sun Prairie*
Reynolds, Dannie Edward t c	*Cottage Grove*
Rice, Ruth Catherine	*Madison*
Rickert, Margaret Bernadine t c	*Milwaukee*
Ring, Avis	*Neillsville*
Robbins, George Hiram m	*Milwaukee*
Robinson, Miriam Josephine mu. t c	*Madison*
Roloff, Norma Rosetta	*Madison*
Rose, Milton Edward m	*Dubuque, Ia.*
Ross, Evelyn Townsend t c	*Madison*
Roter, Charles R.	*Parsons, Kansas*
Rudolph, Alice Dorothy t c	*Canton, S. D.*
Ruka, Emil Albert m	*Boscobel*
Ryan, Kathryn Frances t c	*Waukesha*
Ryan Mary Agnes t c	*Sun Prairie*
Samp, Edward Joseph	*Cecil*
Savage, John Henry Jr.	*Prairie du Chien*
Schell, Ruth t c	*Polo, Ill.*
Schenk, Margarete	*Milwaukee*
Schindler, Lloyd Marius	*Monroe*
Schmidt, Erwin Rudolph	*Arcadia*
Schoonover, Lynn Ira	*River Falls*
Seward, Leila Huntington	*Binghampton, N. Y.*
Sexauer, Minnie Catherine t c	*Belvidere, Ill.*
Shea, Cornelius Philip	*Madison*
Shea, Edmund Burke	*Ashland*
Sieb, Vera Lorraine	*Valparaiso, Ind.*
Sivyer, Allen Walters m	*Milwaukee*

Slichter, Sumner Huber	*Madison*
Smeaton Margaret Anne	*Madison*
Smith, Harold Elmer	*Milwaukee*
Snyder, Myrtle Elizabeth t c	*Milwaukee*
Somers, Fred Clifford	*Stevens Point*
Sosman, Merrill Clary	*Chillicothe, O.*
Spence, Helen Baker t c	*Milwaukee*
Stark, Lila t c	*Bayfield*
Stason, Edwin Blythe	*Sioux City, Ia.*
Steck, Louis George	*Colton, Cali.*
Steensland, Lohra	*Madison*
Steig, Olga May t c	*Whitehall*
Steketee, Marjorie Cornelia	*Grand Rapids, Mich.*
Stewart, John	*Aurora, Ill.*
Stewart, Walter William	*Madison*
Stocking, Milan Hausch	*Plainsville, O.*
Stokes, Nettie t c	*Waterloo*
Stone, Grace Blanche t c	*Lancaster*
Stowell, Leta Grace t c	*Madison*
Sullivan, Katharine P. Vilas	*Madison*
Swarthout, Edyth Claire t c	*La Crosse*
Sweetman, Herbert Ray	*Indianapolis, Ind.*
Taylor, Olivia Jane t c	*Necedah*
Taylor, William Amory m	*Portage*
Thielke, Almond John	*Mayville*
Thompson, Magdaline Elizabeth	*Platteville*
Thompson, Myrtle Eleanor t c	*Madison*
Thurston, Harold Kasson	*Sparta*
Tomlinson, Charles Weldon	*North Chicago, Ill*
Toomey, Ralph	*Madison*
Traeger, Ernst Lorenz	*Madison*
Trewyn, Frances Iola	*Palmyra*
Trilling, Mildred Frank	*Clarksville, Texas*
Tristram, Robert Dix	*Norwalk, Conn.*
Turner, Glenn Patterson	*Madison*
Twitchell, Edward Chauncey	*Madison*
Van Slyke, Maie Eleanor	*Madison*
Vaughan, Marjorie Olive t c	*Delavan*
Vergeront, Glen Wallace	*Madison*
Vergeront, Grace Margaret	*Madison*
Wahl, Frederick Rice	*Madison*
Walker, Emmett James Welch	*Madison*
Walker, Frances Annis	*Madison*
Walker, Roxie t c	*Mineral Point*
Waller, Theodore Adolph	*Spring Valley*
Walther, Max Edwin	*Medford*
Wattawa, John	*Madison*
Weber, Mary Amelia	*DuBois, Pa.*

Welch, Paul Bion	*Bangor, Mich.*
Wells, Chester Charles	*Madison*
Werlich, Richard Eugene m	*Weston*
Werner, Allan Charles	*La Crosse*
Wernicke, Carl Friederich Gustav Jr	*Fond du Lac*
Wertz, Frances Louise t c	*Forreston, Ill.*
White, Raymond Baird	*Kansas City, Mo.*
Williams, Caryl Rockwood t c	*Viroqua*
Williams, Gladys Ruth t c	*Milwaukee*
Williams, Ida Caroline	*Stevens Point*
Williams, Margaret Florence	*Chicago, Ill.*
Winchester, Edna	*Madison*
Winchester, Ruth	*Madison*
Winslow, Emily Bradley	*Madison*
Wippermann, Valeska Meta	*Shawano*
Withington, Frances Eleanor t c	*Baraboo*
Wolcott, Roger Dod	*Highland Park, Ill.*
Wolford, Harold Ernest	*Danville. Ill.*
Worsham, Walter Boatman	*Paris, Ill.*
Youngman, Frank Nourse	*Wautoma*
Youngs, Caroline Julia	*Madison*
Zollner, Louis Albert	*Madison*

—409

COURSE IN COMMERCE

Alexander, Samuel Edward	*Riverside, Cal.*
Allen, Royal Charles	*Portage*
Allyn, Stanley Charles	*Madison*
Ashmun, Clifford Samuel	*Waupaca*
Baker, Paul Edwin	*Peabody, Kansas*
Barth, Eugene Albert	*Port Washington*
Bergh, Stephen Tolman	*Madison*
Blodgett, Isabell Catherine t c	*Milwaukee*
Borgeson, Elmer Martin	*Oconomowoc*
Brimmer, Charles H. John	*Milwaukee*
Burhoe, Brainerd Desaix	*Chicago, Ill.*
Burhop, William Henry	*Sheboygan*
Burrow, Herbert Theodore	*Beaver Dam*
Butts, George Henry	*Evansville*
Byrns, William Daniel	*Lodi*
Castle, Lewis Gould	*Milwaukee*
Dahm, Everett Francis	*McGregor, Ia.*
Daly, Percifer Charles	*Grand Rapids*
Dietze, Carl Edgar	*Mayville*
Dohr, James Lewis	*Madison*
Doyle, Raphael Morgan	*Mitchell, S. D.*
Easthope, Stanley Roy	*Chicago, Ill.*
Ellis, Guy Thomson	*Madison*

Findeisen, Alvin Louis	*Green Bay*
Hammond, Ralph Perry	*Wauwatosa*
Hoskins, Mark Hadley	*Bloomington*
Kahn, Robert F.	*Milwaukee*
Kirk, Stanley Butcher	*Kenosha*
Kirk, William Edward	*Madison*
Knauss, Otto Adolph	*Evansville, Ind.*
Kuchenmeister, Hugo	*West Bend*
Lamb, Francis Stewart	*Madison*
Lang, Hal Herman	*Sioux City, Ia.*
Larsen, Archibald John	*La Crosse*
Luchsinger, Edna Katharine	*Monroe*
Moore, Hinman Rayworth	*Joliet, Ill.*
Nelson, Benjamin Louis	*La Crosse*
Novak, Frank John	*La Crosse*
Parish, Frank Clay	*Montfort*
Piper, Leon Charles	*Elkhorn*
Porter, Doric Chipman	*Fontana*
Pritzlaff, John Charles	*Milwaukee*
Roberts, William C.	*Shullsburg*
Runkel, Edgar G.	*Madison*
Runkel, Elgar E.	*Madison*
Schattschneider, Elmer Eric	*DeForest*
Scheffer, Ralph Jay	*Madison*
Sheridan, John Ensign	*Janesville*
Simmons, Lynn Archibald	*Corliss*
Smith, Leo Charles	*Ft. Atkinson*
Snyder, Harry Evan	*Milwaukee*
Steen, Arthur Lewis	*Madison*
Tandberg, Alvin	*Chippewa Falls*
Vits, Earl Oscar	*Manitowoc*
Wedlock, Elmer Leroy	*Mineral Point*
Zinke, Arno Louis	*Fond du Lac* —56

COURSE FOR NORMAL SCHOOL GRADUATES

Aasterud, Henry Bernhard	*Spring Valley*
Amundson, Mabel Ivena t c	*Rice Lake*
Barnard, Margaret M.	*Spring Green*
Bradbury, Velva Myrtle t c	*Fennimore*
Brasure, Ray Elwin t c	*Loyal*
Carman, Ruth	*Charleston, Ill.*
Daane, Edward N.	*Madison*
Fox, Dora Rose t c	*Fond du Lac*
Gilbertson, Mildred t c	*Blanchardville*
Henika, Louisa May t c	*Milwaukee*
Hyatt, Elsie Kaempfer	*Sheboygan*
Jones, Frank Gordon t c	*Shawano*

Jonas, Irving Willard	*Plymouth, N. H.*	
Koepke, William Charles	*Waukesha*	
Langwill, Martha Corbett	*Rockford, Ill.*	
Lloyd, Eleanor	*Cambria*	
Logue, Elmer Brewster	*Richland Center*	
Mitchell, Helen Elizabeth t c	*Argyle*	
Patterson, Percival P.	*Minneapolis, Minn*	
Schell, Harmon Frank	*Madison*	
Scoon, Helen Louise t c	*Superior*	
Shadall, Clara Emma t c	*Milwaukee*	
Sheldon, Hazel Lee t c	*Wildrose, N. D.*	
Wheelock, Ellen Pauline t c	*Westfield*	
Winger, Reinhard Conrad	*Madison*	
Young, Vive Hall t c	*Whitewater*	
Ziegler, Florence Anna t c	*La Crosse*	—27

Course in Chemistry

Bohnson, Van Lorens	*Clinton, Ia.*	
Brayton, Harold Renshaw	*Madison*	
Chaplin, Edgar Lee	*Plymouth*	
Cooke, Raymond Denny	*Eau Claire*	
Dana, Bedros	*Boston, Mass.*	
Duggan, Arthur Jacob	*Bradford, Penn.*	
Dunkel, Arthur Albert	*Phillips*	
Dyar, Ruth Iva	*Madison*	
Freiburger, William Howard	*New London*	
Hadfield, William Adrain	*Madison*	
Heise, Herman Alfred	*Milwaukee*	
Hollmeyer, Harry Louis	*Cincinnati, O.*	
Johnston, Angus James	*Oconto*	
Jones, Maldwyn Lloyd	*Racine*	
Juve, Walter Henry	*Merrill*	
Lamb, Alvin Romaine	*Linden*	
McGrath, Raymond Dyer	*Keokuk, Ia.*	
Magill, Donald Groves	*Madison*	
Moeschler, Carl Theodore	*Stevens Point*	
Olsen, Julia Elinor	*E. Milwaukee*	
Reid, Dwight Logan	*Montello*	
Roach, James Thomas	*Waterloo*	
Schneider, William John	*Horicon*	
Spero, Samuel	*Milwaukee*	
Wolfert, Clarke Kryn	*Sheboygan*	—25

SOPHOMORES

Allen, Carolyn Elizabeth	*Milwaukee*
Allen, Pattie Edna	*Bellingham, Wash.*
Alyea, Melville	*Earlville, Ill.*
Anderson, Charles Thomas	*Washington, Ia.*
Anderson, Ethol Mary	*Munsing, Mich.*
Angelbeck, Reuben Christian	*Merrill*
Armstrong, Margaret	*Phoenix, Arizona*
Arnold, Bertha Louise	*Eau Claire*
Arps, Helmuth Fred	*New Holstein*
Astle, Emily Louise	*Momence, Ill.*
Austin, Carl Noyes	*Elkhorn*
Austin, Esther Lavinia	*Eagle River*
Austin, Julia Heaton	*Cleveland, O.*
Babcock, Leonard Augustus	*Mt. Horeb*
Bacharach, Sidney	*Dixon, Ill.*
Baker, Arthur Earle	*Peoria, Ill.*
Baskerville, Stella Edith	*Madison*
Bassett, Norman Douglas	*Chicago, Ill.*
Batchelor, Oren Bronson	*Goshen, Ind.*
Baum, Ednah Louise	*Morris, Ill.*
Baum, George Koehler	*Milwaukee*
Bauman, Lily Katharine	*Mendota, Ill.*
Bauschek, John	*Milwaukee*
Beck, Thorvald Martin	*Racine*
Beck, Victor Van	*Madison*
Best, Grace Loucks	*Freeport, Ill.*
Biersach, Paula	*Milwaukee*
Blanding, Virgil Lowrie	*Moline, Ill.*
Blim, Charles Hewes	*Crete, Ill.*
Blodgett, Pliny Russell	*Lake Geneva*
Boelsing, Emilie Anna	*Madison*
Boettcher, Eric August	*Milwaukee*
Bond, Genevieve Adeline	*Lakefield, Minn.*
Boorman, William Ryland	*Grand Rapids*
Boorse, Jessica May	*Milwaukee*
Bowen, Myron William	*Richland Center*
Boyd, Charles Elmore	*Marinette*
Bradt, Harlan Hurlbut	*Duluth, Minn.*
Brandt, Tillie Clara	*Milwaukee*
Brayton, Arthur Holmes	*Lyons, Ia.*
Brewer, Jerome Seckel	*Chicago, Ill.*
Briggs, Allan	*St. Paul, Minn.*
Brindley, Benjamin Reed	*La Crosse*
Brittell, Bessie Vera	*Milwaukee*
Brown, Harriette Card t c	*Denver, Colo.*

Brown, Hazel Irene	*Madison*
Brown, Mary Storer	*Madison*
Brundage, Dean Kennedy	*Grand Rapids*
Brunkhorst, Robert Omro	*Milwaukee*
Buchholz, Theodore Gustave	*Davenport, N. D.*
Bucknam, Margaret Elsie	*Wauwatosa*
Buell, Mary Van Rensselaer	*Madison*
Burgard, Grace	*Creston, Ia.*
Burrell, John Angus	*Chouteau, Mont.*
Bybuth, Matilda	*Eau Claire*
Byrkett, Theta May	*Anderson, Ind.*
Calhoun, Helen Margaret	*Glencoe, Ill.*
Cameron, Mary Regina	*Chippewa Falls*
Carus, Gustave Krueger	*LaSalle, Ill.*
Case, Harry Jackson	*Racine*
Cash, Mary Josephine	*Superior*
Chapin, Margaret Amelia	*Fort Dodge, Ia.*
Chynoweth, Emily Ellen	*Madison*
Cibelius, Charles Anthony	*Racine*
Clark, Will Arthur	*Belmont*
Congdon, Ferne Lina	*Delavan*
Connell, Joseph James	*Topeka, Kansas*
Conover, Frederic Leroy	*Madison*
Coon, Anna Margaret	*Rhinelander*
Cooper, Inez Beardsley	*Madison*
Cronin, Katherine Lucile	*Oconomowoc*
Dallwig, Herbert Carl	*Milwaukee*
Dallwig, Leon Eugene	*Milwaukee*
David, Jessie Lucille	*Montfort*
Davies, Marian Lorraine	*Dixon, Ill.*
Davis, Harold Marvin	*La Crosse*
Davis, Marjory Anna	*Madison*
Deming, Lucille Cora	*Madison*
Desimval, Henrietta Marie	*Superior*
Deutsch, Leah Marie Genevieve	*Wausau*
De Wolf, Eva Clare	*Chicago, Ill.*
Dittmer, Winfred Cyril	*Seymour*
Dodge, Chester Lyman	*Windsor*
Doege, Karl Herman	*Marshfield*
Dorman, Florence	*Freeport, Ill.*
Douglas, James Lee	*Fairchild*
Draves, Arthur Robert	*Brandon*
Duke, Marion Margaret	*Madison*
Duncalf, William Raymond	*Lancaster*
Dunn, Roland Glen	*Greenville, Ill.*
Dunn, Tsoong-inng	*Soochow, China*
Duquaine, Edward Maximillian	*Green Bay*
Eaton, Mary Sears	*Calumet, Mich.*

Edwards, Anne Elizabeth	*Madison*
Erdman, Walter George	*Oshkosh*
Evans, Helen Alberta	*Racine*
Farley, Mary Margaret	*Madison*
Fitz Gibbon, Alice Elizabeth	*Waunakee*
Fleck, Elsie Louise	*West DePere*
Flint, Rebecca Punchard	*Madison*
Foley, Eva Winifred	*Baraboo*
Foxwell, Alice Adele	*Racine*
Franz, Carl Loser	*Aurora, Ill.*
Frary, Paul Vere	*Chicago, Ill.*
Frautschi, Edna Elizabeth	*Madison*
Frederickson, Jean Fyfe	*Madison*
Fries, Gyneth Theo	*Richland Center*
Fritche, Elsa	*New Ulm, Minn.*
Fuller, George Minot	*Exeter, N. H.*
Gasser, Almond Proctor	*Arcadia*
Gedney, Mary Anderson	*Onalaska*
Gehlert, Ervin Edwin	*Menomonee Falls*
Getts, Clark Hallam	*Chippewa Falls*
Gilms, James Peter	*Deerbrook*
Gillis, John Daniel	*Deerbrook*
Gold, John Kedney	*Madison*
Gosselin, Florence Lea t e	*Green Bay*
Grady, Agnes Scanlan	*Madison*
Graff, Marshall Conant	*Elkhorn*
Griffith, Harry B.	*Harlan, Ia.*
Grimm, Gladys	*Milwaukee*
Grubb, Clare Marie	*Janesville*
Gupta, Rayhuber Doyal	*Bevares, India*
Habermann, Victor Emanuel	*Lodi*
Hallam, Arthur Wood	*Sioux City, Ia.*
Hallisey, Loretto Genevieve	*Baraboo*
Hames, Ruth Anna	*Newburg*
Harper, Carl Samuel	*Madison*
Harris, James William Jr.	*Winnetka, Ill.*
Harrison, Helen Dorsey	*La Crosse*
Hartwig, Harvey Clarence	*Milwaukee*
Hawley, Frances Holden	*Platteville*
Head, Jerome Reed	*Madison*
Heddles, Beula Sloan	*Madison*
Heim, Marie Theresa	*Madison*
Hein, Regina Mary	*Madison*
Heister, Edwin Theodore	*Chicago, Ill.*
Helm, Elizabeth	*Rockford, Ill.*
Henderson, Anne Livingstone	*Chicago, Ill.*
Herreid, Cecelia	*Madison*
Hill, Edna Marion	*Madison*

Hill, George Crawford	*Grand Rapids*
Hinkley, Alice Rockwell	*Milwaukee*
Hogans, Walter John	*Oak Park, Ill.*
Hollingsworth, Sylvia Adeline	*Dubuque, Ia.*
Hollister, Clarence Allen	*Racine*
Howard, Margaret	*Tower City, N. D.*
Hsu, Zun Chang	*Chanchow, China*
Hubbard, Bela	*Detroit, Mich.*
Hubbard, Dorothy Rowe	*Madison*
Hudson, Margaret Marie	*Madison*
Hyde, Will Carrington	*Madison*
Ivey, Marguerite Elizabeth	*Mineral Point*
Jacobs, Josephine	*Oconomowoc*
Jandl, Charles	*Racine*
Jeffrey, Earl Munro	*Washington, D. C.*
Johns, May Caroline	*Mazomanie*
Johnson, Carl Emil Hobart	*Madison*
Johnson, Ethel Helen	*Waupaca*
Johnstone, Edward Knox	*Keokuk, Ia.*
Johnstone, Robert Moffat	*Hancock, Mich.*
Jolivette, Edna Emma	*La Crosse*
Jolivette, Eva Lou	*La Crosse*
Kading, Earl Christian	*Deerlodge, Mont.*
Kanouse, Mary	*Madison*
Karcher, Nettie Elizabeth	*Burlington*
Keyser, Helen	*Madison*
Kearney, Jeanette	*Racine*
Kearney, Katharine Louise	*Racine*
Kellogg, Amos Barnes	*Elkhorn*
Kerr, Spencer Hall	*Cotonsville, Md.*
Kerwin, George Fred	*Ashland*
Kieckhefer, George Henry	*Milwaukee*
King, John Dana	*Racine*
Kingdon, Jessie Margaret	*Brooklyn*
Klein, Ruth Catherine	*Dubuque, Ia.*
Kleinheinz, Amelia Victoria	*Madison*
Koester, George Fred	*Chicago, Ill.*
Koltes, Raphael Peter	*Waunakee*
Kootz, Arthur Carl	*Milwaukee*
Kouns, Sarah Marie	*Upper Sandusky, O.*
Kuelhorn, Walter Arnold	*Milwaukee*
Kuenzli, Clarence Raymond	*Milwaukee*
Larsen, Arthur William	*Milwaukee*
Lay, Ung-Chih	*Wuchang, China*
Leary, Mary Cecil	*Madison*
Leenhouts, Frances Elizabeth	*Milwaukee*
Leicht, William Freeman Vilas	*New Lisbon*
Leinbach, George Henry	*Chestnut, Ill.*

Lenroot, Dorothy Clough	*Superior*
Liang, Chi-Tai	*Canton, China*
Light, Sarah Margaret	*Madison*
Littlefield, Jesse Grant	*Freeport, Ill.*
Lobdell, Ruth Bernice	*Mukwonago*
Loh, Tachuen S. K.	*Soonkiang, China*
Lorenz, Leola Marie	*Madison*
Lovequest, George Howard	*Racine*
Low, Emma Geneva	*Chicago, Ill.*
Lu, Mon-Deh	*Tsinanpu, China*
Lu, Shon-Wen	*Canton, China*
Lundberg, Gertrude Adele	*Fish Creek*
McCarthy, Alice Lillian	*Madison*
McClenahan, Martha Gillette	*Cedar Rapids, Ia.*
McCormick, John Vincent	*Madison*
McDougall, Eva Florence	*Whitewater*
McGilvary, Margaret Cornelia	*Madison*
McKennan, Jesse Thomas	*Connersville, Ind.*
McNeil, Mary Eunice	*Stoughton*
McQuillan, Letitia Helen	*Merrill*
Mark, Clayton Jr.	*Lake Forest, Ill.*
Marsh, Carl James	*Madison*
Mattoon, Fred Geele Vaughn	*Sheboygan*
Maw, Irene Augusta	*Madison*
Maxwell, Melville Edward	*Marinette*
Mayo, Charles Alexander	*Eau Claire*
Mehlig, Lee Percy	*Madison*
Mei, Kuang-ti	*Ning-ku-Fu, China*
Meisekothen, Hildegarde Mary	*Madison*
Melaas, Esther Adella	*Madison*
Melby, Frida	*Madison*
Merkel, Harold Leland	*Milwaukee*
Miller, Gladys	*Madison*
Miller, Lloyd Dougherty	*Grand Rapids*
Miner, Georgia Willetta	*Clinton*
Mitra, Khagendra Narayan	*Malda, India*
Mohaupt, Arthur George t c	*Milwaukee*
Mohr, Edna	*Milwaukee*
Mohr, Lloyd H.	*Chicago, Ill.*
Montgomery, Edmund Brewer	*Quincy, Ill.*
Montgomery, Frederick Hosmer	*Quincy, Ill.*
Moore, Edith Weiser	*Aurora, Ill.*
Morris, Caroline Ruth	*Oshkosh*
Morrison, Elton Joseph, Jr.	*Chetek*
Morrissey, Henry Sandom	*Edgerton*
Morsbach, Robert Ernest	*Durand*
Muttkouski, Richard Anthony	*Milwaukee*
Myhre, Neena Rebecca	*Fairchild*

Myrland, Arthur Lucius	*Grantsburg*
Nelson, John Bastian	*Eau Claire*
Norton, Halbert [illegible]	*Poynette*
O'Brien, Teresa Veronica	*Fond du Lac*
O'Callaghan, Marie Evangeline	*Iron Mountain, Mich.*
O'Hora, Bernard Anthony	*Mazomanie*
Osann, Dorrit	*Oak Park, Ill.*
Osborne, Lloyd Noyes	*Omaha, Nebr.*
Otjen, Christian John	*Milwaukee*
Peck, Mary Elizabeth	*Enid, Okla.*
Pedersen, Erne Sofie	*Racine*
Perry, Charles Stanley	*Wauwatosa*
Perstein, Joseph	*Milwaukee*
Peterson, Elsie Gladys	*Sioux Falls, S. D.*
Phillips, Hazel Mae	*Madison*
Porter, Claude Tillinghast	*Dwight, Ill.*
Porter, Monica	*Elkhorn*
Post, Eveline Margaret	*Edgerton*
Post, Luella Alice	*Edgerton*
Powell, Walter Daniel	*Reedsburg*
Pringle, Dorothy Claire	*Marengo, Ill.*
Quale, Norman Milton	*Madison*
Rakshit, Hemendra Kisor	*Dacca, India*
Ransom, Stanlie McVenn	*Atkinson, Ill.*
Raymond, Lydia Burrell	*Aurora, Ill.*
Rees, Flora Belle	*Carlisle, Ia.*
Richardson, Lemont Hunter	*Sheboygan*
Robinson, Byron Lewis	*Oconomowoc*
Rogers, Maurice Pearse	*Oak Park, Ill.*
Romanosky, Katherine Mary	*Sparta*
Rood, Elizabeth Clarke	*Reedsburg*
Roos, Edmund Carl	*Oshkosh*
Rubin, Charles Augustus	*Milwaukee*
Rubin, Victor	*Milwaukee*
Rusch, Harry Frederick	*Fargo, N. D.*
Salsman, Gertrude Anne	*Madison*
Samuel, William Fredrick	*Racine*
Sawyer, Ruth Elizabeth	*Menominee, Mich.*
Scher, Joseph	*Madison*
Schley, Percy George	*Milwaukee*
Schmidt, Ella Dorothea	*Milwaukee*
Schoenleber, Louise Anne	*Milwaukee*
Schoewe, Walter Henry	*Milwaukee*
Schreiter, Herbert Gustav	*Milwaukee*
Schweizer, Karl Theodore	*La Crosse*
Search, Mabel Angus	*Milwaukee*
Sells, Jackson Johnson	*Madison*
Senty, Elmer George	*Arcadia*

Seward, Walter Edgar	*Alton, N. H.*
Seymour, Helen	*Hubbard Wood, Ill.*
Shacoff, Henry	*Madison*
Shadall, Elsa Helen	*Milwaukee*
Shanhouse, Louis J.	*Rockford, Ill.*
Shea, Susan Cecil	*Green Bay*
Sherman, Minnie Belle	*Ireton, Ia.*
Siegel, Isaac	*Superior*
Slater, Edith Marie	*Berlin*
Small, Sidney Herschel	*New York City*
Smith, Daniel DuPre	*Madison*
Spear, Gladys Wakeman	*Rock Falls, Ill.*
Springer, Elsie Laura	*Mineral Point*
Springer, Ruth Elizabeth	*Mineral Point*
Stafford, Robert Ridgeway	*Chicago, Ill.*
Stanley, Adelaide	*Great Falls, Mont.*
Statz, Alma Elizabeth	*Madison*
Steiner, Hugh Wynne	*Quincy, Ill.*
Stellberg, Edward Carl	*Racine*
Stevens, Frederica Leighton	*Madison*
Stevens, Stanley Story	*Oak Park, Ill.*
Stimes, Harriett Lenore	*Capron, Ill.*
Stoltz, John Crozier	*Ottumwa, Ia.*
Stoltz, Oscar William	*Ottumwa, Ia.*
Stoltze, Norris Sanborn	*Great Falls, Mont.*
Strelow, Idelle Celeste	*Madison*
Stuewe, Eric Frederic	*Milwaukee*
Sumner, Jessie Walthew	*Madison*
Swan, Jane Idelle	*Mazomanie*
Taplin, Charlotte Louise	*Wausau*
Taylor, Eugene Cowles	*Huron, S. D.*
Taylor, John Dudley	*Madison*
Taylor, Marjory Helen	*La Crosse*
Thauer, Olive Elizabeth	*Watertown*
Thayer, Charles Emery	*Markesan*
Thompson, John	*Madison*
Thompson, William Stirling	*Cleveland, O.*
Tiernan, William Lawrence	*Edgerton*
Todd, Mary Gill	*Dixon, Ill.*
Towne, Laura	*Madison*
Townsend, Eugene Herbert	*New Lisbon*
Trottman, Nelson Smith	*Milwaukee*
Tuttle, Ray Charles	*Madison*
Uhen, Rudolph Martin	*Burlington*
Vaughan, Donald Hugh	*Rhinelander*
Vinje, Janet	*Madison*
Vinson, Harold Stephens	*Ottumwa, Ia.*
Volk, Hubert Thomas	*Plymouth*

Wainwright, Florence	*Morris, Ill.*
Wangard, Emily Clara	*Milwaukee*
Warren, Inez	*Madison*
Webb, Francis James	*Plymouth*
Wegge, William Edward	*Milwaukee*
Wheeler, Gladys Evelyn	*Wauwatosa*
Wheeler, Watson Richard	*Randolph*
White, Cleveland	*Shullsburg*
White, Irvin Arnold	*Antigo*
Wilcox, Lyle Brownell	*Sterling, Ill.*
Williams, Edward Busch	*Cedar Rapids, Ia.*
Williams, Helen Agnes	*Milwaukee*
Williams, Ruth Lenore	*Boscobel*
Winn, Henry Newton	*Poynette*
Wolfe, Arthur Charles	*Streator, Ill.*
Wong, Minn D.	*Shanghai, China*
Wrigley, Roy Fielding	*Albion, Ind.*
Würdemann, Helen Louise	*Madison*
Wyatt, Harold Moore	*Fond du Lac*
Wysor, Dorothy Eads	*Pulaski, Va.*
Yewdale, Ralph Bailey	*Milwaukee*
Zaegel, Robert Lupinski	*Sheboygan*

—355

Course in Commerce

Ballard, Douglas Keene	*Oak Park, Ill.*
Bartley, Leo Paul	*Bloomington*
Bawden, George Ray	*Davenport, Ia.*
Bennett, Keenan Anslow	*Lancaster*
Bent, Maurice Hiram	*LaGrange, Ill.*
Berger, Walter Julius	*Milwaukee*
Bernard, Peter Oscar Burchard	*Mayville*
Binzel, Clarence William	*Milwaukee*
Blanding, James Lee	*Moline, Ill.*
Boyd, William Joseph	*Sturgeon Bay*
Bradish, Ralph Partridge	*La Crosse*
Bresnahan, George Thomas	*Sterling, Ill.*
Brewer, Everett Robert	*Chicago, Ill.*
Brigham, Richard Douglas	*Oil City, Pa.*
Brown, Paul Murphy	*Madison*
Bruce, Malcom Carter	*Seattle, Wash.*
Brumm, Lester Frank	*Madison*
Bur, Joseph	*Green Bay*
Chrisler, Chester Fellows	*Lodi*
Conley, Charles LeRoy	*Clinton*
Connor, Edwin Joseph	*Madison*
Das, Nabin Chandra	*Malda, India*
Denninger, Francis Arthur	*Watertown*

Dettmann, Edwin Albert	*Sheboygan*
Duerr, Herbert Jacob	*Wauwatosa*
Evans, John Clement	*Evansville*
Fehlandt, John Carl	*Madison*
Field, Adolph	*Madison*
Fitger, Arnold Kirst	*Duluth, Minn.*
Foster, Leroy Swormstedt	*Evansville, Ind.*
Gaertner, Herman Victor	*Madison*
Goble, Clyde Orin	*Lancaster*
Gullickson, Gerhardt Oscar	*Eau Claire*
Habermann, Lucius Clement	*Lodi*
Halverson, Stener Benjamin	*Stoughton*
Harper, LeBaron Lincoln	*Superior*
Harter, Arthur Gilbert	*Waukesha*
Harwick, Wearne Edward	*Madison*
Heald, Howard Leslie	*Oak Park, Ill.*
Hebenstreit, Frank Andrew	*Shullsburg*
Henry, Robert Kirkland	*Jefferson*
Heymann, Walter Mayer	*Chicago, Ill.*
Hickox, Samuel Silkman	*Milwaukee*
Hirsch, Charles Harper	*Milwaukee*
Hoeveler, Leo George	*Madison*
Holmes, William Heberling	*Washington, D. C.*
Jennett, Raymond Joseph	*Streator, Ill.*
Jirgal, John James	*Superior*
Jones, Charles William	*El Paso, Ill.*
Kahn, Leon Edmund	*Milwaukee*
King, Myron Arthur	*Kansas City, Mo.*
Koch, Orville Cyrus	*Plymou...*
Kress, John William	*Tomah*
Leibhart, Roy Charles	*Freeport, Ill.*
Lester, Robert Gaylord	*Kenilworth, Ill.*
Linn, Alexander Toris	*Stoughton*
Lobdell, Warren Lamson	*Chicago, Ill.*
Lyons, James Arthur	*Chicago, Ill.*
McCarthy, Glen Elroy	*Janesville*
McLean, Annis Cleveland	*Norris, Mont.*
Markham, Burtt Johnston	*Manitowoc*
Morgan, Lynn James	*Milwaukee*
Motoyama, Tokuzoh	*Satsuma, Japan*
Munson, Miller	*Wichita, Kansas*
Norem, Charles Arthur	*Bryant*
O'Neil, Eugene	*Chippewa Falls*
Ostrander, Frank Sidney	*Superior*
Ovrom, Fred Elmer	*Waupaca*
Peterson, Ernest Archie	*Blair*
Pittman, George William	*Indianapolis, Ind.*
Pomeroy, Herbert Stuart	*Oconomowoc*

Pott, Emil Benjamin	*Madison*
Priester, Henry Carl	*Davenport, Ia.*
Ray, Myron Thompson	*Madison*
Reichert, Edward Edgar	*Madison*
Rohn, Franklyn Albert	*Milwaukee*
Ruehl, Adolph Henry	*Milwaukee*
Runge, Ralf Thiele	*Baraboo*
Salisbury, Philip Sidney	*Oregon*
Sands, Albert Theodore	*Chippewa Falls*
Sherman, Thomas Brodus	*Milwaukee*
Sinaiko, Joseph Morris	*Madison*
Sporleder, Willard Moorehouse	*Wauwatosa*
Steinman, Henry John, Jr.	*Milwaukee*
Stewart, William Edward	*Joliet, Ill.*
Strickland, William Kimball	*Superior*
Stuhler, George Russell	*Monticello, Ia.*
Termansen, Hans Peter	*Sawyer*
Thoreson, Herman William	*Grantsburg*
Tormey, Albert Robert	*Madison*
Umhoefer, Anton Xavier	*Colby*
Van Vleck, Harry Hill	*Superior*
Vincent, James Attmore	*Davenport, Ia*
Walker, Gordon	*Madison*
Weber, Henry	*Milwaukee*
Wells, Leland Allison	*DePere*
West, DeWitt Clinton	*Elkhorn*
Wetherby, Barron Roberts	*Bay City, Mich.*
Wetzel, Harry Clarence	*Milwaukee*
Wildeman, George Henry	*Madison*
Williams, Milton Bryan	*Seneca, Kansas*
Wood, Frank Carman	*Oak Park, Ill.*
Woodhouse, Linn Arthur	*Bloomington*
Woodworth, John Lyman	*Omaha, Nebr.*
Work, Frank	*Clinton, Ia.*
Wright, Herbert Edwin	*Kansas City, Mo.*
Yost, John Radford	*Kansas City, Mo.*
Yunger, John Charles	*Ashland* —108

Course in Chemistry

Castendyck, Otto Frederick	*Peru, Ill.*
Chowdhury, Rajendra Narayan	*Chandpore, P. O., Parampore, Malda, India*
Echlin, Royal Edmond	*Odanah*
Gelatt, Arthur Alvin	*La Crosse*
Gothard, Nelson James	*Dundee, Ill.*
Henning, Sherburne Bryant	*Milwaukee*
Martin, Ross George	*Oregon*

Meese, Fred Arthur	*Michigan City, Ind.*	
Middlekauff, Ellwood Jacob	*Eau Claire*	
Moore, Murle C.	*Ft. Atkinson*	
Nelson, John Alfred	*Rockford, Ill.*	
Piper, Homer Allen	*Madison*	
Ritter, Philip August	*Milwaukee*	
Schultz, Harry George	*Milwaukee*	
Shum, Nim Chi	*Canton, China*	
Skinner, Merrill Edmund	*Madison*	
Sutton, Clarence George	*Lyons*	
Tseng, Yu-Mei	*Shanghai, China*	
Wilson, Thomas Leslie	*Galeton, Pa.*	
Wong, John	*Pekin, China*	
Young, Kwang Pi	*Tientsin, China*	—21

FRESHMEN

Achtenberg, Henrietta Loraine	*Madison*	
Adams, Howard Allen	*Oak Park, Ill.*	
Adams, William Karl	*Dundee, Ill.*	
Adler, John Henry	*Milwaukee*	
Agrell, Elsa Eugenia	*Superior*	
Alexander, Irma Elizabeth	*Lake Geneva*	
Allen, Ruth Marguerite	*Chelsea*	
Altmeyer, Arthur Joseph	*DePere*	
Anderson, George	*La Porte, Ind.*	
Anderson, Stanley Augustus	*Superior*	
Andrae, George Henry Joseph	*Milwaukee*	
Andrews, Helen Dare	*Birnamwood*	
Andrews, Olive Viola	*Oshkosh*	
Angvick, Rachel	*Ashland*	
Astell, Elsie Genevieve	*Madison*	
Aurland, Margaret	*Minot, N. D.*	
Ayers, Paul Kester	*Sheldon, Ia.*	
Babcock, Fred Henry	*Kasota, Minn.*	
Bachmann, Harrold Albert	*Sheboygan*	
Bagley, John Earl	*Waukan*	
Bagnall, Howard Edwin	*Kansas City, Mo.*	
Baillie, Joseph Michael	*Madison*	
Baker, Beatrice	*Evanston, Ill.*	
Baker, Marion Virginia	*Rochester, Minn.*	
Balcom, Glenn Gould	*Kenosha*	
Baldwin, Merle Mary	*Dubuque, Ia.*	
Baragwanath, Ruth Emilie	*Chicago, Ill.*	
Barlow, Renel Richard	*Monticello*	
Bauer, William Wa'do	*Milwaukee*	
Bautz, Gladys June	*Milwaukee*	
Bell, Donald Chesbro	*St. Joseph, Mo.*	

Bell, Grace Lina	*Peebles*
Belsky, Jacob Maron	*Dubuque, Ia.*
Bentley, John Edward	*Portage*
Berger, Alvin Gustave	*Chicago, Ill.*
Berger, Louis Samuel	*Chicago, Ill.*
Biart, Nathaniel Paul	*Honolulu, Hawaii*
Bissell, Spencer Pease	*West Allis*
Bock, John Erich	*Milwaukee*
Bollenbeck, Joseph William	*Madison*
Bradley, Will Rowland	*Short Hill, N. J.*
Brainerd, Clarence Alvin	*Boscobel*
Bratberg, Ralph Noah	*Eleva*
Brenner, Harriet Ruth	*Manawa*
Brewer, Thurlow Weed	*Fort Atkinson*
Brindley, Roy	*Boscobel*
Brodda, Fred William	*Burlington*
Brown, Clarence John	*Plum City*
Brown, John Breckenridge	*Madison*
Brown, Leslie Rollison	*Mt. Vernon, Ill.*
Bruns, Dorothy Mary	*Lake Mills*
Buchanan, Verne Elmer	*Auburn, Ind.*
Buech, Ella Bernice	*Milwaukee*
Buerki, Robin Carl	*Madison*
Bull, Benjamin Henry	*Galesville*
Bullard, Lola	*Madison*
Burke, John Edward	*Milwaukee*
Campbell, Shirley Brush	*Antigo*
Carr, Carlyle	*Madison*
Casserly, Eugene Henry	*Madison*
Caswell, Mildred C.	*Fort Atkinson*
Cazier, Lucile	*Chicago, Ill.*
Chai, Chun-lin	*Tientsen, China*
Chapman, Evelyn	*Hartland*
Christie, Robert Laing	*Milwaukee*
Clark, Walter Burdette	*Superior*
Clark, Warren Edward	*Chicago, Ill.*
Clauer, Marie Jane	*Ft. Atkinson*
Coapman, Verne E.	*Wyocena*
Coleman, Bessie Mae	*Madison*
Conley, John George	*Eau Claire*
Connell, Erwin Robert	*Colgate*
Conradson, Dorinda Ruth Prentice	*Madison*
Conway, Cornelius Michael	*Elroy*
Corbett, Gertrude Marion	*National Home*
Corcoran, John Joseph	*Reedsburg*
Corrigan, Louis Francis	*Elroy*
Cowley, Bertha	*Calumet, Mich.*
Craker, Gladys Vivian	*Reedsburg*

Crandall, John Seneca	*Milwaukee*
Cronander, Marjorie Anna	*Moline, Ill.*
Crowl, Ralph S.	*Chicago, Ill.*
Cullinan, Josephine Marie	*Madison*
Dafoe, Gladys Gertrude	*Wautoma*
Damm, Walter Noel	*Lancaster*
Davis, Helen Freeman	*Evanston, Ill.*
Dawson, James William	*Milwaukee*
Dean, James Reeve	*Appleton*
De Ville, Marie Elinor	*Sheboygan*
Dexter, Albert Jenness	*Sun Prairie*
Dickens, Harold Forster	*Milwaukee*
Dillman, Viola Ella	*Madison*
Dobeas, Emma Jane	*Ingalls, Mich.*
Docken, George Nunbson	*Mt. Horeb*
Dohse, Emilie Caroline	*Middleton*
Dooling, John Thomas	*Aurora, Ill.*
Dow, Lillian Jessie	*Madison*
Draper, Royal Samuel	*North Freedom*
Dreger, Emma Adele	*Mayville*
Du Frenne, Martin Fred	*Middleton*
Dulon, Lowell Richards	*New York City*
Dummer, William Francis	*Chicago, Ill.*
Dunfield, Helene Bourceer	*Wausau*
Dunn, Charles Bryan	*Madison*
Eberhardt, Raymond George	*Camp Douglas*
Edmonds, Rhoda Ann	*Madison*
Edwards, Florence Elizabeth	*Grand Rapids, Mich.*
Eifler, Elsie Caroline	*Milwaukee*
Eisaman, Ralph Herbert	*Pittsburg, Pa.*
Emerson, Adolph Herman	*La Crosse*
Emery, Mildred	*Madison*
English, Clifford Martin	*Arcadia*
English, Esther Isabelle	*Antigo*
Engsberg, Hattie Clara	*Lake Mills*
Eubank, Myrtle Ann	*Richmond, Va.*
Everhard, Fred Upham	*Ripon*
Fahrney, Paul Callo	*Milwaukee*
Farr, Helen Esther	*Eau Claire*
Faville, Katharine Ellen	*Lake Mills*
Fay, Walter John	*Dundee, Ill.*
Fellows, Abbie Jane	*Lodi*
Fieldstad, Nina	*Waupun*
Fischer, William Henry	*Antigo*
Fisher, Guyon Tompkins	*Minocqua*
Fitch, Joseph Gibson	*Madison*
Floden, Tuve John	*Rockford, Ill.*
Fogarty, William Thomas	*Green Bay*

Forsythe, Grace Laetitia	*Washington, D. C.*
Foster, Will Asa	*Elkhorn*
Fowler, Wallace Blackstone	*Chicago, Ill.*
Fox, Lucia Byrne	*Madison*
France, George Bourne	*Des Moines, Ia.*
Frew, Robert Leslie	*Madison*
Frish, Ruth Mary	*Madison*
Fritsche, Albert	*New Ulm, Minn.*
Fuller, George Milton	*Madison*
Fush, Viva Kathleen	*Cuba City*
Galey, Strand Bynum	*Oak Park, Ill.*
Gamble, Isabella Anna	*Moline, Ill.*
Garbutt, Ethel Grace	*Milwaukee*
Gardiner, Elizabeth	*Madison*
Gath, Gertrude Varena	*Madison*
Gay, Mabel Theressa	*Morris, Ill.*
Gehrz, Alma Madeline	*Milwaukee*
Gieseler, Rudolph Jacob	*Racine*
Gilbert, Max	*Milwaukee*
Gillett, Asa Clarence	*Sterling, Colo.*
Gilman, Will Thornton	*Portage*
Gittings, William Leroy	*Racine*
Glassner, William	*Milwaukee*
Gray, Nancy Anna	*Madison*
Greathouse, Stanford Clayton	*St. Joseph, Mo.*
Green, Ruth Elizabeth	*Fond du Lac*
*Griffin, Chester Stevens	*Earlville, Ill.*
Griffin, Margaret Ruth	*Creston, Ia.*
Grimes, Cora Daisy	*Allerton, Ia.*
Groenert, Katharine Clara	*Prairie du Chien*
Guequierre, Jacques Pierre	*Milwaukee*
Guillemine, Madeline	*North Milwaukee*
Gunderson, Nellie May	*Cherokee, Ia.*
Hagerman, Hildegarde Hazel	*Ludington, Mich.*
Hanley, Marguerite Catherine Johns	*Portage*
Hare, Albert Stevenson	*Noblesville, Ind.*
Hass, George Edward	*Reedsburg*
Hatch Lucile Dorothy	*Baraboo*
Hauer, Rose Helen	*Fond du Lac*
Hawley, Bessie Versalle	*Argyle*
Hayden, Van Bocklin	*Keokuk, Ia.*
Hayes, Margaret Elizabeth	*Madison*
Hedges, Robert Nathaniel	*Bradford, N. Y.*
Heineman, Walter Edmund	*Mauston*
Hektoen, Aikyn	*Chicago, Ill.*
Henderson, Stutley Charles	*West Allis*
Hendricks, Genevieve Estelle	*Madison*

* Died February 2, 1912.

Herzog, Harry Joseph	*Racine*
Hickey, Carrie Williamson	*Milwaukee*
Higgins, Donald Hugh	*Pontiac, Ill.*
Hinman, Norman Seymour	*Winnetka, Ill.*
Hodges, Paul Chesley	*Ashland*
Holt, Edith Lucile	*Pleasant Prairie*
Hompe, Marjorie	*Grand Rapids, Mich.*
Horn, Adlai Stevenson	*Cedarburg*
Horner, Louis Cowdrick	*Milwaukee*
*Howe, Henry P.	*Clayton*
Howell, Arthur Brandon	*Omana, Nebr.*
Humble, Ida Mae	*Antigo*
Hunt, Richard Nash	*Madison*
Huntington, Lucile Langson	*Chicago, Ill.*
Huth, Raymond William	*Watertown*
Inbusch, Ralph Charles	*Milwaukee*
Isenberg, Walter Carl	*Baraboo*
Jackson, Raymond Thomas	*Mineral Point*
Jacobs, Willard Richard	*Pittsburg, Pa.*
Jandl, Otto	*Racine*
Janes, Arthur Dewitt	*Tomah*
Jenness, Harold	*Nampa, Idaho*
Jennett, Edward James	*Streator, Ill.*
Jensen, Carl George	*Waupaca*
John, Walter Alfred	*Milwaukee*
Johnson, Annie Bernice	*Hudson*
Johnson, Donald Peter	*Grand Rapids*
Johnson, Edwin	*Washburn*
Johnson, Frank, Jr.	*Lake Geneva*
Johnson, Huldah Marie	*Virginia, Minn.*
Johnson, Willard Ashton	*Beloit*
Jones, Francis Alexander	*Grand Rapids*
Jones, William Henry	*Buffalo, Wyo.*
Kahn, Charlotte Sarah	*Ishpeming, Mich.*
Kasak, Michael	*Madison*
Kauffung, Esther Carla	*Racine*
Keeler, Ray Monroe	*La Crosse*
Keith, Ruth Alice	*Galesville*
Kellington, Celestia May	*New Rockford, N. D.*
Kellogg, Anna Dorreen	*Green Bay*
Kellogg, Douglas Russell	*Reedsburg*
Kelly, Esther Elizabeth	*Milwaukee*
Kermott, Edward Eugene	*Hudson*
Kessenich, Adelaide Helen	*Madison*
Ketcham, Harley Edward	*Madison*
Kimbark, Harry Rice	*Evanston, Ill.*
King, Mary Louisa	*Hurley*

* Died Dec. 19, 1911.

Kinnane, Katheryn Beatrice	*Dowagiac, Mich.*
Kitchell, Francis Robert	*Chicago, Ill.*
Klein, John Edmond	*Louisville, Ky.*
Kreis, Elizabeth	*Wheaton, Ill.*
Kremers, Roland Edward	*Madison*
Krumholz, Louis Eugene	*Arcadia*
Landau, Lloyd Harold	*Milwaukee*
Landsberg, Florence Columbia	*Erie, Pa.*
Lappley, Gilbert Frost	*Milwaukee*
Latham, Gwendoline	*Madison*
Latham, Nellie	*Madison*
Leeming, John Jr.	*Chicago, Ill.*
Lemcke, Henry William	*Middleton*
Lewis, May Chance	*Madison*
Lindau, Norman C.	*Baltimore, Md.*
Longfield, Charles Samuel	*Madison*
Lord, Vine David	*Cando, N. D.*
Loynes, Owen Hayward	*Fontana*
Luening, Hans	*Madison*
Lunt, Caroline	*Naperville, Ill.*
MacCulloch, Lucien Vernon	*Madison*
McGill, Ernest Charles	*Superior*
McGinley, Earle Edward	*Brooklyn, Ia.*
McKinnon, Grace Margaret	*Sioux Falls, S. D.*
McKittrick, Leland Sterling	*Eau Claire*
McMahon, Mary Allman	*Crown Point, Ind.*
Mackay, Raymond Cady	*Milwaukee*
Maher, Frank Bernard	*Madison*
Marshall, Howard Parson	*Milwaukee*
Martin, Ada North	*Lodi*
Martin, Hilmar George	*Milwaukee*
Martin, Louie Eugene	*Blue Mounds*
Martner, Ida	*Prairie du Chien*
Mather, Donald Richards	*Chicago, Ill.*
Matthews, Emma Louise	*Ishpeming, Mich.*
Mayberry, Hazelle Irene	*Clinton*
Mayfield, Alfred Lisle	*Cavaract*
Mead, Fergus	*Milwaukee*
Meuer, Helen Alma	*Madison*
Miars, Portia	*Ashland*
Michelstetter, Frances Clare	*Sioux City, Ia.*
Middleton, Forest Case	*Madison*
Mielke, Edward Frank	*Shawano*
Miller, Dora May	*Stoughton*
Moffet, Harold Leroy	*Judith Gap, Mont.*
Moon, Herbert Jacob	*Mason City, Ia.*
Moore, William Ralph	*Batavia, Ill.*
Moran, Michael David	*Madison*

Muench, Lili Anna	*Milwaukee*
Mullen, Alice Jane	*Madison*
Munro, Jeanette	*Madison*
Murphy, Harold John	*Waunakee*
Murphy, Henry Richard	*Beaver Dam*
Nanse, Fred August	*Sheboygan*
Negley, Eleanor Bradford	*Dayton, Ohio*
Nelson, Agnes E.	*Madison*
Nieser, May Eleanor	*Milwaukee*
Nord, Johannes Kleofas	*Rice Lake*
Nowels, Russell Wasson	*Columbia City, Ind.*
O'Connor, Francis Deno	*Mt. Horeb*
Oehler, Sidney Loesch	*Lake Mills*
Ofsdahl, Pearl Loraine	*Ettrich*
O'Hora, John Edwin	*Mazomanie*
O'Hora, Mary Agnes	*Avoca*
O'Hora, Oscar Joseph	*Madison*
Ollis, Edna Marie	*Madison*
Olsen, Esther Georgia	*Muskegon, Mich.*
Opie, Harold William	*Madison*
Oren, Elma Tomena	*Madison*
Osborn, John Searle	*Sioux City, Ia.*
Palmer, Frank Laurence	*Devils Lake, N. D.*
Passmore, Eric William	*Milwaukee*
Patt, Roscoe Foote	*Creston, Ia.*
Paul, Irene Rosalind	*Hurley*
Peacock, Kenneth Cleland	*Oconomowoc*
Peisch, Archie Marcus	*Eau Claire*
Pence, Helen Charlotte	*Madison*
Perkins, John Addison	*Sioux City, Ia.*
Perrine, Stephen Earl	*Big Timber, Mont.*
Peterson, LeRoy	*Amery*
Peterson, Ralph Abner	*Ellsworth*
Pfeiffer, Charles Albert	*Franklin*
Pfiffner, Harold Ward	*Fairmont, Minn.*
Phillips, Lyle Graham	*Fond du Lac*
Pickering, Hayden Mason	*Superior*
Piggins, Ralph Sproule	*Milwaukee*
Pittard, Fern Dena	*Sioux City, Ia.*
Pohle, Helen Loudora	*Madison*
Pohle, Marguerite Ruth	*Madison*
Pohlman, Clyde LaFayette	*Elkhorn*
Poor, Cornelius Wyman	*Burlington, Ia.*
Porter, Charles Virgin	*Viroqua*
Prescott, Ethel Marguerite	*Cambridge*
Price, Sadie Theadorsian	*Milwaukee*
Prince, Albertine	*Chicago, Ill.*
Pringle, Everett Hale	*Chicago, Ill.*

Puetz, Harold Henry	*Juneau*
Pugh, Grace Magdalene	*Madison*
Purvis, Muriel Pauline	*Madison*
Quirt, Harold William	*Peshtigo*
Radke, Etta Ida	*Milwaukee*
Rath, Floyd Cecil	*Cataract*
Ray, Robert Gardner	*Eau Claire*
Reinking, Anita Emma	*Madison*
Rettger, Winifred Russell	*Terre Haute, Ind.*
Reuter, Edward Carl	*Milwaukee*
Reynolds, Benoni Orrin Jr.	*Lake Geneva*
Riggert, Elda Katherine	*Reedsburg*
Ritzman, Ralph Roscoe	*Freeport, Ill.*
Robinson, Phillip Kyle	*Green Bay*
Rogers, William Allen	*Dayton, Ohio*
Rosenberry, Eleanore Mae	*Wausau*
Rosenow, Gustave Adolph	*Menasha*
Roth, William Edward	*Mauston*
Ruppenthal, Armond John	*Brillion*
Rush, Ida May	*Fort Wayne, Ind.*
Sachtjen, Sylvia Marie	*Madison*
Sachtjen, Wilbur Paul	*Madison*
Salsbury, Helen Viola	*Cazanovia, N. Y.*
Sandrock, George Paul	*Watertown*
Sawyer, Wilda Amy	*Menominee, Mich.*
Sayle, Mary Honora	*Madison*
Scheinpflug, Fred John	*Boscobel*
Schmidt, Anna Marie	*Freeport, Ill.*
Schmidt, Mildred Allen	*Evansville, Ind.*
Schmidt, Oscar William	*Milwaukee*
Schobinger, Helen Frances	*Shullsburg*
Schuett, Walter William	*Evanston, Ill.*
Schwartz, George Melvin	*Byron*
Severson, James Melvin	*Deerfield*
Shapiro, Esther	*Milwaukee*
Sharp, Mary Kathryn	*New Philadelphia, Ohio*
Shaw, Caroline Coffin	*Eau Claire*
Sheehy, Etta J.	*Green Bay*
Showalter, Floyd Morrison	*Madison*
Sims, Emily	*Dodgeville*
Singleton, John Milton Jr.	*Kansas City, Mo.*
Skemp, Archie Ambrose	*La Crosse*
Skinner, Rachel Lloyd	*Madison*
Slawson, Margurite Frances	*Eau Claire*
Slight, Franklin Evans	*Watertown*
Smith, Edward Thomas	*Brodhead*
Smith, Elizabeth Mary	*Milwaukee*
Smith, Frances Louise	*Des Moines, Ia.*

Smith, Georgia Isabel	*Racine*
Smithson, Paul Busby	*Milwaukee*
Spencer, Ernestine Ellen	*River Forest, Ill.*
Stark, Emma Carolyn	*Menomonee Falls*
Stark, Gerald Rockingham	*Delavan*
Stengl, Paul Samuel	*Antigo*
Stephens, Glenn William	*Chicago, Ill.*
Steuer, Joseph True	*Chicago, Ill.*
Stockwell, William David	*Pardeeville*
Stone, Ralph	*Madison*
Striebel, Elmer Carroll	*Beaver Dam*
Steussy, Sylvia Gertrude	*Verona*
Sunn, Chentsu Yuban	*Shanghai, China*
Swartzbaugh, Jason Blackford	*Toledo, Ohio*
Swingle, Florence Nathalie	*Muscoda*
TeSelle, Hazel Rosazalia	*Sheboygan Falls*
Textor, Bayard Henry	*Milwaukee*
Thielmann, Marie Anna	*West Bend*
Thielmann, Rose Margaret	*West Bend*
Thoma, Valeria	*Milwaukee*
Thuringer, Adele Victoria	*Madison*
Tomlinson, Howard Holmes	*Oak Park, Ill.*
Toomey, Edmond Galbraith	*Deer Lodge, Mont.*
Treakle, Helen Edna	*Madison*
Tremaine, Burton Carl	*Wickliffe, O.*
Trembly, John McClelland	*Kansas City, Mo.*
Trengrove, Jesse Samuel	*Terraville, S. D.*
Trezise, Harry Lewis	*Ironwood, Mich.*
Uglow, Kenneth John	*Palmyra*
Van Slyke, Vernon Plummer	*Oshkosh*
Vergeront, Marie Edna	*Madison*
Vogt, Armien Leopold	*Kilbourn*
Vogt, Leon George	*Kilbourn*
Wahl, Margaret Lydia	*Madison*
Waite, Gilbert Dillon	*Portsmouth, Ohio.*
Wakefield, Henry Don	*Milwaukee*
Waldo, Rollin Farquhar	*Des Moines, Ia.*
Wanzer, Irving Haight	*Wheaton, Ill.*
Warner, Rollin Aldrich	*Centralia, Ill.*
Watson, Florence Giddings	*River Forest, Ill.*
Webb, Charles Nicholls	*Lancaster*
Webb, Irene Haley	*Plymouth*
Webster, Lilah Marguerite	*Independence, Ia.*
Weiskopf, Arthur Adolph	*Kenosha*
Welch, George Wister	*Los Angeles, Cal.*
Weller, Stevens	*Milwaukee*
Werner, Raymond Clarence	*Milwaukee*
Weston, Burton Raymond	*Mason City, Ia.*

Whiffon, Clarence Fred	*Madison*	
White, Stuart Bernard	*Oak Park, Ill.*	
Whitney, Wayne K.	*Harlan, Ia.*	
Williams, Evan Owen	*Lime Springs, Ia.*	
Wilson, Charles Earl	*Warren, Ill.*	
Winn, Bessie Sara	*Portage*	
Wist, Annie Gurine	*Decorah, Ia.*	
Woodward, Madge Marie Wealtho	*South Bend, Ind.*	
Wootton, Elizabeth Gage	*Madison*	
Wright, Gustave de Neven	*Fond du Lac*	
Young, Mary Hunt	*Alpena, Mich.*	
Young, William Archie	*Augusta*	—425

Course in Commerce

Alt, Ernest R.	*Lancaster*
Altendorf, Florence George	*Port Washington*
Barnum, Clifton Lawrence	*Clinton*
Bekkedal, George Helmer	*Westby*
Bellman, Frank William	*Ft. Atkinson*
Bellows, Harry Alvin	*Rockford, Ill.*
Bement, Ralph Bicknell	*Brodhead*
Boehm, Otto Joseph	*Libertyville, Ill.*
Boguslawsky, Hugo	*Milwaukee*
Brann, Paul Gus	*Bailey's Harbor*
Budig, Fred George	*Waterloo*
Butterbaugh, Wayne Edgar	*Grand Rapids*
Byrnes, Allen Stuart	*Oconomowoc*
Carter, Russel J.	*Fremont, Ohio*
Cohn, Morris Smead	*Omaha, Nebr.*
Connor, Robert James	*Madison*
Cooper, Fred Macomber	*Chicago, Ill.*
Detienne, Earl Samuel	*Green Bay*
Dilman, John Henry	*Geneva, N. Y.*
Drake, Jacob Raleigh	*Lovington, Ill.*
Dreyer, Mark Charles	*Verona*
Duncan, Harry Alvin	*Keokuk, Ia.*
Duncan, John Nelson	*Westboro*
DuPertuis, Henry Jr.	*Adna, Wash.*
Duvall, Clarence Lathrop	*Kewaunee*
Findlay, Walter Alexander	*Miami, Okla.*
Forsinger, Darwin Abbott	*Chicago, Ill.*
Garner, Lillie Matilda	*Madison*
Garst, Warren Carroll	*Des Moines, Ia.*
Gelein, Edwin Anders	*Eau Claire*
Gottschalk, Henry William	*Milwaukee*
Gouger, Phillip Charles	*Grand Rapids*
Grant, Eugene William	*Clinton, Ia.*

Grell, Gilbert John	*Johnson Creek*
Grinde, Harry Andrew	*Madison*
Grube, Edwin George	*Lake Mills*
Hahn, Frank Jr.	*Ashland*
Haley, Harry Bernard	*Madison*
Hallas, Clifford Edward	*Salem, S. D.*
Hamilton, Palmer Roger	*Clinton*
Harris, Charles Keath	*Superior*
Haven, Theophilus Giles	*Stoughton*
Heath, George Earl	*Pardeeville*
Hemenway, Willard Henry	*Colorado Springs, Colo.*
Hengfuss, Chester Arthur	*Westfield*
Hill, Clarence Herbert	*Sterling, Ill.*
Hillman, Roy Elmer	*Modena*
Hohaus, Herbert William	*Winona, Minn.*
Hollen, Edwin Stanley	*Eau Claire*
Horlick, Arnold Alexander	*Milwaukee*
Hoyt, William Melanthan II	*Winnetka, Ill.*
Hughes, Stewart Wilson	*Madison*
Jackson, John Henry	*Aberdeen, S. D.*
Jensen, Ben Melvin	*Grantsburg*
Jerabek, Joseph August	*Algoma*
Johnson, Franklin Hubbard	*Glencoe, Ill.*
Johnson, Harry Spencer	*Winona, Minn.*
Kellogg, William Ferdinand	*Grand Rapids*
Klumb, Ewald Ulrich	*Milwaukee*
Knobel, Walter Henry	*Milwaukee*
Koch, Harry Jefferson	*Davenport, Ia.*
Kuehn, Karl Hugo	*Milwaukee*
Lohe, Fred Eugene Jr.	*Manitowoc*
Loomis, Fred Palmerlee	*Ottumwa, Ia.*
Lovell, Kenneth Haynes	*Libertyville, Ill.*
Lutz, Paul Frederick	*Jamestown, N. D.*
McCabe, William Elmer	*Moberly, Mo.*
McConnell, Stuart DeGraff	*Madison*
Meuer, Roman John	*Madison*
Meyer, Elmer Ephraim	*Kiel*
Morehart, Malcolm Butler	*Mankato, Minn.*
Morley, Frank Gearin	*Madison*
Neumann, Lawrence Louis	*Madison*
Neupert, Emil Herman	*Lake Mills*
Newman, Edward John	*Madison*
Olsen, Marshall Raymond	*Rice Lake*
Oyaas, John Jr.	*Eau Claire*
Partridge, Joseph Arlington	*Nampa, Idaho*
Pease, Frederick Jackson	*Wauwatosa*
Peterson, Harry Arthur	*La Crosse*
Pfister, Frederick William	*Sheboygan*

Pierce, Adolph Kern	*Elkhorn*
Porter, Arthur Morris	*Wauwatosa*
Portman, Edward Christian Jr.	*Chicago, Ill.*
Pray, Erwin Marble	*Chicago, Ill.*
Rich, Lester Hartley	*Goodland, Ind.*
Richardson, Roy Washington	*Dane*
Riphahn, Martin Michael	*Waunakee*
Roach, Paul Ramsey	*Rock Rapids, Ia.*
Roberts, Royal Arlington	*Racine*
Sawyer, Leslie Ellis	*Williams Bay*
Scoville, Earl Bemis	*Janesville*
Seward, Rossiter L.	*Rochester, N. Y.*
Shapiro, Harry Bennie	*Antigo*
Simpson, George Lane	*Oshkosh*
Smith, Irving Franklin	*Montclair, N. J.*
Smith, Ralph Curtis	*Green Bay*
Solberg, Lawrence	*Mondovi*
Spencer, Mary Blanche	*Chicago, Ill.*
Steiner, Percy Raymond	*Independence*
Stewart, Edward James	*Harvard, Ill.*
Stoffel, Arthur John	*Racine*
Stone, Frank Moore	*Madison*
Sullivan, James Colbert	*Madison*
Sweet, Carroll Van Renzler	*Pheonix, N. Y.*
Taylor, George Julius	*Madison*
Thomas, David Earle	*Attica, Ind.*
Thomas, Joseph Peter	*Kenosha*
Tillman, Frank William	*La Crosse*
Timson, Samuel Wilfred	*Madison*
Tingvold, John Christian	*Eau Claire*
Wacaser, Emery	*Lovington, Ill.*
Wagner, Milton	*Milwaukee*
White, Harry Gordon	*Milwaukee*
Wilsey, Frederick Sheldon	*Colorado Springs, Colo.*
Winkleman, Fred Charles	*Delavan*
Wynn, Lewis Grover	*Sterling, Ill.*
Zentner, John Peter	*Monticello*
Zillmann, Harold Allen	*Thorp* —119

Course in Chemistry

Bailey, Nathaniel Arthur	*Ashland*
Busby, Benjamin Louis	*Arcadia*
Davidson, Carl Nathan	*Mauston*
Davis, Willard Barton	*St. Joseph, Mo.*
Eggebrecht, Oscar Otto	*Wausau*
Eimer, Paul Frederick	*Niagara Falls, N. Y.*
Erickson, Alf	*La Crosse*
Haack, Otto Carl	*Monroe*

Heinecke, Walter William	*Sheboygan*	
Imig, Walter Joseph	*Madison*	
Jewell, Harry Frank	*Antigo*	
Lewis, Harold Arthur	*Fond du Lac*	
Marter, Herbert Lambert	*Milwaukee*	
Narwald, Carl Frederick	*Cleveland, Ohio*	
Nielsen, Orsen Nooman	*Beloit*	
Parker, Chester Eugene	*St. Louis, Mo.*	
Schunk, Oliver Henry	*Menomonee Falls*	
Staley, Mortimer Laurie	*Madison*	
Tatarian, Courken Sarkis	*Madison*	
Zeman, Otto George	*Superior*	—20

ADULT SPECIAL STUDENTS

Baldwin, Raymond Laurence	*Chicago, Ill.*
Beck, Carl Arthur	*Madison*
Blochford, James Oswald	*Beloit*
Block, Louis Harry	*New York City*
Boss, Freeda Eunice	*Superior*
Boyajian, Setrak Krikor	*Madison*
Boyd, Chorale	*Madison*
Briggs, Howard Bovee	*Arena*
Brinkhoff, Clara Gertrude	*Madison*
Brown, George	*Madison*
Casberg, Carl Herbert	*La Crosse*
Chisholm, Walter	*Madison*
Clark, Emily Ethel	*Portage*
Clifford, John William Jr.	*Stevens Point*
Coddington, Robert LeRoy	*Madison*
Collins, Rollin Howard	*Kansas City, Mo.*
Dabney, William Lyle	*Shelfor, Va.*
Davies, Llewellyn	*Chicago Heights, Ill.*
Dorrans, James Morgan	*Madison*
Dunfield, Blanche Bourcier	*Madison*
Eller, Benjamin Louis	*Janesville*
Emmett, Boris	*Madison*
Engebretson, George Melvin	*Gratiot*
Frear, Harriett Estelle	*Madison*
Frederickson, Shirley Rosalind	*Madison*
Gallagher, Joseph Thomas	*Racine*
Haake, Alfred Paul	*Chicago, Ill.*
Heinrich, Arnold Anton	*Cedarburg*
Hendricks, Gertrude Winnifred	*Madison*
Hewitt, Mary Anne	*Madison*
Hillberry, Maud Eva	*Muscoda*
Jackman, Johnston Charles m	*Madison*

Jamison, Charles Laselle	*Madison*
Jones, Griffith S.	*Milwaukee*
Jones, Jerome Bonaparte	*Lisbon, N. D.*
Kay, Rosaline Kadewitz	*Madison*
Kinne, Burdette Ingersoll	*Madison*
Kurz, Alvina Emma	*Madison*
Laird, Mary Elizabeth	*Madison*
Lang, Hiram Arthur	*Chippewa Falls*
Lee, Henry Gustave	*Madison*
Lowenthal, Marvin Marx	*Bradford, Pa.*
Luttrell, Laura Elizabeth	*Knoxville, Tenn.*
Maclin, Edward Silver	*Madison*
Mallien, Frank James	*Brussels*
Martineau, Eugene Bird	*Marinette*
Maurer, Claude Norman	*La Crosse*
Mercy, Anna	*Madison*
Mettler, Carl John	*Madison*
Miller, Nina Mary Regina	*Madison*
Mitchell, Grace Beverly	*Lake Beulah*
Moore, Joseph Ward	*Batavia, Ill.*
Mountain, Arthur Harcourt	*Milwaukee*
Narbo, Lauritz Martin	*Madison*
O'Hora, Thomas Laurence	*Avoca*
Pagar, Shanker Madhav	*Kalamdhari, India*
Parsons, Frank Youmans	*Madison*
Reque, Sara Julia Ann	*Madison*
Roche, Stanley William	*Merrill*
Rogers, John Joseph	*Phillips*
Saposs, David Joseph	*Milwaukee*
Scheide, Ruby Augusta	*Barneveld*
Schmidt, John Johnson	*Madison*
Smith, Pearl Mabry	*Washington, D. C.*
Smith, Sarah Elizabeth	*Madison*
Sneeberger, William Alvin	*Racine*
Stecker, Alle Della	*Deming, N. M.*
Stephani, Florence	*Madison*
Stewart, John James	*Marinette*
Wakeman, Hattie Josephine	*Madison*
Warner, Robert D. Miller	*Rockford, Ill.*
Whisler, Ivan Vercy	*Platteville*
White, Ralph Macaulay	*Mt. Vernon, Ia.*
Williamson, John Andrew	*Chicago, Ill.*
Wilson, Agnes Edna	*Madison*
Winship, Amy Davis	*Racine*

—76

Adult Special Students, Course in Commerce

Bixby, William Benjamin	*Davenport, Ia.*	
Conron, Carl Edward	*Danville, Ill.*	
Keator, Rufus Bruyn	*Paxton, Ill.*	
Ogden, David Batchelder	*Chicago, Ill.*	
Ott, Harvey Lincoln	*Milwaukee*	
Rieger, Harry William	*Sterling, Ill.*	
Schuetter, George Matthew	*Appleton*	
Schulte, Isidore John	*Milwaukee*	
Smith, Earl Lloyd	*Cedarville, Ill.*	
Smith, LeCount Lawson	*Delavan*	
Strong, William Barstow II	*Beloit*	
Walker, Earl Reuben	*Madison*	—12

Adult Special Students, Course in Chemistry

Jingheusian, Ben H. Ajob	*Madison*	
Oesterle, Joseph Francis	*Altoona, Pa.*	
Pierce, Paul James	*Plover*	
Schunck, John Ernest	*Milwaukee*	
Wille, Carl Augustus	*Milwaukee*	—5

SCHOOL OF MUSIC

Graduates

Anderson, Margaret	*Madison*	
Anderson, Vinnie	*Stoughton*	
Gilman, Flora Mosely	*Madison*	
Rueth, Anna Petronilla	*Sun Prairie*	
Theobald, Almina Mae	*Madison*	—5

Seniors

Johnson, Laura Butler l s	*Madison*	
Quayle, Florence Fidelia	*Madison, Ohio*	
Ridgway, Grace Gladys l s	*Madison*	
Robinson, Miriam Josephine l s	*Madison*	—4

Sophomores

Charles, Lucile Helen	*Madison*	
Ibach, Esther Matilda	*Alma*	
Pagem, Myrtle Annette	*Stoughton*	
Parkinson, Kathryn	*Madison*	—4

Freshmen

Abbott, Orra M.	*Ontario*	
Agrell, Elsa Eugenia	*Superior*	
Christ, Evaleen Eleanor	*Wausau*	
Culton, Lucile	*Edgerton*	
Dieter, Esther Evangeline	*Montfort*	
Lake, Dora Lucile	*Madison*	
Newell, Emma Train	*Sioux Falls, S. D.*	
Purtell, Jessie Marguerite	*Madison*	
Puster, Margaret Enrich	*Chicago, Ill.*	
Richards, John Stanley	*Madison*	
Tormey, Frances Anna	*Madison*	—11

Supervisor's Course

Second Year

Hunt, Maude Iva t c	*Madison*	
Jevne, Kadelia Gilbertson t c	*Meridian*	
Jencks, Vescey Belle t c	*Lodi*	
Miller, Leila Evangeline t c	*Belleville*	—4

First Year

Barry, Donna Marie	*Hayward*	
Brandenburg, Lucile	*Fort Dodge, Ia.*	
Brennan, Hazel Kathryn	*Baraboo*	
Burton, Agnes Mary	*Billings, Mont.*	
Donovan, Adelaide	*Madison*	
Herrman, Harriet Ruth	*Sparta*	
Laubenstein, Guinevere Eleanor	*Gresham*	
Merkelbach, Marie Louise l s	*Madison*	
Pfiffner, Mary Ramona	*Stevens Point*	
Simpson, Esther Helena	*Madison*	
Vick, Margaret Anna	*Madison*	
Wheeler, Ruth Zell	*Janesville*	—12

Adult Specials

Alford, Ethel Post	*Madison*	
Anderson, Alice Johanna	*Madison*	
Borden, Robert	*Madison*	
Brandt, Emma Louise	*MacFarland*	
Briggs, Ruth Lorena	*Madison*	
Carr, Myrtle	*Emporia, Kas.*	
Cooper, Evelyn May	*Madison*	
Crawford, Charlotte Cushman	*Oshkosh*	
Fischer, Carl	*Madison*	

Jones, Jennie Allen	*Sioux City, Ia.*	
Kratz, Clara	*Schleisingerville*	
Mac Bride, Marie	*Marshalltown*	
Mandt, Theckla	*Madison*	
Olson, Edith	*Stevens Point*	
Schmitt, Pearl Ruby	*Madison*	
Schwenn, Edward	*Madison*	—16

Unclassified

Brown, Mary Ellen	*Madison*	
Clavadatscher, Tobias	*Sauk City*	
Elgin, Nellie Puffer	*Madison*	
Hubbell, Helen	*Madison*	
Lathrop, Frances Child	*Madison*	
Marsh, Harry Gilmore	*Waunakee*	
Porter, Hazel Evaline	*Portage*	
Roos, Winifred	*Madison*	
Sanford, Dorothy	*Madison*	
Schultz, Edith Caroline	*Lake Mills*	
Steensland, Lohra	*Madison*	
Steve, Fannie Louise	*Madison*	
Sullivan, Helen	*Madison*	
Swenson, Helen Katrina	*Madison*	
Turk, Hazel Frances	*Black Earth*	
Van Selus, Edgar James	*Portage*	
Williams, Mabel Elizabeth	*Cobb*	
Wittwer, Elgia Leila	*Madison*	—18

Students in Other Colleges Electing Courses in Music

Abaly, Winnifred l s	*Madison*
Allen, Pattie Edna l s	*Billings, Mont.*
Alyea, Melville l s	*Earlville, Ill.*
Amundson, Mabel Ivena l s	*Rice Lake*
Baker, Ross Allen g	*Madison*
Bartman, Selma Henrietta l s	*Marshfield*
Bassett, Norman Douglas l s	*Chicago, Ill.*
Beale, Charles Roddenbery a	*Cairo, Ga.*
Beers, William Charles l	*Platteville*
Bellman, Frank William l s	*Fort Atkinson*
Bennett, Charles Edwin e	*Fort Collins, Colo.*
Berger, Louis Samuel l s	*Chicago, Ill.*
Bernard, Peter Oscar Burchard l s	*Milwaukee*
Biersach, Hugo l s	*Milwaukee*
Biersach, Paula l s	*Milwaukee*
Blackburn, Ralph l s	*Elgin, Ill.*
Blake, Elmer Bingham g	*Milwaukee*

Boguslawsky, Hugo l s	*Milwaukee*
Boguslawsky, Marc l s	*Milwaukee*
Bonesteel, Verne Clinton l s	*Huron, S. D.*
Bonino, Maria Cecelia l s	*Hurley*
Bradish, Charles Bresee e	*La Crosse*
Bradshaw, Ethel Belle l s	*Rockford, Ill.*
Brinkhoff, Clara Gertrude l s	*Madison*
Buckman, Margaret Elsie l s	*Wauwatosa*
Buech, William Frederick l s	*Milwaukee*
Buhlig, Alma Emma l s	*Chicago, Ill.*
Buss, Flora Emma l s	*Milwaukee*
Bussell, Nellie Eileen l s	*Madison*
Butz, Charles Harold e	*Mazomanie*
Carpenter, Floyd Goodrich l s	*Madison*
Carson, Mildred Harriet l s	*Madison*
Caswell, Mildred C. l s	*Fort Atkinson*
Chapman, Clinton Joseph a	*Darlington*
Christians, George Frederick l s	*Johnson Creek*
Clauer, Marie Jane l s	*Fort Atkinson*
Cooke, Raymond Denny l s	*Eau Claire*
Cummings, Lucile Priscilla l s	*Red Lodge, Mont.*
Curtis, Emory Blake l s	*Davenport, Ia.*
Davies, Ruth Eaton a	*Milwaukee*
Davis, James E. l s	*Barneveld*
Deming, Cora Lucile l s	*Madison*
Deming, Marian Hazel l s	*Hammond, Ind.*
Dettmann, Edwin Albert l s	*Sheboygan*
Deutsch, Leah Marie Genevieve l s	*Wausau*
Dietze, Carl Edgar l s	*Mayville*
Doyle, James Harold l s	*Madison*
Dunfield, Blanche Bourcier l s	*Madison*
Dyar, Ruth Iva l s	*Madison*
Eisenhut, Maurice a	*Athens*
Ely, Dorothy Belle l s	*Madison*
Emerson, Adolph Herman l s	*La Crosse*
Fess, Madeline l s	*Madison*
Feuerhak, Martin George l s	*La Crosse*
Ficklin, Henry Stone l s	*Marshfield*
Foley, Eva Winifred l s	*Baraboo*
Foley, Kate Agnes l s	*Manson, Ia.*
Ford, Mary Estelle l s	*Madison*
Foster, Fayette Laverne l s	*Fall River*
Foster, Glen Reid l s	*Madison*
Francis, Harry Dalton l s	*Beloit*
Fraser, John Jr. e	*Milwaukee*
Fryette, Evangeline l s	*Madison*
Gillett, Majorie Burnton l s	*Madison*
Gilman, Edgar Dow e	*Madison*

Gollmar, Edith Florence a	*Baraboo*
Gosseline, Florence Lea 1 s	*Green Bay*
Graetz, Walter Carl e	*Milwaukee*
Gratiot, Mary Anne 1 s	*Shullsburg*
Graves, Helen Dorothy 1 s	*River Forest, Ill.*
Grube, Edwin George 1 s	*Lake Mills*
Guenther, Oscar Frederick a	*Campbellsport*
Gunderson, Oscar a	*Madison*
Haake, Alfred Paul 1 s	*Chicago, Ill.*
Haas, Lilly Katherine 1 s	*Pewaukee*
Hallam, Arthur 1 s	*Sioux City, Ia.*
Hallisey, Lorretto Genevieve 1 s	*Baraboo*
Hames, Ruth Anna 1 s	*Newburg*
Harter, Arthur Gilbert 1 s	*Waukesha*
Hay, Earl Downing g	*Sanford, Ind.*
Head, Jerome Reid 1 s	*Madison*
Heister, Edwin Theodore 1 s	*Chicago, Ill.*
Hershey, Catherine Enzabeth 1 s	*Hershey, Pa.*
Hill, Edna Marion 1 s	*Madison*
Himmelstein, Arthur Louis e	*Milwaukee*
Hinckley, Marguerite Josetta 1 s	*Stevens Point*
Hoffman, Carl Richard 1 s	*Waupaca*
Hogans, Walter John a	*Oak Park, Ill.*
Hollingsworth, Laura Anne 1 s	*Dubuque, Ia.*
Hompe, Marjorie 1 s	*Grand Rapids, Mich.*
Hooper, Lorna 1 s	*Oshkosh*
Hoppert, Martin John a	*Sheboygan*
Horner, Herbert Frank 1 s	*Finley, N. D.*
Hoskins, Mark Hadley 1 s	*Bloomington*
Howard, Claude Earl 1 s	*Madison*
*Howe, Henry P. 1 s	*Clayton*
Hubbell, Wolcott Wood c	*Madison*
Hudson, Margaret Marie 1 s	*Madison*
Hyatt, Elsie Kaempfer 1 s	*Madison*
Ibsen, Herman Lauritz a	*Chicago, Ill.*
Jackman, Ellen Reis 1 s	*Chicago, Ill.*
Jensen, Evelyn Harriett a	*Madison*
Johnson, Agnes Beatrice 1 s	*Richland Center*
Johnson, Katherine Diantha 1 s	*Stoughton*
Jolivette, Edna Emma 1 s	*La Crosse*
Jolivette, Eva Lou 1 s	*La Crosse*
Jones, Ira David a	*Nashota*
Joslin, Richard Raymond 1 s	*Mauston*
Josten, Harriett Margaret Hazel 1 s	*La Crosse*
Kay, Rosaline 1 s	*Madison*
Keith, Alice Ruth 1 s	*Galesville*
Kellington, Celestia May 1 s	*New Rockford, N. D.*

* Died Dec. 19, 1911.

Kent, Fay Marie l s	*Helena, Mont.*
Kepke, Frederick William l s	*Madison*
Kieckhefer, Anna Elizabeth l s	*Milwaukee*
Kilpatrick, Elmer James a	*Belmont*
Kjellgren, Blenda Louise m	*Rockford, Ill.*
Kleinpell, Louise Carolyn l s	*Elkader, Ia.*
Knop, Dena Lucinda g	*Fond du Lac*
Kohler, Bert M. l s	*Chicago, Ill.*
Kootz, Arthur Carl l s	*Milwaukee*
Kouns, Sarah Marie l s	*Upper Sandusky, O.*
Kragh, Stella Marguerite l s	*Madison*
Kremer, Eugene Edward l s	*Fond du Lac*
Kuhnen, Arthur Nicholas l s	*Chicago, Ill.*
Lacy, William Randolph e	*Madison*
Lamb, Alvin Romaine l s	*Linden*
Lang, Gladys Wilhelmina l s	*Eau Claire*
Layman, Kenneth Foss a	*La Grange, Ill.*
Levitan, Abe Mortimer l s	*Madison*
Levitan, Esther l s	*Madison*
Lloyd-Jones, Ralph l s	*Hillside*
Loew, Jessie Daisy Ida l s	*Colgate*
McClenahan, Martha Gillette l s	*Cedar Rapids, Ia.*
McKennan, Jessie Thomas l s	*Connersville, Ind.*
McKinley, Harriet Belle l s	*St. Ansgar, Ia.*
McMillan, Florence Cynthia l s	*Fort Atkinson*
McMurray, William Matthew e	*Lake Preston, S. D.*
Mailer, Katherine Margaret l s	*DePere*
Mann, Charles August g	*Madison*
Matts, Mary Ventura l s	*Verona*
Merriman, Alice P. g	*New York, N. Y.*
Meyer, Mabel Matilda l s	*Kirkland, Ill.*
Middlekauff, Ellwood Jacob l s	*Eau Claire*
Milhaupt, Vera Amalia l s	*New Holstein*
Moerke, Rosalind Emilie l s	*Madison*
Mohaupt, Arthur George l s	*Milwaukee*
Moore, Edith l s	*Merrillan*
Moore, Hinman Rayworth l s	*Joliet, Ill.*
Morgan, Everette Kellogg e	*Madison*
Morgan, Thomas Henry l s	*Madison*
Morley, Fannie Edna l s	*Baraboo*
Morley, Inez Elizabeth l s	*Madison*
Morris, Caroline Ruth l s	*Oshkosh*
Morsbach, Robert Ernest l s	*Durand*
Mott, Alma Signa l s	*Decorah, Ia.*
Muench, Lili Anna l s	*Milwaukee*
Murray, Allen Kenneth a	*Ripon*
Murray, Helen Frances a	*Renssalaer, Ind.*
Nance, Allen Ellsworth e	*Monroe*

Nash, Leo l s	*Grand Rapids*
Neidig, William Jonathan g	*Madison*
Newman, Elsie Elizabeth Laura l s	*Madison*
Oehler, Sidney Loesch l s	*Lake Mills*
Olsen, Esther Georgia l s	*Muskegon, Mich.*
Olson, Louis l s	*Hayward*
Osann, Norman e	*Oak Park, Ill.*
Parish, Frank Clay l s	*Montfort*
Parker, Charles Strong a	*Galesville*
Parks, Rollin Robert e	*Fredonia*
Pease, Edna Crystal l s	*Madison*
Peterson, Ernest Archie l s	*Blair*
Pickard, Arthur Edward e	*Chicago, Ill.*
Plumb, Mary Alma l s	*Fairview, Kas.*
Pond, Ethel Pooley l s	*Madison*
Pope, Minnie Henrietta l s	*Madison*
Porter, Philip Howe l s	*Madison*
Post, Jessie l s	*Madison*
Post, Luella Alice l s	*Edgerton*
Potgieter, Dietlof Siegfred a	*Amersfoot, Transvaal, S. A.*
Pott, Arthur Frederick a	*Sheboygan*
Prochazka, Henry Charles e	*Manitowoc*
Purchas, Robert Thorsen e	*London, England*
Raetzmann, Hilda Marie l s	*Reedsburg*
Rawson, Hazel Arvilla l s	*Portage*
Reber, Hugh Jackson l s	*Madison*
Reinking, Anita Emma l s	*Madison*
Reque, Sara Julian l s	*Madison*
Reuter, Louis Frederick Jr. e	*Milwaukee*
Richter, Oscar Arthur e	*Manitowoc*
Ring, Avis l s	*Neillsville*
Ringling, Alice Josephine l s	*Baraboo*
Ritzman, Ralph Roscoe l s	*Freeport, Ill.*
Roberts, Helen Adeline a	*Superior*
Roehling, Otto Carl l s	*Milwaukee*
Roethe, Harry Edward a	*Fennimore*
Rood, Elizabeth Clarke l s	*Reedsburg*
Rowley, Alden Bruce l s	*Madison*
Ruedebusch, Hans Henry l s	*Mayville*
Runge, Ralf Thiele l s	*Baraboo*
Runkel, Edgar G. l s	*Madison*
Runkel, Elgar E. l s	*Madison*
Runzler, Arthur Charles l s	*Milwaukee*
Ryan, Kathryn Frances l s	*Waukesha*
Samp, Edward Joseph l s	*Cecil*
Schecter, Samuel e	*Madison*
Scheide, Ruby Augusta l s	*Barneveld*
Schneider, Frederick Cooper e	*Des Moines Ia.*

Schroeder, Walter Henry l s	*Manitowoc*
Schutte, Carl Jacobus Erasmus a	*Pretoria, S. Africa*
Schwartz, Nellie Elizabeth l s	*East Troy*
Seymour, Helen l s	*Hubbardswoods, Ill.*
Shepard, Katherine Helen a	*Mineral Point*
Shero, Lucius Rogers g	*Racine*
Sikhart, Joseph George a	*Muscoda*
Simons, Richard Wharton e	*Madison*
Solomon, Margaret a	*Chicago, Ill.*
Spear, Gladys Wakeman l s	*Rock Falls, Ill.*
Sporleder, Willard Moorehouse l	*Wauwatosa*
Starks, Irene Valanche l s	*Madison*
Statz, Alma Elizabeth l s	*Madison*
Steen, Arthur Lewis l s	*Madison*
Steiner, Ora Clarence e	*Orville, O.*
Stengl, Paul Samuel l s	*Antigo*
Stevens, Mabelle Emma l s	*Janesville*
Stoddard, Leroy Lester e	*Platteville*
Stoltze, Norris Sanborn l s	*Great Falls, Mont.*
Strelow, Idelle Celeste l s	*Madison*
Sullivan, Colbert l s	*Madison*
Sumner, Jessie Walthew l s	*Madison*
Sweetman, Ray Herbert l s	*Indianapolis, Ind.*
Swetting, Florence l s	*Berlin*
Talbot, Charles William g	*Pullman, Wash.*
Tarrell, Arch LeRoy g	*Platteville*
Thielmann, Marie Anna l s	*West Bend*
Todd, Mary Gill l s	*Dixon, Ill.*
Tomhagen, Edith Summer l s	*Chicago, Ill.*
Torgerson, Oscar l s	*Ontario*
Tristram, Robert Dix l s	*Norwalk, Conn.*
Vognild, Elvira Amanda s	*Chicago, Ill.*
Wakefield, Lois l s	*Milwaukee*
Walker, Emmett James Welsh l s	*Madison*
Walther, Max Edwin l s	*Medford*
Ward, Oscar Gardien e	*Fond du Lac*
Warren, Inez l s	*Fox Lake*
Watrud, Hjalmer Oliver a	*Blanchardville*
Wehrwein, Carl Fred a	*Manitowoc*
Wells, Chester Charles l s	*Madison*
Wesle, Herbert William e	*Medford*
West, Calvin Parker a	*Waupaca*
Whiting, Ellis Wilbur a	*Oconto*
Williams, Helen Agnes l s	*Milwaukee*
Williamson, Robert Crosier l s	*Cleveland, O.*
Wilson, Lewis Kemper a	*Milwaukee*
Winger, Reinhard Conrad l s	*Madison*
Winn, Henry Newton l s	*Poynette*

Wolfe, John Henry Louis e	*Keokuk, Ia.*
Woodward, Madge Marie l s	*South Bend, Ind.*
Wrigley, Roy Fielding l s	*Albion, Ind.*
Young, Roy D. a	*Galesville*

—260

MEDICAL SCHOOL

Second Year

Bedford, Edgar William l s	*Sheboygan*
Bowen, Robert Linde l s	*Oshkosh*
Brereton, Gilbert Elliott B. S. g, c p h	*Madison*
Bunta, Emil l s	*Milwaukee*
Colignon, Constant Moreaux l s	*Sturgeon Bay*
Davis, Irwin Grant l s	*Arcadia*
Foerster, Harry Robert l s	*Milwaukee*
Grannis, Irving van Vliet l s	*Menomonie*
Hanson, Otto Ludwig l s	*Chippewa Falls*
Hartwig, Douglas Ferdinand l s	*Watertown*
Jackman, Johnston Charles l s	*Madison*
Johnson, Russell Martin l s	*Madison*
Jones, Merritt LaCount l s	*Wausau*
Nickson, Delbert Harry l s	*Platteville*
Nuzum, John Weston l s	*Janesville*
Rietz, Walter Herman l s	*Manitowoc*
Sansum, William David l s	*Baraboo*
Schroeder, Ernest Leonard l s	*Shawano*
Schuldt, Clarence M. l s	*Platteville*
Townsend, DeWayne l s	*Oconomowoc*
Weigen, Anders Johann l s	*Sun Prairie*
Williams, Arthur Joseph l s	*Waukesha*

—22

First Year

Beyer, Theodore Ernest g	*Milwaukee*
Boulware, Judson Powell l s	*Eminence, Ky.*
Brown, Damon Alonzo l s	*Spring Green*
Bumpus, Hermon Carey, Ph B., g	*Madison*
Bundy, Harry Eugene l s	*Milwaukee*
Carter, Homer McClelland, B. A., g	*Madison*
Crile, Dennis Rider Wood l s	*Roswell, N. M.*
Drips, Della Gay, B. A.	*Madison*
Dutton, Frederick Gary l s	*Green Bay*
Dyar, Edna Gerrish l s	*Madison*
Eckstein, John William l s	*Madison*
Freund, Carl l s	*Belvidere, Ill.*
Gunderson, Nordahl Osmund l s	*Stoughton*

H'Doubler, Francis Todd, Ph. D.	*Madison*
Hickman, John Samuel l s	*Madison*
Kjellgren, Blenda Louise, B. A.,	*Rockford, Ill.*
Koch, Vincent William l s	*Janesville*
Kolls, Alfred Conrad l s	*La Crosse*
Leonard, Eugene Thomas, B. A.,	*Hollandale*
Lewis, Paul John l s	*Bloomington*
McCormick, Jay Harry l s	*Soldiers Grove*
Marek, Frank Benjamin l s	*Cadott*
Menne, Frank Raymond l s	*Eden*
Moe, Harry Bugge l s	*McFarland*
Newcomer, Harry Sidney M. A., g	*Madison*
Prees, Reginald Lloyd l s	*Cambria*
Ravn, Erling Oscar l s	*Merrill*
Robbins, George Hiram l s	*Milwaukee*
Rose, Milton Edward l s	*Dubuque, Ia*
Ruka, Emil Albert l s	*Boscobel*
Scully, Frank Joseph l s	*Bottineau, N. D.*
Sivyer, Allen Walters l s	*Milwaukee*
Taylor, William Amory l s	*Portage*
Werlich, Richard Eugene l s	*Weston*
Winter, Otto Louis, B. A.,	*River Falls*

—35

Course in Public Health

Brereton, Gilbert Elliott g, m	*Madison*
Geidel, Carl Diedrich g	*Madison*
McShane, John James g	*Madison*

—3

COURSE IN PHARMACY

FOUR YEAR COURSE

Burns, Walter Clement	*Oakfield*	Senior
Elwers, George Ernest	*Neenah*	Sophomore
Hanson, James	*Sturgeon Bay*	Junior
Hoel, Archie Bernhard	*Menomonie*	Freshman
Hoffman, Frank Joseph	*Tigerton*	Freshman
Langenhan, Henry August	*Ablemans*	Junior
McCrory, Walter	*Milwaukee*	Junior
McGowan, Ray Elmer	*Milton Jct.*	Senior
Mueller, Norbert Robert	*Princeton*	Sophomore
Pfeiler, Reuben	*Sheboygan*	Sophomore
Reardon, Ronald Sheridan	*Rhinelander*	Freshman
Tuft, Harry William	*Sharon*	Junior

—12

TWO YEAR COURSE

Abel, Albert	*Manitowoc*	First year
Berg, John B.	*Mondovi*	Second year
Boberg, Edwin John	*Eau Claire*	Second year
Culbertson, Joseph Raymond	*Madison*	First year
Dahl, Paul Andrew	*Viroqua*	First year
Federer, Francis Albert	*Waukesha*	First year
Feit, Victor Emanuel	*Amery*	Second year
Freese, Dorrance	*Jamestown, N. D.*	First year
Gruhl, Oscar	*Milwaukee*	Second year
Hammersley, Henry Waite	*Lake Geneva*	First year
Haried, Clarence Johan	*Stoughton*	First year
Hilton, Anne Dorothy	*Socorro, N. M.*	First year
Kepke, Frederick William	*Madison*	Second year
Krueger, Ella Diana	*Westfield*	Second year
McHenry, John Augustus	*Bayfield*	Second year
O'Brien, John Edward	*Randolph*	Second year
Olson, Louis	*Hayward*	Second year
Pinch, Gerrie Johnathan	*Hillsboro*	Second year
Rabak, William	*Webster, S. D.*	First year
Reese, Oliver Brutus	*Spring Green*	First year
Reif, Herman Peter	*Madison*	Second year
Rennbohm, Fred	*Milwaukee*	First year
Rudolph, Earl Vilas	*Antigo*	Second year
Sinclair, Stella Linita	*Dundee, Ill.*	First year
Street, Bernard John	*Waupaca*	First year
Wachler, Edward Francis	*Randolph*	Second year

—26

COLLEGE OF ENGINEERING

SENIORS

Algeo, Harold Leigh	*Chicago, Ill.*	C. E.
Ankeney, Stewart Hill	*Madison*	C. E.
Badger, Arthur Hewitt	*Madison*	E. E.
Barclay, Arthur Jackson	*Madison*	C. E.
Barnum, Charles Treadway	*Wilkes Barre, Pa.*	M. E.
Bendt, Joseph Philip	*Kenosha*	C. E.
Bennett, Charles Edwin	*Ft. Collins, Colo.*	M. E.
Best, Paul Butler	*Oak Park, Ill.*	E. E.
Bischel, Joseph Michel	*Bloomer (Adv. Course)*	C. E.
Bleyer, Addison Milton	*Madison*	M. E.
Bleyer, Lloyd Garrison	*Milwaukee*	M. E.
Blomeyer, Roscoe Stanhope	*Milwaukee*	C. E.
Braasch, Frederick William	*Sheboygan*	M. E.
Bradish, Charles Bresee	*La Crosse*	E. E.

Branstad, Richard Eugene	*Eau Claire*	C. E
Browning, Elmer Ellsworth Jr.	*Milwaukee*	E. E.
Carus, Edward Hegeler	*La Salle, Ill.*	Ch. E.
Chuchian, Avedis Askanaz Melkon	*Armenia, Turkey, (Adv. Course)*	C. E.
Cortelyou, Townsend	*Brodhead*	C. E.
Coup, Fred Thomas	*Madison (Adv. Course)*	E. E.
Damm, Paul Emil	*Madison*	E. E.
Damon, William Henry	*Madison*	E. E.
Davis, Rowland George	*Milwaukee*	E. E.
Dillon, Carl Duncan	*Madison*	C. E
Distelhorst, Charles Andrew Robert	*Dorchester*	C. E.
Doerschuk, Herbert Marion	*Shanesville, O.*	E. E.
Dorr George Nickoli	*Stoughton*	M. E.
Dunnewald, Paul Wilterding	*Madison*	C. E.
Ely, Alexander White	*Edgerton*	C. E.
Enders, William Jacob	*Marinette*	E. E.
Esau, George Walter	*Milwaukee*	Ch. E.
Fehlandt, William Louis	*Madison*	C. E.
Fellows, Kenneth Elbert	*Lodi*	C. E.
Fess, Perry Thomas	*Madison*	C. E.
Fowler, William Oliver	*Humbird*	C. E.
Fraser, John Jr.	*Milwaukee*	M. E.
Fuller, Judson Earl	*Oak Park, Ill.*	M. E.
Gaskell, Charles James	*Baraboo*	M. E.
Graetz, Walter Carl	*Milwaukee*	E. E.
Griffith, William Henry	*Toledo, O.*	C. E.
Hart, Ray Weston	*Madison (Adv. Course)*	C. E.
Harwick, Guy Duval	*Madison*	E. E.
Hathaway, Warner	*Beaver Dam*	M. E.
Head, Clarence Eugene	*Kenosha*	M. E.
Henningsen, Earle Stanley	*Oakfield*	E. E.
Hewit, Earle John	*Nashotah*	C. E.
Himmelstein, Arthur Lewis	*Milwaukee*	C. E.
Hoffman, Eugene Robert	*Ellensburg, Wash.*	C. E.
Holbrook, Henry Edwin	*Madison*	Ch. E.
Holverscheid, Erwin	*Hinsdale, Ill.*	M. E.
Horstkotte, Edward Henry	*Ellsworth*	E. E.
Hubbell, Frederick Augustus	*Madison*	C. E.
Jacobson, Carl Joseph	*Elkhorn*	M. E.
Jamieson, John Rodney	*Poynette*	C. E.
Keller, Roy Avery	*Ohio City, O.*	E. E.
Kellogg, Rufus Henry	*Green Bay*	M. E.
Kietzman, William Arthur	*Eau Claire*	E. E.
Kirch, Charles Hugo	*Mazomanie*	C. E.
Kozarek, Steven Aloizy	*Antigo*	C. E.
Krell, Samuel Arthur	*Madison (Adv. Course)*	C. E.

Kroening, Ralph Henry	*Milwaukee*	C. E.
Kwank, Bang	*Chin Kiang, China*	C. E.
Larsen, Robert Leonard	*Madison*	M. E.
Markwardt, Lorraine Joseph	*Madison*	C. E.
Mears, George Sherman	*Fond du Lac*	C. E.
Meinicke, Ferdinand Jr.	*Milwaukee (Adv. Course)*	Min. E.
Merkel, Richard Hans	*Sauk City*	C. E.
Moyer, William David	*Grand Rapids*	M. E.
Newbury, Robert Charles	*Waukesha*	E. E.
Norris, Lucius Allen	*Elkhorn (Adv. Course)*	E. E.
Osann, Norman	*Oak Park, Ill.*	E. E.
Page, Harry Allen	*Prairie du Sac*	M. E.
Palmatier, Horace Potter	*Madison*	E. E.
Parks, Rollin Robert	*Fredonia*	E. E.
Peterson, Orrin Peter	*Madison (Adv. Course)*	Min. E.
Phelps, Marion A.	*Albany*	M. E.
Pickard, Arthur Edward	*Chicago, Ill.*	M. E.
Pope, Arthur Charles	*Madison*	Ch. E.
Porter, James William	*Elkhorn*	M. E.
Prochazka, Henry Charles	*Manitowoc*	M. E.
Quast, Adolph William	*Madison*	M. E.
Reilly, Thomas William	*Port Washington*	C. E.
Reynolds, Thomas Myrick	*Milwaukee*	C. E.
Richter, Oscar Arthur	*Manitowoc*	M. E.
Rogers, Howard Herbert	*Oak Park, Ill.*	Ch. E.
Roth, William Arthur	*Monroe*	M. E.
Ruhloff, Frederick Carl	*Milwaukee*	M. E.
Rumely, Vincent Philip	*La Porte, Ind.*	M. E.
Rust, Thomas H.	*Eau Claire*	C. E.
Scherer, Harold Lester	*Milwaukee*	M. E.
Schieber, Oliver Jay	*Los Angeles, Cal. (Adv. Course)*	C. E.
Schilling, Walter William	*Green Bay*	C. E.
Schneider, Martin Peter	*Madison*	C. E.
Schroeder, George Edward	*Augusta*	C. E.
Shape, Alfred Charles	*Milwaukee*	Ch. E.
Sheriff, Frederick Beby	*Helena, Mont.*	M. E.
Shonat, Archie	*Madison*	C. E.
Simons, Richard Wharton	*Chicago, Ill. (Adv. Course)*	E. E.
Slade, John Lathrop	*Hinsdale, Ill.*	M. E.
Smith, Chauncey Lester	*Waukesha*	C. E.
Smith, Frederick Slocum Howland	*Janesville*	C. E.
Smith, Leon Albert	*Madison*	C. E.
Soergel, Robert John	*Milwaukee*	C. E.
Spray, Lester Ellsworth	*Lawrence, Kans. (Adv. Course)*	E. E.
Staehle, Paul Max	*Manitowoc*	E. E.

Stengl, Rudolph John	*Antigo*	Min. E.
Strothmann, Oliver Ernst	*Milwaukee*	M. E.
Sturgeon, Edward Tyler	*Madison*	C. E.
Trayer, George William	*Madison*	C. E.
Veerhusen, Herman Helm	*Madison (Adv. Course)*	C. E.
Vroman, Harry Westrope	*Verona*	C. E.
Wade, John Cedric	*Muscoda*	C. E.
Waltenberg, Romaine George	*Madison (Adv. Course)*	Ch. E.
Ward, Oscar Gardien Jr.	*Fond du Lac*	M. E.
Warth, Edward Christian	*Milwaukee*	E. E.
Wasson, Joseph Houston	*Madison*	C. E.
Waterman, Ivan Frederic	*DeLand, Fla.*	C. E.
Watkins Robert Marsh	*Milwaukee*	M. E.
Week, Erling Finch	*Spokane, Wash.*	M. E.
Wiedenbeck, Harry John	*Mauston*	C. E.
Wile, Harold Davidson	*Chicago, Ill.*	E. E.
Willmore, Howson Edward	*Waukegan, Ill.*	E. E.
Wiskocil, Clement Tehle	*Milwaukee*	C. E.
Wolfe, John Henry Louis	*Keokuk, Ia.*	Ch. E.
Wolff, Werner Peter	*Cumberland*	Min. E.
Woolhiser, Herbert Ladue	*Whitewater (Adv. Course)*	E. E.
Yu, Liang	*Shanghai, China*	C. E.
Zimmerman, Fred Russell	*Madison*	M. E.

—128

JUNIORS

Abernathy, James Logan	*Kansas City, Mo.*	E. E.
Alaniva, Charles Robert	*Lead, S. D.*	Min. E.
Anderson, Earl Ando	*Hitchcock, S. D.*	E. E.
Arps, Edmund John	*New Holstein*	E. E.
Bacon, Vaughan Robert	*Omaha, Neb.*	E. E.
Bainbridge, Walter L.	*Platteville*	Ch. E.
Ballard, Roscoe Frederick	*Milwaukee*	M. E.
Becker, Dean Brown	*Ft. Atkinson*	Ch. E.
Beebe, Gordon Alcott	*Beloit*	C. E.
Bernauer, Raymond Otto	*Fredonia, Kans.*	M. E.
Bliss, William Desmond	*Wauwatosa*	Ch. E.
Blodgett, Charles Wallace	*Green Bay*	C. E.
Bockelmann, Bernhardt Jacob	*Milwaukee*	C. E.
Boissard, Richard	*Madison (Adv. Course)*	E. E.
Bolt, Walter Charles	*Milwaukee*	E. E.
Borchert, Raymond Charles	*Milwaukee*	E. E.
Borchsenius, Harold	*Madison*	Min. E.
Brady, Laban Jenkins	*El Reno, Okla.*	M. E.
Brintnall, Percy Cosson	*Kalispell, Mont.*	Min. E.
Buettell, Roger Bross	*Madison*	C. E.
Butler, Walter Glynn	*Montello*	C. E.
Buxton, Vernon Roy	*Spooner*	E. E.

Cahill, Ralph Hughes	*Milwaukee*	C. E.
Carpenter, William Spencer	*Menominee, Mich.*	Min. E.
Chandler, Milton Evans	*Racine*	M. E.
Charlesworth, Frank Manly	*Kaukauna*	C. E.
Childs, Leonard Chapin	*Oak Park, Ill.*	C. E.
Christensen, Adolphus Eugene	*Madison*	C. E.
Chritzman, George Moffitt	*Madison*	E. E.
Cobb, Arthur Jr.	*Madison*	C. E.
Consoer, Arthur William	*Oak Park, Ill.*	C. E.
Corbett, Richard Adkins	*National Home*	M. E.
Corner, Douglas Colvert	*Platteville*	Min. E.
Culbertson, Linn Nicolls	*St. Louis, Mo.*	C. E.
Decker, Ramsey Prescott	*West DePere*	E. E.
Diaz, Juan Garcia	*Ponce, P. R.*	M. E.
Diehl, Albert Rudolph	*Madison*	C. E.
Dodd, Roy Lyon	*Milwaukee*	E. E.
Dressendorfer, Arthur Emil	*Madison*	M. E.
Drew, Howard Stebbins	*Chicago, Ill.*	E. E.
Drew, Robert Stebbins	*Chicago, Ill.*	C. E.
Engsberg, Ralph William	*Lake Mills*	E. E.
Epstein, William Carl	*Madison*	M. E.
Erickson, Kenneth William	*Racine*	Ch. E.
Evans, Melvin James	*Riverside, Ill.*	M. E.
Findeisen, Carl Raymond	*Green Bay*	E. E.
Fitch, William Kountz	*Rockford, Ill. (Adv. Course)*	M. E.
Fraser, Erwin Miles	*Milwaukee*	M. E.
Frost, Arthur Henry Jr.	*Rockford, Ill.*	Ch. E.
George, Marshall Woods	*Chicago, Ill.*	M. E.
Gillette, Edmond Stephen	*Aurora, Ill. (Adv. Course)*	M. E.
Gilman, Edgar Dow	*Madison*	Ch. E.
Goodland, Rudyard Lewis	*Racine*	Min. E.
Greenwood, Donald W.	*Madison*	C. E.
Gregory, Stephen Strong	*Chicago, Ill. (Adv. Course)*	M. E.
Grimmer, Edwin Wolsey	*St. Louis, Mo.*	C. E.
Grotewohl, Laurence Appelman	*Hartley, Ia.*	E. E.
Halladay, Franklin Stanley	*Plover*	C. E.
Hardie, Augustus Brunner	*Madison*	M. E.
Harrison, Herbert Stanley	*La Crosse*	E. E.
Hawkins, Burton Hynard	*Tunnel City*	M. E.
Hawthorne, Guy Edwin	*Monroe*	M. E.
Heimbach, Elbert Blaine	*Honey Creek*	E. E.
Hendee, Ceilan Abner	*Milwaukee*	E. E.
Hitt, William Mayo	*Racine*	E. E.
Hopkins, William Thompson	*Madison*	C. E.
Horn, Frederic William	*Cedarburg*	M. E.
Hughes, Robert Davis	*Dayton, O.*	C. E.
Isabella, Nicholas Michael	*Spooner*	C. E.

Jacob, Elmer Acred	*Madison*	C. E.
Johns, Frank Wickizer	*Lake City, Minn. (Adv. Course)*	C. E.
Johnson, Robert Hiram	*Galesburg, Ill. (Adv. Course)*	E. E.
Jones, Louis Dewitt	*Waukegan, Ill.*	C. E.
Jones, Richard Henry	*Janesville*	E. E.
Keene, Alvin Dewayne	*Leon*	E. E.
Kehrmann, Rolla	*Bonne Terre, Mo.*	Min. E.
Kelm, Alfred Carl	*Fairibault, Minn.*	E. E.
Kimball, John Thoroughgood	*Madison*	E. E.
King, Ralph Siemens	*Madison*	C. E.
Kleck, Carl Frederick	*Milwaukee*	Min. E.
Korst, Philip Burch	*Janesville*	M. E.
Kuhns, George Roland	*Madison*	E. E.
Kunesh, Joseph Francis	*Stangelville*	C. E.
Lake, Mack Clayton	*Brodhead*	Min. E.
Lampert, Benjamin Harrison	*Oshkosh*	C. E.
Langworthy, Edward Phelps	*Chicago, Ill.*	M. E.
Larsen, Herman	*La Crosse*	C. E.
Li, Ming-ho	*Nanking, China (Adv. Course)*	Ch. E.
Lillard, Paul	*Bloomington, Ill.*	C. E.
Livingston, John Kingsley	*Madison (Adv. Course)*	E. E.
Louret, Harry Aoraham	*Madison*	E. E.
Lowry, Lellis Lloyd	*Cresco, Ia.*	C. E.
Lucas, Frank Blackburn	*Brownsville, Texas*	Ch. E.
Luckey, Carroll Hastings	*Madison*	C. E.
Lynch, Harry Claude	*Independence, Ia.*	C. E.
McEachran, Wilbur Hugh	*Rockford, Ill.*	M. E.
McFarland, Malcolm Fizer	*Keokuk, Ia.*	C. E.
McIntosh, Fabian Clifton	*Bradford, Pa.*	C. E.
McLean, James Calvin	*Waukesha*	C. E.
McMurray, William Matthew	*Madison (Adv. Course)*	Min. E.
Manegold, John Robert	*Milwaukee*	E. E.
Mereness, Harry Elmer	*Elkhorn*	C. E.
Miller, Jesse Eugene	*Brodhead*	E. E.
Moody, Ralph Edmund	*Madison*	E. E.
Morgan, Everette Kellogg	*Madison*	M. E.
Nickel, Walter Frederick	*Butte, Mont.*	C. E.
Noyes, Eugene Carter	*Marinette*	C. E.
Peter, Albert George	*Milwaukee*	M. E.
Probert, Samuel Harold	*Madison*	C. E.
Rakow, Clarence Leslie	*Eau Claire*	E. E.
Ray, John Murray t c	*Madison*	C. E.
Reber, Louis Ehrhart Jr.	*Madison*	C. E.
Reid, Bryan Seaborne	*Ashland*	Min. E.
Rosenkrans, Floyd McKee	*Oconomowoc*	E. E.
Rosenow, Ernst Eric	*Menasha*	M. E.

Ross, Edmund	*Albuquerque, N. M. (Adv. Course)*	Min. E.
Rule, Elmer	*Linden*	E. E.
Schecter, Samuel	*Madison*	C. E.
Schleck, Walter Hubert	*South Milwaukee*	M. E.
Schneider, Andrew George	*Madison*	Ch. E.
Seifert, Andrew	*Milwaukee*	C. E.
Sheriffs, Walter Alexander	*Madison*	Min. E.
Shu, Seng Jah	*Kwei-yan, China (Adv. Course)*	M. E.
Simon, Albert Henry	*Ashland*	C. E.
Sjoblom, Maurice Charles	*Grantsburg*	C. E.
Smart, Orren David	*Waukesha*	M. E.
Smith, Robert Matthew	*Madison*	C. E
Solberg, Arthur Leroy	*Beloit*	M. E.
Sperry, Carleton Dexter	*Phillips (Adv. Course)*	M. E.
Stapleton, Leonard Edward	*Watertown*	C. E.
Steinberg, William Harrison	*North Freedom*	Ch. E.
Stephany, Erwin John	*Manitowoc*	M. E.
Stiles, Robert Lincoln	*Milwaukee*	E. E.
Stivers, Charles Paul Jr.	*Madison*	C. E.
Stoddard, Leroy Lester	*Platteville*	E. E.
Stoelting Hugo Herbert	*Oconto*	E. E.
Tack, Myron Anthony	*Marshfield*	C. E.
Talbot, Ray George	*Sparta*	M. E.
Textor, Clinton Kenney	*Milwaukee (Adv. Course)*	Ch. E.
Thomas, Charles Randolph	*New Bern, N. C.*	C. E.
Vaughan, Courtland DeLano	*Denver, Colo.*	C. E.
Vivian, Glenn Fish	*Chicago, Ill.*	C. E.
Volquarts, Victor Henry	*Madison*	M. E.
Wahl, Arnold Spencer	*Evanston, Ill.*	Ch. E.
Walter, Jay Douglas	*Berlin*	E. E.
Welser, George Brinton Jr.	*Milwaukee*	M. E.
Whitney, Edward Nelson	*Madison*	C. E.
Whomes, Walter Dewit	*Madison*	E. E.
Withington, Arthur Harding	*Baraboo*	C. E.
Wonders, Samuel Driscoll	*Bellefontaine, O.*	C. E.
Woo, Chang	*Canton, China*	Ch. E.
Wright, Leon Alton	*Delavan*	E. E.
Würdemann, Converse	*Madison*	Min. E.

—153

SOPHOMORES

Adlington, Earl Raymond	*Viroqua*	E. E.
Alter, Fred Leland	*Manitowoc*	C. E.
Arnemann, George Elmer	*Two Rivers*	E. E.
Baker, George Herbert	*Marshfield*	C. E.
Barbour, Curtiss Munroe	*Berkeley, Cal.*	M. E.

Baumgartner, William Frederick	*Pensaukee*	C. E.
Bell, Laurence	*Madison*	Ch. E.
Benet, Hugh	*Madison*	M. E.
Bergmann, Henry Ernest	*Milwaukee*	E. E.
Best, Byron Gray	*Ironwood, Mich.*	Min. E.
Bickelhaupt, Ivan Adair	*Aberdeen, S. D.*	M. E.
Bixby, James Orr	*Madison*	M. E.
Bloecher, Walter Philip	*Carlestadt, N. J.*	C. E.
Bradley, Charles Harlow	*Milwaukee (Adv. Course)*	Ch. E.
Brandel, Wallace Lester	*Milwaukee*	E. E.
Brant, Charles William	*Madison*	C. E.
Breit, Charles	*Waupaca*	M. E.
Broders, Claude Emil	*Marshfield*	E. E.
Buelow, Paul Edward	*South Kaukauna*	M. E.
Burke, Kenneth Richard	*Manitowoc*	Ch. E.
Butz, Charles Harold	*Mazomanie (Adv. Course)*	E. E.
Carnes, William Eugene	*Watertown, N. Y.*	C. E.
Carpenter, Russell Hand	*Racine*	M. E.
Chamison, Hyman	*Lead, S. D.*	E. E.
Chang. Moshih Y.	*Ningpo, China (Adv. Course)*	E. E.
Clark, Henry Wesley	*Niagara Falls, N. Y.*	C. E.
Clas, Rubens Frederick	*Milwaukee*	C. E.
Cobaugh, Harry Augustus	*Washington, D. C.*	C. E.
Collard, Justus Clark	*Red, Oak, Ia.*	E. E.
Conaway, Willard Green	*Warren, Pa. (Adv. Course)*	E. E.
Conklin, Eugene Arthur	*Roslyn, L. I.*	Min. E.
Connolly, George Henry	*Racine*	C. E.
Cook, Maynard Albert	*Alma, Mich.*	M. E.
Cooley, Gilbert Stanley	*Chicago, Ill.*	M. E.
Cooper, Fennimore	*Milwaukee*	C. E.
Corley, John Scripps	*Des Moines, Ia.*	M. E.
Cowin, Leo Vivian	*Horicon*	M. E.
Cox, Ernest John	*Stanley*	C. E.
Cummins, James Albert	*Des Moines, Ia.*	M. E.
Das Gupta, Birend, Nath	*Bengal, India (Adv. Course)*	E. E.
Dass, Banesvar	*Panapore, Malda, India*	Ch. E.
Davis, Lloyd Edward	*Red Granite*	C. E.
Davy, Francis Joseph	*Madison*	C. E.
Dexheimer, Earl Chambers	*Ft. Atkinson (Adv. Course)*	Ch. E.
Ebersole, Charles David	*Sterling, Ill.*	E. E.
Elderkin, Paul Nathan	*Madison*	E. E.
Eleazarian, Aram Moses	*Madison*	E. E.
Ellsworth, Charles West	*Escanaba, Mich.*	C. E.
Emerson, Ernest Willett	*Pewaukee*	E. E.
Farrand, Ira William	*Galesville*	Min. E.
Feiler, William Revel	*Evanston, Ill.*	M. E.

Ferry, Phillips Barlow	*Milwaukee*	M. E.
Fisher, Glenn Bailey	*Janesville*	C. E.
Fisher, Herbert Charles	*Beaver Dam*	C. E.
Fletcher, Freeman Douglass	*Morrison, Ill.*	M. E.
Gehrmann, John Henry	*Davenport, Ia. (Adv. Course)*	Ch. E.
Gettelman, William Fredrick	*Madison*	C. E.
Goss, William Azell	*La Grange, Ill.*	Min. E.
Grenfell, Donald Stuart	*Madison (Adv. Course)*	Ch. E.
Griswold, John William	*West Salem*	M. E.
Grotophorst, Carl	*Plain*	C. E.
Gruetzmacher, Clarence Saylor	*Milwaukee*	C. E.
Haley, Harold Joseph	*Watertown, N. Y.*	C. E.
Harker, Harvey Merton	*Madison*	Ch. E.
Harries, Harry George	*Milwaukee*	Ch. E.
Henze, Henry Carl	*Iron Mountain, Mich.*	C. E.
Hinckley, Arthur John	*Madison*	M. E.
Hoffman, Leslie Carl	*Waterloo*	E. E.
Houghton, Samuel L.	*Chicago, Ill.*	Min. E.
Houston, MacLean	*San Antonio, Texas*	E. E.
Jacobus, John Anton	*Deer Brook*	M. E.
Jahns, Edward Julius	*Fair Water*	C. E.
James, Herbert Hanna	*Pittsburg, Pa.*	Ch. E.
Johnson, Edward George	*Chicago, Ill.*	E. E.
Johnson, John Franklin	*Muskogee, Okla.*	E. E.
Kline, Mathew Joseph	*South Kaukauna (Adv. Course)*	C. E.
Klotsch, Karl William	*Appleton*	Ch. E.
Knoll, Waldemar Arthur	*Milwaukee*	Min. E.
Krey, Frank Frederick	*Milwaukee*	Min. E.
Krueger, Ferdinand Henry	*Milwaukee*	C. E.
Krueger, Forrest Julius	*Madison*	E. E.
Lacey, William Randolph	*Madison (Adv. Course)*	Ch. E.
Ladon, Aaron Arthur	*Monroe*	Ch. E.
Lange, Ernest Otto	*Fond du Lac*	E. E.
McLaren, Lewis Lachlan	*Joliet, Ill.*	M. E.
Macnish, George Gaylord	*Stevens Point*	E. E.
Malone, Edward Heber	*Waukesha*	C. E.
Manley, Earl Palmer	*Lake Geneva*	C. E.
Marshall, Harry Alexander	*East Troy*	C. E.
Maurer, Rolland Edward	*Madison*	C. E.
May, Phillip Willard	*Madison*	M. E.
Meisekothen, Robert John	*Madison*	E. E.
Miller, William Frederick	*Madison*	M. E.
Moe, Olaf Rudolph	*Pensaukee (Adv. Course)*	C. E.
Millspaugh, John Wheeler	*Milwaukee (Adv. Course)*	E. E.
Morgan, William Richard	*Oshkosh*	C. E.
Morris, Leslie Roslyn	*Madison*	C. E.

Mulholland, William Martin	*Buffalo, Wyo.*	C. E.
Olson, Carl	*Rhinelander*	Min. E.
Olson, Clifton Anton	*Cornell (Adv. Course)*	E. E.
Osterheld, Clark McKinney	*Stoughton (Adv. Course)*	E. E.
Paine, Paul Milton	*New Holstein*	C. E.
Poston, Virgil	*Bonne Terre, Mo.*	E. E.
Powell, Archie Eisenhower	*Lake Wilson, Minn. (Adv. Course)*	E. E.
Purchas, Robert Thorsen	*London, England (Adv. Course)*	E. E.
Rather, Maxmilian Frederic	*Shawano*	C. E.
Redel, Paul Louis	*Milwaukee*	Ch. E.
Reed, Melbourne Ovid	*Darien*	E. E.
Replinger, Roy Lodawick	*Madison*	E. E.
Rinehimer, Charles Albert	*Elgin, Ill.*	E. E.
Rovelstad, Odin Peter	*Elgin, Ill.*	E. E.
Ryan, Edmund	*Madison*	E. E.
Sackerson Edwin Axel	*Iron Mountain, Mich.*	C. E.
Sagen, Edward Rohr	*Centerville, S. D.*	M. E.
Schaus, Walter Peter George	*Milwaukee*	E. E.
Schmidt, Erwin John	*Milwaukee*	C. E.
Schmidt, Frederick Julius	*Milwaukee*	E. E.
Schmitt, Herbert Clarence	*Milwaukee*	C. E.
Schneider, William Joseph	*La Crosse*	C. E.
Schroeder, Eric George	*Milwaukee*	C. E.
Scoles, John Calvert	*Granton (Adv. Course)*	Min. E.
Sewall, Fred Alexander	*Racine*	M. E.
Shafer, Clifford Bernard	*Muscoda*	C. E.
Sipp, Edward Arden	*Watertown*	E. E.
Smith, Edward King	*Beloit (Adv. Course)*	C. E.
Steere, Maynard Joseph	*Dayton, Mont.*	C. E.
Steiner, Ora Clarence	*Orrville, Ohio*	M. E.
Stevens, Berry Thane	*Chicago, Ill.*	M. E.
Strand, Loyd Mabie	*Mellen*	E. E.
Swanson, Earl Grover Leonard	*Chicago, Ill.*	C. E.
Swartz, John William	*Genoa Junction*	C. E.
Sweet, Ben Frank	*Fond du Lac*	M. E.
Teschan, Erhard Gilbert	*Milwaukee*	M. E.
Theobald, Jesse Edward	*Madison*	Min. E.
Thomas, Edward Francis	*Pewaukee*	E. E.
Thompson, Harold Montrose	*Madison*	C. E.
Thwaits, Frederick George	*Milwaukee*	C. E.
Tolhurst, William Henry	*Madison*	E. E.
Walters, Harry George	*Milwaukee*	E. E.
Warren, Rupert Leon	*Milwaukee*	C. E.
Wells, Grant Robert	*Oakfield*	E. E.
Wesle, Herbert William	*Medford*	C. E.
West, John Ralph	*Loda, Ill.*	C. E.

Wheeler, Charles Edward	*Milwaukee*	E. E.
Wheeler, Francis Foss	*Milwaukee*	Min. E.
Williams, Verle Eynon	*Phillips*	E. E.
Wilson, Edward Everett	*Linnton, Ore.*	M. E.
Winkle, Howard Franklin	*Portage*	M. E.
Witt, Edward Oscar	*Marshfield*	C. E.
Wolverton, Fred Melville	*Oshkosh*	Min. E.
Wood, Harold Paul	*Madison*	C. E.
Young, John Ward	*La Crosse*	E. E.
Yunger, Joseph William	*Ashland*	Ch. E.
Zabel, Harold Frederick	*Sharon*	Ch. E.
Zeasman, Otto Remhardt	*Norrie*	M. E.

—155

FRESHMEN

Agazim, Michael	*Chicago, Ill.*
Albert, Arthur Robert	*Horicon*
Anderson, Bert Edwin	*Rockford, Ill.*
Anderson, Harold Gilbert	*Whitewater.*
Armour, Phillips Fletcher	*Rockford, Ill.*
Ayers, Albert Owen	*Sheldon, Ia.*
Bartenbach, Walter Levi	*Ableman*
Bartlett, Harry Owen	*Eau Claire*
Basey, James Dodson	*Portland, Ore.*
Bauer, Harry Edward	*Fort Atkinson*
Bemis, Edwin Loren	*Milwaukee*
Bemis, Walter Sargent *(Adv. Course)*	*New York City*
Berg, Theodore Melvin	*Chicago, Ill.*
Bickel, Ferdinand DeWitt *(Adv. Course)*	*Beloit*
Blain, John Harvey	*El Paso, Texas*
Blair, Walter Frank	*Waukesha*
Blanding, George Harvey	*Racine*
Blatz, Valentine *(Adv. Course)*	*Milwaukee*
Blomeyer, Harris Pheifer	*Chattanooga, Tenn.*
Boehmer, Harold Richards	*Indianapolis, Ind.*
Boerner, Eugene Sonnenberg	*Cedarburg*
Bohn, Clarence Robert	*Lime Ridge*
Bond, Milton	*Mondovi*
Boorse, Arthur Lee	*Milwaukee*
Boylston, John William	*Chicago, Ill.*
Bragg, Kendal Benjamin *(Adv. Course)*	*Evanston, Ill.*
Brannan, Sylvester Antonio	*Jackson, Nebr.*
Brasted, Daniel Benjamin	*Waukesha*
Breckenridge, William Lewis Jr.	*Chicago, Ill.*
Brown, Clifton Martin	*Rockford, Ill.*
Bruce, Edwin Lawson Jr.	*Kansas City, Mo.*
Burger, Edward	*Texarkana, Texas.*
Butler, Charles	*Virginia, Minn.*

Butler, Mifflin Morrison	*Casper, Wyo.*
Carey, Sherman Milton	*Genoa Junction*
Carpenter, Milton Josiah	*Milwaukee*
Carroll, Charles Patrick	*Chippewa Falls*
Case, Archibald Williston	*Havana, Cuba*
Casey, Thomas Bernard	*Chicago, Ill.*
Cavanaugh, Raymond Thomas	*Watertown, N. Y.*
Chambers, Karl Dumas	*Prairie du Chien*
Christiansen, Clarence John	*Grand Rapids*
Clancy, John Francis	*East Troy*
Clarke, Edith *(Adv. Course)*	*Ellicot City, Md.*
Clayton, Hoy Benjamin	*Monroe*
Coddington, Paul	*North Milwaukee*
Colburn, Romeo Hoyt	*Chippewa Falls*
Collentine, Ralph John	*Monroe*
Connell, Edward Joseph *(Adv. Course)*	*Beloit*
Conrad, Cuthbert Powell	*Kansas City, Mo.*
Conrow, Clyde Howard	*Whitehall*
Coon, P. Cordon William *(Adv. Course)*	*Mankato, Minn.*
Cornish, Myron	*Oak Park, Ill.*
Crowell, Joseph Addison Jr.	*Iron Mountain, Mich.*
Crump, Arthur Wilson	*Lake Mills*
Curtis, Lloyd Eldridge	*Janesville*
Curts, Harry John *(Adv. Course)*	*Carthage, Ill.*
Dargan, William Venuste	*Columbus*
Davis, Gladstone Blaine	*Geneva, Ill.*
Dewey Robert Sabin *(Adv. Course)*	*Denver, Col.*
Dickson, Hunter Adam	*Chicago, Ill.*
Doeringsfeld, Harry August	*Boscobel*
Dostal, Casimir Frank	*Racine*
Downey, Frank Edward	*Milwaukee*
Drath, Wilfred Herman	*Kenosha*
Duke, John Logan	*Madison*
Dustin, Hubert Miles	*Stratford*
Edmonds, Charles Crawford	*Madison*
Edwards, John Boardman	*Milwaukee*
Eisele, Lewis George	*Iron Mountain, Mich.*
Elder, Neal	*Tacoma, Wash.*
Fieweger, Thomas Edward	*Oshkosh*
Finley, Ralph Hinkle	*Batavia, Ill.*
Fiske, George Kendrick	*Waterloo*
Flugstad, Jorgen	*Westby*
Frater, Will Hoyt	*Elkhorn*
Froggatt, Edward James	*Middleton*
Fromm, Edward William	*Milwaukee*
Fuller, Howard Rowson	*Madison*
Gallagher, Roy Dale	*Hammond, La.*
Gamble, Raleigh Welch	*Chicago, Ill.*

Gerding, Rudolph Wendelin	*Chicago, Ill.*
Gesell, Walter Bertram	*La Crosse*
Gillett, James Monroe	*Madison*
Girard, Lamont Earle	*Edgerton*
Glaspell, Dean Watson	*Chicago, Ill.*
Goldie, William Bradshaw	*Milwaukee*
Goldsmith, Elmer Le Grand *(Adv. Course)*	*Milwaukee*
Grambsch, Rinold Herman	*Poy Sippi*
Gray, Gaylord Edward	*Des Moines, Ia.*
Griem, Harvey	*New Holstein*
Griswold, George Robert	*Madison*
Hackett, Carrol Eugene	*Fort Atkinson*
Hackett, Clifford Stanley	*Kenosha*
Hanson, Allen Henry	*Cambridge*
Harris, James Waldo *(Adv. Course)*	*Madison*
Harris, John Wallace *(Adv. Course)*	*Waupun*
Harrison, William B.	*Marinette*
Heider, Harvey Banderob	*Oshkosh*
Heineman, Warren Frederic	*Sheboygan*
Hendricks, John Herbert	*Watertown, N. Y.*
Henkel, George John Jr.	*Milwaukee*
Henry, Levi Lithgow *(Adv. Course)*	*Wonewoc*
Herried, Edwin Sandford	*Ettrick*
Hersh, Harry	*Milwaukee*
Herthel, Eugene Coerper	*Milwaukee*
Heyn, Herman Bunsen	*Milwaukee*
Hodson, Frederick Weed	*Chicago, Ill.*
Holmberg, Abner Waldo	*Ashland*
Holtum, Alfred	*Clinton*
Hu, Gor Hsi	*Canton, China*
Hughes, Delmar Reynolds	*Dayton, Ohio*
Hughes, Robert William *(Adv. Course)*	*Mankato, Minn.*
Humphrey, Kenneth Blaine	*Waterloo*
Ijams, Clyde W.	*Tombstone, Arizona*
Jensen, Julius Russ	*Galesville*
Johnson, Frank Ambrose	*Omaha, Nebr.*
Johnson, Godfrey	*Superior*
Jones, Albert Curtis	*Madison*
Jorstad, Floyd Oswald	*Cameron*
Kamantigue, Gonzalo Manela	*Imus, Cavite, P. I.*
Kaort, Ta Kang	*Shanghai, China*
Kemen, Willard Edwin	*Milwaukee*
Kenvin, Thomas Bircharde	*Gary, Ind.*
Kidd, Edwin Chipman	*Morrison, Ill.*
Kiernan, William Henry	*Oconto*
Kile, Roy Brook	*Chippewa Falls*
Klotz, Charles Harry	*Milwaukee*
Knotts, Frank	*Gary, Ind.*

Knudsen, Barney	*Algoma*
Kouyoumdjian, Garabet	*Racine*
Krause, Emil Friederich	*Sawyer*
Kroeschell, Paul Herman	*Chicago, Ill.*
Langum, Torleif Nicholas	*Eau Claire*
Larson, Harold Otto	*Racine*
Leopold, Harry Henry	*Milwaukee*
Libke, Robert Herman	*New Holstein*
Lindow, Rudolph Frederick	*Elkhorn*
Little, Claudius Barton	*Madison*
Little, John Shirley	*Burlington, Ia.*
Loeb, Louis Sigmund	*Mexico City, Mexico*
Ludden, Frederick Vivian	*Mineral Point*
Ludden, Homer Jameson	*Mineral Point*
McAteer, James Robert	*Oconomowoc*
McKinney, John V.	*Sterling, Ill.*
Ma, Minghai S.	*Chili, China*
Maurer, Herbert Fred	*Sheboygan*
Maxon, Glenway Jr.	*Milwaukee*
Mendelson, Emanuel William	*Madison*
Mensel, Robert Joseph	*Bremen, Ind.*
Merritt, Ernest Alfred	*Duluth, Minn.*
Miller, Henry Rudolph	*Iron Mountain, Mich.*
Miller, James Justin	*Muskogee, Okla.*
Mitchell, Paul Donald	*Milwaukee.*
Monk, Robert William Jr.	*Neillsville*
Moore, Roger Emmett	*Madison*
Moore, Watson Wendell	*Duluth, Minn.*
Mueller, Felix Julius	*West Allis*
Mueller, Fred Paul Gehart	*Ableman*
Nance, Allen Ellsworth	*Monroe*
Neitzel, William Charles	*Watertown*
Nelles, Carl Anton	*Madison, S. D.*
Newcomer, Earl Thomas	*Kansas City, Mo.*
Newell, Arthur *(Adv. Course)*	*Ashland, Mont.*
Nicolai, Chester Charles	*Milwaukee*
Niedringhaus, Frederick Emmons	*St. Louis, Mo.*
Niesen, Hugo Paul	*Madison*
Norris, Ralph Forbush	*Milwaukee*
Ofstie, Harold Sigvold	*Eau Claire*
Oldenburg, Harry Frank	*Milwaukee*
Pallansch, Rollin Anthony	*Fredonia*
Pardee, Franklin Gray *(Adv. Course)*	*Wausau*
Peterman, Hans A.	*Milwaukee*
Phillips, Harold Irving	*Calumet, Mich.*
Pollock, Joseph	*Milwaukee*
Quayle, Stephen Elmer	*Virginia, Minn.*
Rasmussen, John Peter	*Oshkosh*

Rau, Charley Alexander	*North Milwaukee*
Raube, William Carl	*Waupun*
Rayburn, Alphonse Ellsworth	*Brooklyn, Ia.*
Redeen, Arthur Leonard	*Kenosha*
Reed, John Willis	*Milwaukee*
Rehwaldt, Arthur William	*Sheboygan*
Reuter, Louis Frederick Jr.	*Milwaukee*
Reynolds, Edward Storrs	*Sturgeon Bay*
Risdon, Roland Howard	*West DePere*
Roads, Harry	*Hillsboro, Ohio*
Robertson, Scott Loomis	*Fort Collins, Colo.*
Rogers, Lester Cushing	*Oak Park, Ill.*
Roth, Sam Irving	*Milwaukee*
Rouse, John Patrick	*South Milwaukee*
Rusch, Herbert William August	*Portage*
Salmon, Wallis Samuel	*Mineral Point*
Sargent, Harold Frank	*Bayfield*
Savage, Harry Anthony	*Beaver Dam*
Schindler, Donald Franklin	*Brooklyn, N. Y.*
Schleck, Raymond Mathias	*South Milwaukee*
Schneider, Frederick Cooper *(Adv. Course)*	*Des Moines, Ia.*
Selden, Stanley James	*Dexterville*
Sen, Narendranatt *(Adv. Course)*	*Calcutta, Ind.*
Seymour, Leland	*Peshtigo*
Simonds, Marshall Garfield	*Chicago, Ill.*
Smith, Albert Madison	*Muskogee, Okl.*
Smith, Russell Gilman	*Chicago, Ill.*
Smits, Lawrence Ame Vennema	*Jackson, Mich.*
Snow, Barton Sperry	*Batavia, Ill.*
Soelch, Fred George	*Madison*
Sollett, George Thomas	*Goldfield, Ia.*
Spencer, Harold De Groat *(Adv. Course)*	*Racine*
Squier, Samuel Harvey Jr.	*Milwaukee*
Stearns, Harry Carpenter	*Racine*
Stern, Maurice Leopold	*Superior*
Stewart, Maynard Raymond	*Seymour*
Stirn, Alfred Julius	*Milwaukee*
Stoune, William Robertson	*Springfield, Mo.*
Strauss, Godfrey Eric	*Cincinnati, Ohio*
Talbot, Frank Merl	*Limeridge*
Tanghe, John William	*Milwaukee*
Tashjian, Edward Hagop	*Smyrna, Turkey*
Taylor, George Herbert	*Chicago, Ill.*
Terry, Ralph Hooper	*Lowell*
Thompson, Merville Spoor	*Milwaukee*
Thompson, Norman Burr	*Milwaukee*
Tifft, Thomas DeColon	*Wauwatosa*
Trantin, Jacob Jr.	*Madison*

Vallette, Vincent Jewell	*Goshen, Ind.*	
Watzke, Gustave Hugo	*Madison*	
Weaver, George Lynn	*Antigo*	
Weberg, Oscar John *(Adv. Course)*	*River Falls*	
Weinhardt, Arthur William	*St. Croix Falls*	
Weller, Dan Brown	*Fond du Lac*	
Wheeler, Leo Richard	*Geneva, Ill.*	
White, Cyrus Lanyon	*Mineral Point*	
Wilder, Perry Wadsworth	*Madison*	
Williams, Donald Howard	*Bangor, Mich.*	
Williams, Louis Howell	*Youngstown, Ohio.*	
Williams, Martin Henry	*Ashland*	
Williams, Robert Nowell	*Milwaukee*	
Wilson, Albert Vincent	*Rolling Prairie, Ind.*	
Wilterding, Forest Eugene	*Wausau*	
Winters, Ray Frederick	*Detroit, Mich.*	
Wolff, Arthur Carl	*Milwaukee*	
Wood, Walter Clarke	*Albany*	
Woods, Paul Erastus	*Chicago, Ill.*	
Youngberg, George Edward	*La Crosse*	
Zachow, Clarence Williams	*Clintonville*	—246

Adult Specials

Ballesteros, Jose	*Monclova, Coah, Mexico*	
Bell, Herbert Lorn	*Milwaukee*	M. E.
Bohan, Ira James	*Avoca*	
Bullerjahn, Adolph David	*Milwaukee*	E. E.
Colbeck, Frederick William	*Superior*	
Garlock, Lewis Franklin	*Racine*	M. E.
Gillis, Frederick Woodbury	*Superior*	
Hall, Melville Cooper	*Madison*	
Heuser, John Ulrich	*Milwaukee*	
Hills, Pearson Heathcote	*Milwaukee*	
Kottnauer, Edwin Hubert	*Milwaukee*	Ch. E.
Larson, Oscar Edwin	*Madison*	
Laue, Gilbert Eric	*Madison*	E. E.
Lorig, Edwin Theodore	*Milwaukee*	
Lorig, Frank William	*South Milwaukee*	M. E.
Rasmussen, Robert Peter	*Racine*	
Reeder, Jay Radcliffe	*Madison*	
Sandberg, Henry Theodore	*Madison*	M. E.
Skirm, Joseph Gaskill	*Princeton, N. J.*	
Washburne, Raymond Heath	*Pewaukee*	Min. E.
		—20

LAW SCHOOL

Third Year

Baker, John Sidney, B. A.	*Madison*	
Benton, Homer	*Richland Center*	
Brill, Homer Oswald	*Columbus*	
Buchen, Gustave William, B. A.	*Sheboygan*	
Bunker, Eugene Francis	*Madison*	
Burgess, Kenneth Farwell, B. A.	*Oshkosh*	
Cady, Emil Charles	*Kilbourne*	
Campbell, George	*Madison*	
Cerminara, Angelo	*Milwaukee*	
Clark, Robert Peter	*Elroy*	
Connor, Craig Prentice	*Auburndale*	
Duffy, Francis Ryan, B. A.	*Fond du Lac*	
Falge, Ottmar John	*Manitowoc*	
Frazer, George Enfield, B. A.	*Madison*	
Goggins, Hugh William	*Grand Rapids*	
Goldschmidt, William Jacob	*Madison*	
Haddow, Winfred Griffin	*River Falls*	
Hannan, William Frawley, B. A.	*Madison*	
Holmes, Donald Safford	*Madison*	
Hoyt, Ralph Melvin, B. A.	*Madison*	
Jenks, Frank	*Dodgeville*	
Kerschensteiner, Mark Joseph, B. A.	*Jefferson*	
Luhman, George Burton, B. A.	*Madison*	
McPherson, LeRoy	*Dodgeville*	
Martin, Hal Roger	*Madison*	
Mead, Leonard Charles	*Madison*	
Meuer, William Joseph, B. A.	*Madison*	
Naffz, Carl Francis, B. A.	*Madison*	
O'Keefe, John Joseph	*Portage*	
Paul, Milton James	*Platteville*	
Quinn, Lewis James, B. A.	*Madison*	
Toebaas, Oscar Theodore	*Madison*	
Velte, Charles Henry	*Poy Sippi*	
Whaley, Vilas Henry	*Benton*	
Worthington, George Edmund, B. A.	*Madison*	
Zillmer, Raymond Theodore, B. A., g	*Milwaukee*	—36

Second Year

Barber, Samuel Lyman, B. A.	*Madison*	
Barrett, Stephen Austin	*Chippewa Falls*	
Beers, William Charles	*Platteville*	
Coe, Laurence Smith l s	*Barron*	
Cudahy, Clarence John, B. A.	*Milwaukee*	
Doe, Arthur Brittan, B. A.	*Milwaukee*	

English, Norman Allan	*Arcadia*	
Gehl, Edward John	*Hartford*	
Halvorsen, Hans Marius	*Menomonie*	
Heilman, Roman August, B. A.	*Madison*	
Heinz, Adolph	*Madison*	
Johnson, Edward Elsworth	*Waupaca*	
Jones, Quincy Journey, B. A.	*Freeport, Ill.*	
Koenig, Ruby Elizabeth, M. A.	*Two Rivers*	
Laney, Willard John	*Dousman*	
Lorenz, LeRoy Blood	*Milwaukee*	
Louchery, Charles William	*Clarksburg, W. Va.*	
McDonald, James John	*Centuria*	
Meyers, Erwin Aaron, B. A.	*Evansville*	
Ohm, Howard Frederick	*Milwaukee*	
Peterson, Basil Irwin	*Madison*	
Simpson, Jefferson Allan, B. A.	*Shullsburg*	
Spohn, William Henry, B. A.	*Janesville*	
Weinandy, Oliver Roman, Ph. B.	*Cochrane*	
Wilkie, Harold McLean	*Fond du Lac*	—25

First Year

Brewer, Francis Leo	*Richland Center*
Browne, James Gillespie, B. A.	*St. Paul, Minn.*
Buehler, Emil	*Alma*
Burnam, Harry Stough, B. S.	*St. Paul, Minn.*
Carlson, David Lawrence	*Jamestown, N. Y.*
Clarke, Bruce Walrath	*Madison*
Cleary, George Edward, B. A.	*Platteville*
Conway, William Oakey	*Indianapolis, Ind.*
Cronin, Timothy Theodore, B. A.	*Oconomowoc*
Dawson, William	*Madison*
Dorney, John Alexander, B. A.	*Grand Rapids*
Duckart, Henry Francis	*Cooperstown*
Foulkes, Howard Tallmadge, B. A.	*Milwaukee*
Goggins, George Matthew	*Hilbert*
Graef, Henry William	*Plymouth*
Haase, William Frederick	*Marinette*
Haugan, Clarence Larnard	*Elkhorn*
Johnson, Easton	*Brodhead*
Johnson, Herbert Theodore	*Crown Point, Ind.*
La Follette, John Tabor	*Pullman, Wash.*
Lapham, Olene	*Lake Beulah*
Lippert, George Wolfe	*Jamestown, N. D.*
Long, Dan Richie	*Superior*
Martin, George Winsor	*Beloit*
Meyer, Morris	*Milwaukee*
Morrison, Ralph Newton, B. A.	*Madison*
Pellette, Arthur Jay	*Hartland*

Peterson, Arnold Richard	*Hudson*	
Riley, Thomas Edward	*Altoona*	
Rothstein, Jacob Solomon	*Milwaukee*	
Rudow, Henry William	*River Falls*	
Ryan, Fred Hall	*Chippewa Falls*	
Shoop, Sydney Allen	*Streator, Ill.*	
Slettland, Perry Arthur, B. A.	*Pigeon Falls*	
Smith, Glen Edward, E. E.	*Madison*	
Somers, Esther	*Madison*	
Sprague, William Harvey, B. A.	*Elkhorn*	
Stosick, Edmund Charles	*South Milwaukee*	
Thomann, Albert Jacob	*Pleasant Plain, Ia.*	
Webster, Ebert Morgan	*Hudson*	
Whitcomb, Earle Howard	*River Falls*	—41

Seniors in Letters and Science Electing Law Studies

Aberg, William John P.	*Shell Lake*	
Anderson, Alvin	*Windsor*	
Bunin, Nohum Bernard	*Stevens Point*	
Clemens, Albert Harrison	*Cuba*	
Cunningham, Roger George	*Janesville*	
Daley, Frank Aloysius	*Madison*	
Deming, Wayne Edgar	*Marshfield*	
Dino, Nicholas	*Madison*	
Eckhardt, George Harold	*Viroqua*	
Edwards, Henry Patrick	*Dallas, Texas*	
George, Leo Byron	*Madison*	
Heilman, Raymond Julius	*Oconomowoc*	
Jenner, George Herbert Austin	*Madison*	
Kolinsky, Pete Charles	*Racine*	
Mann, Walter Louis	*Lake Benton, Minn.*	
Meissner, Harry Victor	*Milwaukee*	
Miller, Glenn Elmer	*Madison*	
Murphy, Clarence Francis	*Elkader, Ia.*	
Porter, Philip Howe	*Madison*	
Pullen, Jones Spencer	*Evansville*	
Ramsdell, Bailey Edwin	*Wausau*	
Richmond, Adam	*Madison*	
Thomson, Harold Page	*Cavalier, N. Dak.*	—23

Law Specials

Anderson, John Brown	*Madison*
Bergsten, Ernest August	*Florence*
Burns, Robert Hamilton	*Grand Rapids*
Cadigan, John Andrew	*Superior*
Christensen, Chester Herbert	*Rio*
Erickson, Arthur X.	*Milwaukee*

Evans, George Beaconsfield	*Marinette*	
Ferguson, Hugh Munro	*Oconto*	
Geraldson, Elmer Stanley	*Manitowoc*	
Harshaw, Myron Turner	*Stevens Point*	
Heath, Benjamin Lisle	*Fond du Lac*	
Herman, Eugene	*Milwaukee*	
Kelley, Albert James	*Beloit*	
Lawrie, Ida Maggie Cuthbertson	*Waukesha*	
Nehs, Victor Wilson	*Marshfield*	
Nelton, Earl	*Independence*	
Nye, James Gordon	*Moorhead, Minn.*	
Parmentier, Jules Merrill	*Green Bay*	
Pinkerton, Milo Blish	*Madison*	
Reid, Lucien Taylor	*La Crosse*	
Reinholdt, Richard Theodore	*Madison*	
Rhyner, Oscar	*Oshkosh*	
Riley, Peter Francis	*Elroy*	
Schroeder, William August	*North Milwaukee*	
Smith, Irving Winfred	*Madison*	
Somers, Lewis Jack	*Madison*	
Soutar, Douglas Ross	*Lake Geneva*	
Symes, Louis Kline	*Bancroft, Mich.*	
Vinji, David Ray	*Madison*	
Walden, Edward Jacob	*Madison*	
Whipple, Herbert Eugene	*Superior*	
Yantis, George Frank	*Beloit*	
Zentner, Erwin Herbert	*Milwaukee*	—33

COLLEGE OF AGRICULTURE

Long Course

Seniors

Bailey, Elbert Gladstone	*West Bend*
Banker, Paul Philip t c	*Fort Atkinson*
Berg, Anthony	*Bloomer*
Bigford, Gifford Llewellyn t c	*Manawa*
Brown, Adrian Abbott t c	*Waterloo*
Bullis, Clifford Bentz	*Eau Claire*
Buser, Alfred Leo	*Madison*
Bush, Charles William	*Waupun*
Cardenas, Francisco Marcos	*Saltillo, Coah, Mexico*
Clark, Warren William	*River Falls*
Cuff, Ovens Patterson	*Hortonville*
Dahlberg, Arnold Orlando	*Crane*
Dieter, William Albert	*Montfort*
Drescher, Henry Adolph t c	*Sun Prairie*

Foster, George Henry	*Evanston, Ill.*
Frost, Harold Guernsey	*Almond*
Fuchs, Albert George Jr.	*Chicago, Ill.*
Gilman, Joseph Charles	*Racine*
Glasspoole, James Edward t c	*Mondovi*
Hart, Harry	*Humbird*
Hayes, Mark Webster	*South Kaukauna*
Henke, Louis Albert t c	*Lowell*
Hoppert, Martin John	*Sheboygan*
Hughes, Elmer Howard	*Rewey*
Ibsen, Herman Lauritz	*Chicago, Ill.*
Kadish, Halbert Leopold	*Milwaukee*
Kammlade, Stephen Girard	*Sparta*
Klumb, Hugo Gottfried Nicholaas t c	*Kewaskum*
Luther, Ernest Leonard	*Madison*
McConnell, Charles Fremont	*Darlington*
McNown, Mark Freeman	*Mauston*
Mackmiller, William Fred t c	*Madison*
Moll, John Edwin	*Madison*
Moore, George McMurtrie	*Jackson, Minn.*
Muck, Carl Seifert	*Jefferson*
Murray, Allen Kenneth	*Ripon*
Nelson, Martin Vincent	*Madison*
Newcomb, Henry Sage	*Pepin*
Noer, Oyvind Juul	*Stoughton*
Otis, Franklin Daniel	*Madison*
Parsons, Edgar	*Cleveland, Ohio*
Pflughoeft, Henry Andrew	*Algoma*
Polley, Earl Arthur tc	*Madison*
Portman, Andrew Nelson	*Chicago, Ill.*
Potter, Byron Sears	*Madison*
Reinking, Otto August tc	*Madison*
Rouzer, Paul Charles tc	*Madison*
Schreiner, Alf	*Westby*
Scoville, Walter Amasa	*Riverside, Ill.*
Seaton, Edward Arthur	*Madison*
Sikhart, Joseph George tc	*Muscoda*
Stangel, Otto Antonio tc	*Tisch Mills*
Sutton, Luther Francis tc	*Madison*
Thompson, Arthur George	*Sun Prairie*
Thompson, Willard Chandler	*Sun Prairie*
Totman, Clarence Carlton	*Lancaster*
Utgard, Myron Harrison	*New Richmond*
Weir, James Henry	*Mukwonago*
Wilson, Lewis Kemper	*Milwaukee*
Zander, Arthur George	*Milwaukee* —60

Juniors

Alcorn, James Dunn	*Stevens Point*
Amodt, Marcus	*Viroqua*
Andree, Richard Ambrose	*Milwaukee*
Babcock, Frank Gordon	*Madison*
Baird, Robert Dixon	*Evanston, Ill.*
Baird, William Lockhart	*Madison*
Barker, Roy Thomas tc	*Oconomowoc*
Barrand, Chester Arthur	*Sturgeon Bay*
Beattie, James Grey	*Arlington*
Bieri, Russell Bernhard	*Knapp*
Bledsoe, Page	*Charleston, W. Va.*
Bradley, Bruce Foster	*Toledo, Ohio*
Brown, Ralph Vernon tc	*Arena*
Bush, George Allen	*Louisville, Ky.*
Crosby, Charles Logan	*Rhinelander*
Dillon, Harry	*Mondovi*
Dopke, Walter Alfred tc	*North Milwaukee*
Drechsler, Charles Frank tc	*Butternut*
Fuller, Frank Randall Jr.	*Madison*
Garland, John Jephson	*Wellington, Kan.*
Gile, Bueford Monroe	*Richland Center*
Hall, Eugene William tc	*Princeton*
Hammersley, Ralph Walter	*Madison*
Harris, John Coman	*Waukesha*
Harrison, Erbie Lee	*Madison*
Healey, Claude Sprague	*Elgin, Ill.*
Hoeffel, Merrill Joseph	*Green Bay*
Huser, Francis Edward	*Cumberland*
James, John Ambrose	*Linden*
Ketter, Walter Conrad	*Milwaukee*
Kilpatrick, Elmer James	*Belmont*
Klinka, John Simandl	*West Bend*
Knutsen, Martin Halvor	*Ridgeway*
Lamson, Robert Austin	*Madison*
Levin, Isidore tc	*Chicago, Ill.*
Loesch, Joseph Benjamin	*Chicago, Ill.*
Loos, Walter Martin	*Elkhart Lake*
Margoles, Nathan	*Milwaukee*
Maverick, James Slayden	*San Antonio, Texas*
Mawhorter, Walter Ransom	*Wawaka, Ind.*
Meyer, Werner Eugene tc	*Kilbourn*
Morgenroth, Alvin Stanford	*Madison*
Murray, Reid Fred	*Isabel, S. D.*
Nelson, Oran Milton	*La Crosse*
Nelson, Raymond Francis	*Corliss*
Ninman, Herman John	*Belle Plaine*

Ochsner, Albert Henry	*Chicago, Ill.*
Oldham, Leslie Latham	*Madison*
Onsrud, Anton Edward tc	*Stoughton*
Oosterhuis, John Jacob	*Waldo*
Opie, Howard Perry	*Warren, Ill.*
Opstedal, Anthon Johannes tc	*De Forest*
Page, George Albert tc	*Ripon*
Palit, Barendra Kumar	*Calcutta, India*
Peltier, Victor Michel	*San Francisco*
Pinkerton, Fred Sylvester	*Waupaca*
Post, Clinton Blaine	*Madison*
Potter, George Frederick	*Madison*
Powell, Thomas Charles	*Reedsburg*
Pratt, William Dudley Jr.	*Indianapolis, Ind.*
Rasmussen, Walter Edwin	*Hammond*
Reineking, Adolph George	*Appleton*
Root, Herman Martin tc	*Viroqua*
Russell, Guy Arland	*Ripon*
Schmutzer, Anton Wencelaus	*Antigo*
Schuster, Raymond Herman	*Lodi*
Stallard, John Earl	*Fairchild*
Stern, Frank William	*New London*
Sur, Urban Francis	*Toledo, Ohio*
Tang, Tsic Yee	*Canton, China*
Thompson, Carl	*Curtiss*
Turnbull, Alan James	*Glencoe, Ill.*
Uber, Walter Fred	*Milwaukee*
Van Riper, John Crowell, Jr.	*St. Louis, Mo.*
Walz, John Martin Jr.	*Freeport, Ill.*
Warner, Laird Amisee	*Grand Rapids*
Webbe, Albion Scotson	*Madison*
Wehrwein, George Simon	*Manitowoc*
West, Calvin Parker	*Waupaca*
Wilcox, Frederick Seacord	*Elgin, Ill.*
Wilcox, Raymond Boorman	*Madison*
Woo, Koksan Joyao	*Canton, China*
Zahorick, Anton John	*Kewaunee*

—83

Sophomores

Alexander, Arthur Hadden	*Wellesley, Mass.*
Alexander, Joseph Hope Hughes	*Madison*
Anagnos, Peter Theodore	*Madison*
Anderson, William Freeman	*Whitehall*
Armour, Myron Lavergne	*Mondovi*
Arnold, Harold Alicen	*Sharon*
Arpin, George Nienstedt	*Grand Rapids*
Bachhuber, Leo John	*Mayville*

Bainbridge, Archie	*Blanchardville*
Barth, Frank Ernest	*Port Washington*
Becker, Joseph Aloysious	*Hurley*
Bennett, William Ralph	*Waterford*
Bluemke, Albert Arthur	*Westfield*
Boardman, William Clayton	*New Richmond*
Bodenbach, Cyril Robert	*Milwaukee*
Bollerud, William	*Hollandale*
Bradshaw, Herschel Llelellyn	*Rockford, Ill.*
Brereton, William Robert	*Lodi*
Brindley, Ralph	*Boscobel*
Brown, Roscoe Stewart	*Winona, Minn.*
Bulkley, George Spencer	*Libertyville, Ill.*
Buser, Arnold Alexander	*Madison*
Bushnell, George Earnest	*Platteville*
Buth, Guido Frederick	*Waterloo*
Butler, Robert Parker	*Glen Ridge*
Butz, Harry Noble	*Mazomanie*
Chapman, Clinton Joseph	*Darlington*
Chase, Stephen 4th	*Madison*
Coe, Noble Milton	*Milwaukee*
Cohn, Abraham	*Madison*
Coleman, Walter Stephen	*Madison*
Cuff, Raymond Lee	*Manawa*
Culver, Howard Brasfield	*Ft. Collins, Colo.*
Currie, Neil Wilson	*Minneapolis, Minn.*
Currie, Stanley Robert	*Superior*
Dahl, Henry	*Blair*
Daubner, Neal Fredrick	*Madison*
Dawe, Wilmer Ellis	*Ft. Atkinson*
Dillon, George Edward	*Red Oak, Ia.*
Douglas, Clayton Orville	*Oshkosh*
Etheridge, Jesse Irving	*Wild Rose*
Fletcher, John Archibald	*Chicago, Ill.*
France, Lloyd Victor	*Platteville*
Freehoff, William Adolph	*Coon Valley*
Fuente, Jesus de la Rodriguez	*Nadadores, Coah, Mexico*
Galloway, Edwin Pierce	*Fond du Lac*
Gay, Sidney	*Madison*
Gonyon, Harvey LeRoy	*Milwaukee*
Graf, Paul Fred	*Leon*
Guenther, Oscar Frederick	*Campbellsport*
Gunderson, Oscar	*Madison*
Gunn, Reuben Veerin	*Jacksonville, Ill.*
Gustafson, Wallace Harvey	*Stockholm*
Haner, Fred Jacob	*Sun Prairie*
Hanson, Joel Hjalmar	*Eau Claire*
Harris, Victor Frederick	*Chicago, Ill.*

Hayes, John Barry	*Madison*
Hemenway, Alvin William	*New Richmond*
Hennessey, Thomas Edward	*Roberts*
Henning, Erwin Lloyd	*Watertown*
Hertel, Joseph Paul	*Chilton*
Hoffman, Robin Emmerich	*Chicago, Ill.*
Hoppert, Ernest Herman	*Sheboygan*
Householder, Glen Monroe	*Richland Center*
Howard, Neale Frederic	*Milwaukee*
Hubbell, Wolcott Wood	*Madison*
Hubble, William Martin	*Louisville, Ky.*
Iverson, Carl	*Kenosha*
Johnson, Allen	*Milwaukee*
Jones, Thomas Leslie	*Arena*
Juday, Wesley Denver	*Millersburg, Ind*
Juve, Karl Lincoln	*Merrill*
Kelly, Paul John	*Milwaukee*
Kemp, Ralph	*Tipton, Ind.*
Kemp, William Henry Jr.	*Maplewood, N. J.*
Kennedy, Martin Thomas	*Ashland*
Kieckhefer, Ferdinand Charles	*Milwaukee*
Kirk, Cassius Lamb	*Bozeman, Mont.*
Krueger, Walter Edwin	*Menomonie*
Kuo, Tuar-Shin	*Wusih, China*
Lange, Raymond Charles	*Eau Claire*
Larsen, Warren Sydney	*Green Bay*
Lawton, Jay W., Jr.	*Viola*
Layman, Kenneth Foss	*La Grange, Ill.*
Leaper, Earl Theodore	*Green Bay*
Leaper, Harry Wilbert	*Green Bay*
Leguia, Jose	*New York, N. Y.*
Levy, Edmond Gustave	*Milwaukee*
Lunz, Henry	*Clintonville*
MacBride, Lawrence Harold	*Chicago, Ill.*
McBride, Clarence Smith	*Spokane, Wash.*
McConnell, Claude Howard	*Tomah*
McKirnan, Robert Noble	*Sturgeon Bay*
Markowitz, Harry Arthur	*Madison*
Marshall, Gilbert Cottrell	*Belvidere, Ill.*
Martin, Jay P.	*Bagley*
Mathys, John William	*Green Bay*
Meyer, Benno Walter	*Milwaukee*
Montfort, Harrison Morton	*Portland, N. Y.*
Moore, George Elkington	*Madison*
Mortimer, George Byron	*Chilton*
Murphy, James Henry	*Kewaunee*
Nathan, Edward Columbus	*Chicago, Ill.*
Nelson, Herbert Edward	*Corliss*

Nevens, William Barbour	*Madison*
Pan, Chu Chi	*Kwangsi, China*
Popelka, Charles Jerry	*Racine*
Potgieter, Dietlof Siegfried Mare	*Amersfoort, Transvaal*
Pott, Arthur Frederick	*Sheboygan*
Priddy, Emerson Bard	*Chicago, Ill.*
Quick, Edward Connell	*Madison*
Ritchart, Roy Cecil	*New Lisbon*
Runke, Rufus	*Algoma*
Sabin, Jean Frederick	*Watertown*
Schenkenberg, Lee Jay	*Waterford*
Schmidt, Walter Emil	*Arcadia*
Schneck, Henry William	*Milwaukee*
Schreiber, Louis Erwin	*Paraboo*
Schubring, Arthur Otto	*Madison*
Schultz, Eugene Schultz	*Madison*
Scofield, John	*Edgerton*
Sell, Allan Michael	*Madison*
Sippel, George Bruno	*Chicago, Ill.*
Smith, George Washington Jr.	*Pacific, Mo.*
Stone, Francis Downing	*Lampson*
Sullivan, Dan Thomas	*Ft. Atkinson*
Tachau, Charles Gabriel	*Louisville, Ky.*
Tasker, John Bruce	*Chicago, Ill.*
Tawse, William Wright	*Jackson, Ohio*
Taylor, Bennett Ross	*Madison*
Treu, Max Rudolph Hendrick	*Johannesburg, S. Africa*
Trewartha, William Clyde	*Hazel Green*
Turner, Forrest Haven	*Madison*
Van Gent, Conrad Eugene	*Milwaukee*
Wahl, Robert Christian	*Milwaukee*
Walbridge, Thomas Alexander	*Toledo, Ohio*
Walker, David Moseley	*Racine*
Walker, John Charles	*Racine*
Wallis, John Lowell	*Milwaukee*
Weart, David Wilson	*Winnetka, Ill.*
Weaver, Everett Wesley	*Madison*
Willis, Mina Augusta	*Rewey*
Wilson, Graham Eugene	*Madison*
Wiseman, Clinton Raymond	*Benton*
Woods, Mort Crumbugh	*Ardmore, Okla.*
Wright, Lester James	*Waukesha*
Yampolsky, Cecil Jacob	*Chicago, Ill.*
Yost, John James	*Pittsburg, Pa.*
Yule, Curtis L.	*Osseo*
Zinke, Arthur William Hermann	*Milwaukee*

—150

Freshmen

Avery, Julia Foster	*Philadelphia, Pa.*
Bailey, Ernest Hayden	*Sun Prairie*
Bellows, Frank Leroy	*Chicago, Ill.*
Benson, Ryland Edward	*Milwaukee*
Blakney, George Pettit	*Milwaukee*
Blaustein, Samuel Lawrence	*Waupaca*
Boger, Henry Hall	*Aurora, Ill.*
Bohstedt, Gustave	*Victor, Ia.*
Boomer, Alanson Griffin	*Beaver Dam*
Booth, Alfred Bercry	*Chicago, Ill.*
Brainard, George Earl	*Lone Rock*
Brown, Augustus Carmi	*Marinette*
Brumm, Gilson John	*Middleton*
Cantwell, Mark George	*Downsville*
Charlesworth, Guy Roswell	*Kaukauna*
Clark, Glenn Gardner	*Dresser Junction*
Clark, William Noble	*Pine City, Minn.*
Coe, Guy Romaine	*Kiesling, Wash.*
Cook, Austin Clarence	*Iron Mountain, Mich.*
Cooper, George Meisner	*Madison*
Cox, Arthur	*Glencoe, Ill.*
Cramer, Albert Julius	*Merrill*
Crosby, Reynale Richardson	*Madison*
Dance, James Harold	*Brookfield*
Darrow, Halsey	*Western Springs, Ill.*
Durnford, Fred Alford	*Richland Center*
Dustrude, Willard Arthur	*Oconomowoc*
Ellingson, Ingvald Samuel	*Mondovi*
Faville, John William	*Lake Mills*
Fogo, Franklin Eurotas	*Richland Center*
Frothingham, James Morgan	*Chicago, Ill.*
Frye, Charles Francis	*Madison*
Hall, Curtiss Everett	*Aberdeen, S. D.*
Harding, William Hover	*Chicago, Ill.*
Harris, Sheba Florence	*Cincinnati, O.*
Haumerson, Clifford Cedric	*Fort Atkinson*
Hay, Henry Harshaw	*Stevens Point*
Hedges, Arthur F.	*Madison*
Hegeman, Rolland Louis	*Wilmot*
Heisig, Adolph William	*Mt. Horeb*
Henderson, Arthur Henry	*Cadillac, Mich.*
Henrich, Harold Karl	*Merrill*
Henry, Lloyd Alexander	*Wonewoc*
Hickey, James Sheridan	*Milwaukee*
Hildreth, William Sabieski	*Wheeling, W. Va.*
Hitt, Oscar Andrew	*Alma*

Hoag, Charles Dodge	*LaGrange, Ill.*
Hough, Randall Sherman	*Madison*
Hubbard, Raymond Harkness	*Elkhorn*
Ingalls, Harold Wallace	*Racine*
Johnson, Arthur Norman	*Morrisonville*
Johnson, Marshall Chase	*Hinsdale, Ill.*
Johnson, Wayne Leslie	*Rockford, Ill.*
Jones, Fred Rufus	*Mauston*
Jones, Hugh Meiron	*Madison*
Kammlade, William Garfield	*Sparta*
Kautsky, Emil John	*Colby*
Keast, Carl De Witt	*Youngston, Ohio*
Kelner, Rowan Burns	*La Grange, Ohio*
Kennedy, Grover	*Merrill*
Kraemer, Edward Conrad Adam	*Milwaukee*
Kyle, John Clarence	*Menomonie*
Lackey, Theron Oswell	*East Troy*
Lambert, William Henry	*St. Louis, Mo.*
Larsen, Carl August	*Wausau*
Larson, Lawrence Odell	*Madison*
Lindauer, Alfred Clarence	*Madison*
Lobdell, Martyn Clifford	*Mukwonago*
Loye, Fred Henry	*Oconomowoc*
McDonald, John Stephen	*Sparta*
McKay, James Robertson	*Evanston, Ill.*
McKay, Robert Clayton	*Huron, S. D.*
MacNaughton, Leslie	*Argyle, New York*
Macauley, John Chester	*Atkinson, Ill.*
Machotka, Joseph Frank	*Muscoda*
Machovec, Joseph Aloysius	*Mauston*
Mann, Robert James	*Waukesha*
Marshall, Donald Cameron	*Milwaukee*
Matheson, James	*Elkhorn*
Mattson, Donald Frederick	*Omaha, Nebr.*
Maxwell, Arnold Ivan	*Fort Atkinson*
Meyer, Arno August Louis	*Cascade*
Middleton, George Innes	*Ripon*
Olp, Myrl Robert	*Springfield*
Olsen, Harold Lund	*Stoughton*
Orr, Glen Harrison	*Oregon*
Patron, Rizo Enrique	*LeFundicion, Peru, S. A.*
Pfister, Robert Louis	*Madison*
Pickett, Roswell Covert	*Des Moines, Ia.*
Pierce, Albert Rideout	*Oshkosh*
Pitz, Walter	*Manitowoc*
Poynton, John Gardner	*Green Lake*
Rahmlow, Henry John	*Appleton*
Rector, Fred John	*Fennimore*

Reed, Jesse Horatio	*Bradentown, Fla.*
Reid, Stuart Walker	*Oconomowoc*
Richards, Clarke Arno	*Madison*
Ridgway, Cedric	*Madison*
Roehm, Hiram Herbert	*Calumet, Mich.*
Roethe, Harry Edward	*Fennimore*
Ross, William Ernest	*Madison*
Salter, Raymond	*Chilton*
Sanborn, Frederick	*St. Paul, Minn.*
Sander, Herman	*West Salem*
Sanderson, Charles Harrison	*Madison*
Scadden, Lance Richard	*Hazel Green*
Schaal, Albert Amell	*Cassville*
Schapper, Ferdinand Edwin	*Powers Lake*
Schlenvogt, Joseph Herman	*Port Washington*
Schmidt, Edward William	*New Holstein*
Schroeder, Carl Harms	*Milwaukee*
Schwendener, Benjamin Otto	*Milwaukee*
Seidel, Erwin Adam	*Milwaukee*
Seyforth, Harlan Guy	*Mondovi*
Shawvan, John Murat	*Janesville*
Shemick, Frederick William	*Marinette*
Shirley, Walter Raymond	*La Crosse*
Simdon, Robert Otto	*Lake Mills*
Sorenson, Leslie John	*Rhinelander*
Spoor, Glenn David	*Kenosha*
Sprinkmann, Ernest Spencer	*Milwaukee*
Stam, Lester Edward	*La Crosse*
Stauffacher, Ralph	*Monroe*
Stitt, Donald Gardner	*El Paso, Ill.*
Suhr, Edmund Julius	*Chicago, Ill.*
Sullivan, Tom Andrew	*Forrestville*
Sykora, James	*Chicago, Ill.*
Thompson, Edmund Harry	*Blair*
Ullmann, Herbert Satterlee	*Oak Park, Ill.*
Valenzuela, Mariano	*San Jose, Costa Rica*
Wade, Walter Albert	*Chicago, Ill.*
Webster, Charles Emerson	*Hudson*
Wehrwein, Carl Fred	*Manitowoc*
White, Harold Millbank	*Denver, Colo.*
Wilger, Charles Albert	*Sterling, Ill.*
Williams, Joseph Lloyd	*Eldorado*
Winans, Hugh Neal	*Olney, Ill.*
Wittich, Arno	*Milwaukee*
Wolcott, Oliver Seymour	*Batavia, Ill.*
Wood, Benjamin Frank	*Fond du Lac*
Woodward, Alexander Gilfillan	*Madison*
Wright, Ivan Morris	*Waukesha*
Youngblutt, Albert John	*Middleton*

—143

Middle Course—Second Year

Allen, Reuben Christ	*Montfort*
Baker, Arthur Andrus	*Soldiers Grove*
Berry, Brayton Lyon	*Duluth, Minn.*
Craig, Orlin Perry	*Mukwonago*
Daube, Donald Ongley	*Chicago, Ill.*
Davidson, David	*Westby*
Debbink, Henry Lawrence	*Milwaukee*
Detrich, Louis Frederick	*Ruxton, Md.*
Dreutzer, Cedric Blaine	*Sturgeon Bay*
Gonia, Thomas Roy	*Mellen*
Holmes, George Adams	*Beloit*
Hoopes, Albert Warfield	*West Chester, Pa.*
Ingebritson, Arthur Louis	*Cambridge*
Jones, Flint H.	*Fond du Lac*
Kavanaugh, James Nicholas	*Kaukauna*
Lawson, Henry Lambert	*Montclair, N. J.*
Letts, Harlan Day	*Letts, Ia.*
McHugh, Frank James	*Aberdeen, S. D.*
Marsh, Lawrence Kellogg	*Milwaukee*
Novak, Emil Charles	*Antigo*
Parker, Charles Strong	*Galesville*
Richards, Forrest Orlow	*Sparta*
Sarkis, Boshnakian	*Madison*
Thomas, Isaac Preston	*Upper Mont Clair, N. J*
Tobin, Edward Peter	*Mellen*
Vance, Preston Thompson	*Louisville, Ky.*
Weston, Henry Griggs	*Duluth, Minn.*
Wild, John Edgerton	*Madison*
Williams, Newell Marcius	*Superior*
Zahn, John Phil	*Fond du Lac*

—30

First Year

Adams Charles Leslie	*Olney, Ill.*
Barker, Judson Thom	*Clinton*
Beale, Charles Roddenbery	*Cairo, Ga.*
Behling, Edwin John Ferdinand	*Johnson Creek*
Benedict, Murray Reed	*Neillsville*
Burnet, Gilbert William	*Antigo*
Cary, Clarence Everett	*St. Paul, Minn.*
Cavanagh, Ellen Isabel	*Fond du Lac*
Cleary, Emmet Vincent	*Antigo*
Conger, Earl M.	*Sac City, Ia.*
Curwen, John Frederick	*Shullsburg*
Da Prato, Joseph	*Iron Mountain, Mich.*
Davenport, Harry Winslow Jr.	*Braintree, Mass.*
Detchon, Elliott Ray	*Chicago, Ill.*

Dickson, Carl Gimble	*Spokane, Wash.*	
Du Mez, Warren Ballard	*Cashton*	
Dungan, James Duane	*Indianapolis, Ind.*	
Dunwiddie, Ralph Sidney	*Delavan*	
Evert, Charles William	*Milwaukee*	
Glidden, Chase Edward	*DeKalb, Ill.*	
Graham, Wallis Woodruff	*Milwaukee*	
Hawley, Rexford	*Rockford, Ill.*	
Howell, Eugene Edwin	*Dayton, O.*	
Hunt, Herbert J.	*Madison*	
Hussey, George Warren	*Spokane, Wash.*	
Johnson, Arthur Ernest	*Cleveland, O.*	
Johnson, Vere Le Roy	*Tomah*	
Jones, Earl Foulkes	*Sparta*	
Jones, Ira David	*Nashota*	
Kedney, Harry Steinfort	*Salem, N. J.*	
Kiefaber, Harry Jonathan	*Dayton, Ohio*	
Kirby, Claude Melvin	*Fort Atkinson*	
Knoop, John Kerr	*Troy, Ohio*	
Knott, Rodney Dane	*Eau Claire*	
Kueffner, Frederick Joseph	*St Paul, Minn.*	
Leonard, James Basil	*Hinghman, Mass.*	
Leverenz, Edwin William	*Sheboygan*	
Loomis, Joseph Gilbert	*Chicago, Ill.*	
Moore, Leland Wightman	*Ottawa, Kans.*	
Mussehl, Frank Edward	*Jefferson*	
Naffz, Louis Edwin	*Madison*	
Person, Karl Otto	*Buffalo, N. Y.*	
Preston, Alvin Fred	*Montfort*	
Ramsdell, Fred Stanley	*Greeley, Colo.*	
Reichel, Louis Herbert Jr.	*Grand Rapids*	
Schacht, Arthur Louis	*Racine*	
Schwaab, Walter Frederick	*Nashotah*	
Sturtevant, Frank Austin	*Oak Park, Ill.*	
Warren, Scott Eddy	*Johnsonburg, N. Y.*	
Weingartner, Harry Albert	*Rockford, Ill.*	
Weittenhiller, Will Conrad	*Platteville*	
Westfall, Fred Jr.	*Milwaukee*	
Whiting, Ellis Wilbur	*Oconto*	
Willan, Robert Pinkerton	*Eau Claire*	
Winegar, Foster Volney	*Clinton*	
Yorgey, John David	*Horicon*	
Young, Roy D.	*Galesville*	
Zukoski, Arthur William	*Ferguson, Mo.*	—58

Home Economics

Ames, Alice	*Stoughton*	Freshman
Andrus, Ruth Clarissa	*Madison*	Sophomore

Bailey, Nellie	*Fennimore*	Freshman
Bell, Helen Stevens	*St. Joseph, Mo.*	Freshman
Benson, Ida Bertina	*Madison*	Junior
Beye, Elizabeth	*Oak Park, Ill.*	Freshman
Bickford, Charlotte	*Sterling, Ill.*	Freshman
Boeing, Agnes	*Minto, N. D.*	Sophomore
Bradley, Alice Veronica	*Madison*	Freshman
Bradley, Clara Vivian	*Madison*	Sophomore
Branegan, Gladys Alee t c	*Madison*	Junior
Breck, Marion Florilla	*Milwaukee*	Sophomore
Briggs, Theodora t c	*Madison*	Junior
Brooks, Helen Winifred	*Madison*	Sophomore
Bunnell, Mary Martha	*Madison*	Senior
Calkins, Kathleen Clinch	*Evansville*	Sophomore
Crosby, Bernice Lydia	*Madison*	Sophomore
Cummings, Lucile Priscilla	*Red Lodge, Mont.*	Junior
Dahle, Beulah	*Mt. Horeb*	Freshman
Dahm, Anna Margaret t c	*McGregor, Ia.*	Junior
Davies, Ruth Eaton	*Milwaukee*	Sophomore
Davis, Norma Jessie t c	*Evanston, Ill.*	Junior
Dawe, Ella May	*Mineral Point*	Sophomore
Dodge, Helen Josephine t c	*Monroe*	Senior
Drotning, Anna Elizabeth	*Madison*	Junior
Dykesten, Maybelle Leonora	*Madison*	Sophomore
Ely, Lydia Baxter	*Germantown, Pa.*	Junior
Enright, Eleanor Marie t c	*Janesville*	Junior
Fargo, Jennie Ethelyn	*Mt. Horeb*	Sophomore
Farquhar, Florence	*Chicago, Ill.*	Freshman
Fauerbach, Elsa Marie	*Madison*	Freshman
Fess, Madeline	*Madison*	Sophomore
Fleming, Anna Rhea	*Chicago Heights, Ill.*	Senior
Flett, Helen Ann	*Racine*	Freshman
Fryette, Evangeline	*Madison*	Junior
Gaffron, Martha Otelia	*Plymouth*	Sophomore
Gautschi, Irma Charlotte t c	*Washburn*	Junior
Gavin, Ellen Marie	*Omaha, Nebr.*	Freshman
George, Iola Frances	*Monticello, Ia.*	Sophomore
Gill, Gladys Grimshaw	*Mauston*	Junior
Gillette, Ruth Mildred	*Wauwatosa*	Freshman
Gleason, May Columbia	*Mt. Horeb*	Freshman
Glidden, Josephine Frances	*DeKalb, Ill.*	Junior
Gollmar, Edith Florence	*Baraboo*	Freshman
Gray, Hazel Marie	*Madison*	Junior
Hamill, Helen Hope	*Madison*	Freshman
Hanson, Helena Christina Louise	*Neenah*	Freshman
Harker, Melva Delia	*Dodgeville*	Junior
Harrington, Mildred Louise	*Chicago, Ill*	Freshman
Hawley, Alma Mia	*Minocqua*	Freshman

Hayden, Stella Jeanette	*Milwaukee*	Freshman
Heck, Florence Anna	*Aurora, Ill.*	Sophomore
Hill, Anna Louise	*Rosendale*	Freshman
Hinkson, Ora Lucy	*Poynette*	Freshman
Hinn, Adeline Theresa	*Fennimore*	Freshman
Hoesley, Olga Marie	*Monroe*	Sophomore
Jarvis, Florence May	*Madison*	Sophomore
Jensen, Evelyn Harriet t c	*Madison*	Junior
Juby, Carolyn Catherine	*Elgin, Ill.*	Freshman
Kalmbach, Ethel Alberta	*Sturgeon Bay*	Freshman
Karges, Neva Blanche	*Madison*	Freshman
Kendall, Ethel Florence	*Clinton, Ia.*	Freshman
Kitchen, Dorothy Lewis	*Kansas City, Mo.*	Freshman
Koehler, Jennie Emma	*Menomonee Falls*	Sophomore
Latham, Gladys	*Madison*	Freshman
LeFeber, Alice Marie	*West Allis*	Freshman
Lindas, Ida Caroline	*Kenosha*	Junior
Lyle, George Margaret	*Madison*	Freshman
MacArthur, Catherine	*Madison*	Sophomore
MacKinley, Marguerite Marie	*Milwaukee*	Sophomore
McMurry, Mabel Jane	*Madison*	Sophomore
Macklin, Miriam Achetene	*Detroit, Mich.*	Freshman
Magee, Gertrude Elizabeth	*Galloway*	Sophomore
Manning, Hazel t c	*Madison*	Junior
Martin, Harriet Genevieve t c	*Madison*	Senior
Matthews, Norma Mary	*New Holstein*	Freshman
Meloche, Gladys Louise	*Madison*	Sophomore
Merrill, Delia Marie	*Sparta*	Junior
Mingle, Hilda Adne	*Daleville, Ind.*	Freshman
Minturn, Ruth	*West Allis*	Sophomore
Morley, Fannie Edna	*Baraboo*	Sophomore
Morrissey, Agnes	*Madison*	Freshman
Murray, Cecilia Elizabeth	*Madison*	Freshman
Murray, Helen Frances t c	*Rensselaer, Ind.*	Junior
Oakey, Edna Kathryn t c	*Madison*	Junior
Oliver, Mary Bertha	*Morrison, Ill.*	Senior
Osborne, Eunice Elizabeth t c	*Madison*	Senior
Peck, Ruth Annette	*Evansville, Ind.*	Sophomore
Piper, Bessie Arabelle	*Madison*	Sophomore
Piper, Margaret Amelia t c	*Madison*	Senior
Post, Lillian Genevieve	*Madison*	Sophomore
Pratt, Elizabeth Logan	*Shelbyville, Ky.*	Freshman
Rayne, Lucile Price	*Madison*	Junior
Reese, Josephine t c	*Chicago, Ill.*	Junior
Richards, Anna t c	*Madison*	Junior
Richards, Ella Alfraetta	*Mineral Point*	Sophomore
Roberts, Helen Adeline	*Superior*	Junior
Robertson, Lucile Clarinda	*Wauston, Ill.*	Sophomore

Rogan, Theresa Ann	*Oconomowoc*	Freshman
Rogers, Mabelle Harriet t c	*Madison*	Junior
Rosencrans, Mary Calkins	*Prairie du Chien*	Sophomore
Runge, Elsie t c	*Madison*	Junior
Russell, Harriet Sophia	*Muncie, Ind.*	Senior
Ryan, Eunice Veronica	*Madison*	Junior
Scholes, Bonnie Elizabeth	*Green Lake*	Senior
Schreiber, Ruth Irma	*Madison*	Sophomore
Scofield, Florence Nichols t c	*La Crosse*	Junior
Scovill, Luella Mae t c	*Rockford, Ill.*	Senior
Shenkenberg, Evelyn Gladys	*Waterford*	Freshman
Shepard, Katherine Helen	*Mineral Point*	Junior
Shoemaker, Ella Marie	*Janesville*	Freshman
Simmonds, Nina	*Fontana*	Freshman
Smith, Eunice Grant	*Hinsdale, Ill.*	Freshman
Smith, Helen Mary	*Wauwatosa*	Freshman
Snyder, Lucile Barbara	*Massillon, Ohio*	Sophomore
Solomon, Margaret	*Chicago, Ill.*	Freshman
Stark, Saidee Ethel t c	*Sun Prairie*	Junior
Stegner, Mabel Jessie t c	*Sioux Falls, S. D.*	Junior
Stewart, Laura Miriam t c	*Mauston*	Senior
Swan, Ellen Alice	*Storm Lake, Ia.*	Freshman
Taber, Gladys	*Argos, Ind.*	Freshman
Tripp, Jennie Louise	*Belvidere, Ill.*	Sophomore
Vognild, Elvira Amanda	*Chicago, Ill.*	Freshman
Ward, Lanore	*Fairmont*	Freshman
Weiss, Florence Marie	*Madison*	Sophomore
Whitney, Alice	*Madison*	Freshman
Winans, Luella Minett	*Olney, Ill.*	Freshman
Witcher, Alice	*Olney, Ill.*	Freshman
Witwen, Barbara Jane	*Baraboo*	Freshman
Woll, Margaret Louise	*Madison*	Freshman
Woodward, Judith	*Madison*	Sophomore

—131

Adult Specials—Long Course

Baker, Raymond	*Rewey*
Bemis, Francis Gesner	*Janesville*
Bradley, Allen Robert	*Toledo, Ohio*
Brann, John William	*Bailey's Harbor*
Brittingham, Nelson George	*Gomez Palacio, Dgo, Mex.*
Geraldson, Morton Leo	*Manitowoc*
Graves, Burrell Pinckney	*Redgranite*
Hanson, Lewis Peter	*Madison*
Harris, George Garold	*Viroqua*
Kennedy, Stephen Francis	*Madison*
Morris, George Charles	*Madison*
Morrow, Vance Roger	*Steubenville, Ohio*
Pierce, Henry Leaver	*Elkhorn*

Rodgers, Vincent Bradley	*Youngston, Ohio*	
Schoenfeld, William Alfred	*Madison*	
Schutte, Carl Jacobus Erasmus	*Pretoria, S. Africa*	
Stewart, Lee Hardy	*La Moure, N. D.*	
Watrud, Hjalmar Oliver	*Blanchardville*	
Webster, Howard Porter	*Independence, Ia.*	
Whipple, Frank Ryce	*Duluth, Minn.*	
William, John Weston	*Chicago, Ill.*	—21

Middle Course—Adult Specials

Albrecht, Henry Christ	*Madison*	
Brown, Owen	*Waco, Texas*	
Dye, John Thomas Jr.	*Noblesville, Ind.*	
Flentye, Harry Lincoln Jr.	*Chicago, Ill.*	
Hoyord, Walter Ernest	*Scandinavia*	
McClary, Orson Rood	*Oak Park, Ill.*	
McLeod, Donald John	*Butte, Mont.*	
Martin, Charles Henry	*Osceola*	
Muth, Egbert	*Sheboygan*	
Nelson, Henry Turner	*London, Ohio*	
Nolte, Edward Henry	*Duluth, Minn.*	
Robotka, Frank	*Franksville*	
Wilson, James Delaware	*Chicago, Ill.*	—13

Adult Specials—Home Economics Course

Avery, Rose Foster	*Philadelphia, Pa.*	Freshman
Bristol, Reva Ernestine	*Madison*	Freshman
Miller, Clara Josephine	*Madison*	Freshman
		—3

WISCONSIN LIBRARY SCHOOL

Balch, Ruth	*Ravinia, Ill.*
Boehnken, Susan W.	*St. Louis, Mo.*
Castor, Florence Rose	*Waseca, Minn.*
Clausen, Malvina C.	*Neenah*
Drake, Ruth Bradley	*Franklin, N. H.*
Eckel, Elizabeth	*St. Joseph, Mo.*
Fawcett, Nellie M.	*Cedar Rapids, Ia.*
Glazier, Pearl Pember	*Lincoln, Nebr.*
Green, Edna Sue	*Charlevoix, Mich.*
Hayward, Ruth Pauline	*Beloit*
Heins, Dorothea Catherine	*Wittenberg*
Hicks, Mary Lydia	*Rockford, Ill.*
Ives, Mary	*Antigo*
Jillson, William Everett	*Crete, Neb.*
Leaf, Grace Mildred	*Emporia, Kans.*

LeRoy, Maude	*Augusta*
Liedloff, Ottilie Louise	*Mankato, Minn.*
Pfeiffer, Helen	*St. Joseph, Mo.*
Richardson, Gertrude	*St. Paul, Minn.*
Robbins, Ethel Alice	*Cedar Rapids, Ia.*
Ronan, Elizabeth C.	*Lansing, Mich.*
Smith, Gladys	*Wallace, Idaho*
Stetson, Ruth Augusta	*Deer Lodge, Mont.*
Thieband, Gertrude	*Peru, Ind.*
Van Der Haagen, Wilhelmina	*Grand Rapids, Mich.*
Wykes, Sadie Pearl	*Grand Rapids, Mich.*

—26

JOINT COURSE

Cook, Lillian Elizabeth	*Park Falls*
Davis, Florence Hume	*Freeport, N. Y.*
Dickerson, Agnes	*Helena, Mont.*
Ely, Dorothy	*Madison*
Farquhar, Alice M.	*Chicago, Ill.*
Flower, Dorothy	*Madison*
Norton, Mary Elizabeth	*Faulkton, S. D.*
Potts, Marian Edith	*Appleton*

—8

SUMMER SESSION OF 1911

LETTERS AND SCIENCE

Graduates

Adams, Beverly Fletcher — *Cambria*
Ph. B., University of Wisconsin

Adams, Lewis Elroy — *Abilene, Tex.*
B. A., Simmons College

Allen, Amy — *Milwaukee*
B. A., University of Wisconsin

Allmendinger, Olla — *Marion, O.*
Ph. B., Wooster College

Alvord, Katharine Sprague — *Madison*
M. A., Columbia University

Amberson, Matilda — *Port Huron, Mich.*
B. A., University of Michigan

Anderson, Hattie Rebecca — *La Crosse*
B. A., University of Chicago

Anderson, Homer Willard — *Onalaska*
B. A., Highland Park College

Andressohn, John Carl, g — *Milwaukee*
B. A., University of Wisconsin

Angell, Martin Fuller — *Albuquerque, N. Mex.*
M. A., University of Wisconsin

Arends, Thomas D. — *Germania, Ia.*
B. A., German Presbyterian Seminary, Dubuque

Armstrong, Susan Naylor — *Madison*
B. A., University of Wisconsin

Ash, Isaac Emery, g — *Madison*
B. A., West Virginia Wesleyan University

Atkinson, John Hampton — *Fulton, Mo.*
M. A., Columbia University

Bachman, Freda Marie, g — *Madison*
M. A., Miami University

Baker, Ross Allen, g — *Green Castle, Ind.*
M. A., De Pauw University

Banks, Charles — *Kirksville, Mo.*
B. A., Kirksville State Normal

Bauchmiller, Helen Susan — *Dayton, O.*
B. A., Oberlin College

Beall, Cyrus Wendell — *Franklin, Va.*
M. A., Randolph Macon College

†Bear, Lloyd Elson — *Monroe*
B. S., Leander Clark University

† Advanced course for the training of teachers.

Beecher, Benjamin Sanford — *Peoria, Ill.*
B. A., University of Wisconsin
Benger, Ernest Baden — *Louisville, Ky.*
B. S., Grinnell College
Bennett, Frank William — *Peoria, Ill.*
B. A., University of Chicago
Beyer, Theodore Ernest, g, m — *Milwaukee*
B. A., Yankton College
Bird, Hugh Stockdell — *Fredericksburg, Va.*
B. A., University of Nashville
Black, John Donald — *Fort Atkinson*
M. A., University of Wisconsin
Blakeslee, Lella Josephine — *Waukesha*
B. A., Rockford College
Blankenagel, John Charles — *Milwaukee*
B. A., University of Wisconsin
Bliefernicht, Edmund Robert — *New Ulm, Minn.*
B. A., Northwestern College, Watertown
Bliss, Myrtie Rundlett — *Richland Center*
B. S., University of Wisconsin
†Bohannon, Charles D., g — *Columbus, O.*
B. A., University of Nebraska
Bohannon, Ida — *Salina, Kas.*
B. L., Kansas Wesleyan University
Bonness, Hazel — *Minneapolis, Minn.*
B. S., University of Minnesota
Borgers, William Benjamin — *Grand Rapids, Mich.*
B. A., University of Wisconsin
Borresen, Alice Julia — *La Crosse*
B. A., University of Wisconsin
Bost, Ernest Lesley — *Elizabeth, Ill.*
M. A., Greenville College
Botkin, Clayton Winfield — *Ottumwa, Ia.*
B. A., University of Indiana.
Bowman, Charles Bronson — *Naperville, Ill.*
M. A., Northwestern College
Bowman, J. Craig — *Upper Sandusky, O.*
B. S., University of Chicago
†Bragg, John Delos — *Zanesville, O.*
B. A., Ohio Wesleyan University
Bragg, Thomas — *Auburn, Ala.*
M. S., Alabama Polytechnic Institute
Brainard, Dudley Shattuck — *Slayton, Minn.*
B. A., Carleton College
Brewer, Robert Kemp — *Mineral Point*
M. A., University of Wisconsin

† Advanced course for the training of teachers.

Bridge, Earle Read — *Galesburg, Ill.*
B. S., Knox College

†Bridgman, Robert White, g — *Madison*
B. A., University of Wisconsin

†Brigham, Aldis — *Bayfield*
B. A., Lawrence College

Brindley, William Arthur — *Cornell*
B. A., University of Wisconsin

†Brown, Winfred Q. — *Cincinnati, O.*
B. S., Valparaiso University

Browne, Eber Glenn — *Long Beach, Cal.*
B. L., University of California

Bruner, Lena Celestus — *Franklin, Ind.*
B. S., Franklin College

†Bucknam, Kate Dana — *Washington, D. C.*
B. L., University of Wisconsin

Budde, Clarmae, g — *Marcus, Ia.*
B. A., Stanford University

Burg, Allen George — *Calumetville*
B. A., Ripon College

Burns, Maybel Ward — *Monmouth, Ill.*
B. A., Monmouth College

Burrage, Dwight Frafton — *Crete, Nebr.*
M. A., Amherst College

Buth, Otto Edward — *Hartford*
B. A., University of Wisconsin

Calhoun, Arthur Wallace — *Tallahassee, Fla.*
B. A., University of Pittsburg

Cannon, Lee Edwin — *Pittsfield, Ill.*
M. A., University of Wisconsin

Carney, Chester Sherman — *Bay City, Mich.*
B. A., University of Michigan

Carter, Fred Gay — *Madison*
B. A., University of Wisconsin

Carter, Homer McClelland, g, m — *Madison*
B. A., Beloit College

Carter, Lillian Gertrude — *Osgood, Ind.*
M. A., University of Chicago

Cast, Gottlob Charles, g — *Fayette, Mo.*
M. A., Northwestern University

Challoner, Agnes — *Madison*
B. A., University of Wisconsin

†Chandler, Zach Anson — *Oregon*
B. L., University of Wisconsin

Chaney, George Arthur — *Iowa City, Ia.*
M. S., Highland Park College

† Advanced course for the training of teachers.

Chapman, Lindley Ray — *Sioux City, Ia.*
B. A., Morningside College
Chen, Wei Ping — *Peking, China*
M. A., Ohio Wesleyan University
Clark, Arthur John — *East Lansing, Mich.*
B. A., University of Wisconsin
Clark, Olive Eloise — *Corona, Cal.*
B. A., Yankton College
Cochrane, Ava Luella — *Madison*
B. A., University of Wisconsin
Cockerill, Cecil — *North Fork, Va.*
B. A., Valparaiso University
Colegrove, Jay Tilden — *Cedar Rapids, Ia.*
B. A., University of Iowa
Collins, Mary — *La Salle, Ill.*
B. A., University of Illinois
†Comins, Harry Mason — *Detroit, Mich.*
B. A., University of Michigan
Condit, Olive Blanche — *Delta, Colo.*
B. A., University of Colorado
Cooledge, Leslie H. — *De Smet, S. D.*
B. S., South Dakota State College
Cooper, Elva — *Milwaukee*
M. A., University of Wisconsin
Cotterill, Robert Spencer — *Winchester, Ky.*
M. A., University of Virginia
Cotton, William Jacobs, g — *Madison*
B. A., Ripon College
Crandall, Irving Bardshar — *Chattanooga, Tenn.*
B. A., University of Wisconsin
Crane, Fred Randall — *Madison*
M. S., University of Illinois
Crawford, Cora Belle — *Greenfield, O.*
B. S., Monmouth College
Crowe, Stanley E. — *Jacksontown, O.*
B. A., Ohio State University
Curme, Gertrude — *Evanston, Ill.*
B. S., Northwestern University
Davison, Walter Bert — *Indianapolis, Ind.*
B. A., University of Wisconsin
†DeCamp, Lester Otis — *New Carlisle, Ind.*
Ph. B., Albion College
Decker, Paul Herman — *La Moille, Ill.*
M. A., University of Wisconsin
Desai, Amritlal C., — *New Carlisle, Ind.*
L. Ag., Bombay University

† Advanced course for the training of teachers.

†Desmond, James Francis — *Madison*
B. A., University of Wisconsin

Dickore, Marie Paula — *Cincinnati, O.*
M. A., University of Cincinnati

Diemer, Melvin Edison — *Madison*
M. A., University of Wisconsin

Dietrichson, Gerhard, g — *Menomonie*
B. S., University of Minnesota

Diez, Max — *St. Louis, Mo.*
M. A., Washington University

†Dixon, Raymond E., — *Kingston*
B. A., University of Wisconsin

Doan, Edna — *Amo, Ind.*
B. A., Earlham College

Dockery, Leota Lillian — *Kirksville, Mo.*
B. A., University of Missouri

Dorsey, Maxwell Jay — *Dresden, O.*
M. S. A., Cornell University

†Douglass, Anna — *Prairie du Chien*
B. A., University of Wisconsin

Drips, Della Gay, m — *Madison*
B. A., University of Wisconsin

Dynes, Sarah — *Trenton, N. J.*
Ph. B., Cornell University

Eddy, Ralph Lynn — *Rockton, Ill.*
B. S., Beloit College

Edwards, Murray French — *Kirkwood, Mo.*
B. S., Virginia Military Institute

Edwards, Richard Alexander — *Bedford, Ky.*
B. A., Kentucky State University

Egan, Esther Livingston — *Grinnell, Ia.*
B. A., Drury College

Eitzen, Meta — *Columbia, Mo.*
M. A., University of Missouri

Ellingson, Emil Oscar, g — *Madison*
B. S., St. Olaf College

Emery, William Thomas — *La Crosse*
B. S., Beloit College

Erb, Elizabeth Adele Sophia — *Appleton*
B. L., Lawrence College

Ernst, Frederic, g — *Madison*
M. A., University of Wisconsin

Estey, James Arthur — *Wolfville, Nova Scotia*
B. A., Oxford University

Finkbeiner, Thomas — *Naperville, Ill.*
Ph. M., Northwestern College

† Advanced course for the training of teachers.

Fisher, Martin Luther — *Lafayette, Ind.*
B. S., Purdue University
Flood, Edith Florence — *Terre Haute, Ind.*
B. A., University of Indiana
Flynn, Michael Henry — *Hartford*
B. A., University of Wisconsin
Ford, Charles F. — *Edwardsville, Ind.*
B. A., Knox College
Ford, Mary Elizabeth — *Georgetown, Ky.*
B. A., Georgetown College
Fosler, Constance — *Richmond, Ind.*
M. A., Earlham College
Foster, Margaret — *Ashland, Ky.*
B. A., University of Michigan
Fowler, John Denison — *Rochester, N. Y.*
B. A., University of Rochester
†Fowler, John Frederick — *Milwaukee*
B. A., University of Wisconsin
Friedrich, Alexander Ernest, ls — *Kendall*
LL. B., Georgetown University
Friedrich, George William — *Fond du Lac*
B. A., Ripon College
Funk, Ebbert Arl — *Kirksville, Mo.*
B. A., Kirksville State Normal
Gage, Edmund Vernon — *Bradford, Mass.*
M. A., Pennsylvania State College
Gale, Zona — *Portage*
M. L., University of Wisconsin
Galland, Joseph Stanislaus, g — *Madison*
M. A., University of Wisconsin
Garber, Agnes Ellinor — *Indianapolis, Ind.*
B. A., Vassar College
Garwood, Lynn Eugene, g — *Madison*
B. A., Otterbein University
Gee, Wilson Parham — *Santuck, S. C.*
M. A., University of South Carolina
Gibson, Fremont Samuel — *Charles City, Ia.*
Ph. B., Memorial University
Gil, Henry — *La Plata, Argentine Republic*
M. A., University of Pennsylvania
Gilbert, Alfred Holley — *Lexington, Ky.*
B. S., University of Vermont
Gilbert, Ruth Hughes — *Palo Alto, Cal.*
B. A., Leland Stanford Jr. University
Gillaspie, Carbon — *Boulder, Colo.*
M. D., University of Colorado

† Advanced course for the training of teachers.

Givens, Mary Louise — *Fayette, Mo.*
B. A., Randolph Macon College
Gorsline, William Wood — *Peoria, Ill.*
B. S., University of Chicago
Granger, Roy T. — *Denver, Colo.*
B. A., Cornell College
Grauman, Emma — *Madison*
B. A., Cornell University
Graybill, Jacob Light — *Palmyra, Pa.*
B. S., Michigan Agricultural College
Greene, Pearl Stuart — *Woodstock, Ill.*
B. A., Northwestern University
Gregory, Marie — *West Depere*
B. A., University of Wisconsin
Greubel, Otto Washington — *Milwaukee*
M. A., University of Wisconsin
Hale, Berdena M., — *Omro*
Ph. B., University of Chicago
Hall, Eliza Platt — *Chicago, Ill.*
M. S., Northwestern University
Hall, Fanny Aline — *Chicago, Ill.*
Ph. B., Northwestern University
Hall, Florence M., — *Spokane, Wash.*
B. L., University of Michigan
Halsey, Cora Moore — *Oshkosh*
Ph. B., University of Wisconsin
Hamilton, Maud, g — *Emporia, Kas.*
B. A., Cornell University
Hannum, Alva Davis — *Sabino, O.*
B. A., Lima College
Harrington, George Traver — *Washington, D. C.*
B. S., University of Vermont
†Harris, Ethel Ava — *Kilbourn*
B. A., Lawrence College
Harris, Thomas Luther — *Waverly, Ill.*
M. A., Ohio State University
Haubrich, Reinhold — *Kenosha*
B. S., German Wallace College
Hawkins, Bertha Elizabeth — *Richmond, Ind.*
M. A., University of Indiana
Hearon, Richard Augustus — *Ft. Worth, Tex.*
B. A., George Peabody College
Heddle, John R. — *Madison*
B. A., University of Wisconsin
Hemman, Laurence Merrill — *St. Croix Falls*
B. S., Tufts College

† Advanced course for the training of teachers.

Henry, Alice Aline — *Elroy*
B. A., University of Wisconsin

Henry, Nelson Bollinger — *Bonne Terre, Mo.*
Ph. B., Central College

Heren, Mabel — *Evanston, Ill.*
M. S., Northwestern University

Hewitt, Irving John — *Madison*
B. A., University of Wisconsin

Higbee, Hazel Bessex — *Madison*
B. A., University of Wisconsin

Higgins, Abby May — *Berlin*
B. A., Ripon College

Hill, John — *Dresden, Tenn.*
M. A., Vanderbilt University

Hjelle, Carl Alfred — *Decorah, Ia.*
B. A., Norwegian Luther College

†Hodge, Willard Wellington — *Waunakee*
B. A., Ripon College

Hodgson, Roberta — *Athens, Ga.*
B. S., Teachers College, N. Y.

Hoefer Carolyn — *Freeport, Ill.*
B. A., University of Wisconsin

Holmes, Helma Lou — *Lincoln, Nebr.*
B. A., University of Nebraska

Holt, Harriette Grace — *Madison*
M. A., Iowa University

Hornbeck, Stanley Kuhl — *Pueblo, Colo.*
B. A., Oxford University

Hospes, Cecelia Lizzette — *St. Louis, Mo.*
M. A., Washington University

Hotchkiss, Ruth — *Akron, O.*
Ph. B., Buchtel College

Howard, Russell Samuel — *Troy, N. Y.*
B. S., University of Illinois

Hoyt, Grace Elizabeth, g — *Madison*
B. A., University of Wisconsin

Hubbard. Winfield Scott — *Madison*
M. A., Columbia University.

Hunter, Roy Bryant — *Bridgeport, O.*
B. A., Yale University.

Immell, Lois Constance — *Denver, Colo.*
B. A., University of Wisconsin.

Infante, Luis Cirilo — *Huaras, Peru.*
B. A., University of Wisconsin.

Irish, Elizabeth Hibbard — *Eleva*
B. A., Milwaukee College.

---

† Advanced course for the training of teachers.

Iverson, Peter J., *Michigan City, N. Dak.*
B. A., Luther College.
Iyenaga, Toyokichi *Chicago, Ill.*
Ph. D., Johns Hopkins University.
Jahr, Charles Aten *Middleton*
Ph. B., University of Wisconsin.
James, Margaret Elizabeth *Waukesha*
B. A., Beloit College.
Johnson, Aaron Guy, g *Madison*
M. S., Purdue University.
Johnson, Axel *Madison*
M. A., University of Kansas.
Johnson, Helen Moore *Osceola, Mo.*
B. A., University of Missouri.
Johnson, Isabel Reid *Portage*
B. A., University of Wisconsin.
Johnson, Roy Winton *Gibson City, Ill.*
B. A., Central College.
Johnson, Theodore John *Hobart, Ind.*
B. A., University of Indiana.
Johnstone, Albert Henry *Croton, Ont.*
B. A., University of Wisconsin.
Jordan, John Henry *Superior*
M. A., University of Wisconsin.
Jordan, Lottie Hannahs *Kenosha*
B. A., University of Wisconsin.
Judd, Roy Clair, g *Madison*
Ph. B., University of Wisconsin.
Kasten, Marie A., *Milwaukee*
B. A., University of Wisconsin.
Keeler, Fred Crosby *Belvidere, Ill.*
B. A., University of Illinois.
Kemp, Margaret Stanley *Minneapolis, Minn.*
B. L., Carleton College.
Kempthorne, William Bismarck *Platteville*
Ph. B., University of Wisconsin.
Keyser, Clarence *West Jefferson, O.*
B. S., Denison University.
Kidd, John William *College Station, Tex.*
E. E., Texas Agricultural and Mechanical College.
King, Grace Luella *Dundee, N. Y.*
M. C. S., Highland Park College.
Kirby, Harriet Rebecca *Columbus, O.*
M. A., Ohio State University.
Kirch, Annie B., *Madison*
B. A., University of Wisconsin.
Kircher, Irving Henry *Webster, N. Y.*
B. Pd., Michigan Normal College.

Klahr, Leora Einsel — *Walla Walla, Wash.*
B. S., University of Wisconsin.
Klepinger, Howard Albert — *Eaton, O.*
B. A., Earlham College.
Kline, Aaron — *Wanotah, Ind.*
B. A., University of Indiana.
Klotz, Ralph Quad — *St. Croix Falls*
B. A., University of Wisconsin.
Knoelk, William C., — *Boscobel*
B. A., University of Wisconsin.
Krauz, Hermann Ernest — *Minonk, Ill.*
B. A., Lawrence College.
Krause, Lenore — *Madison*
B. A., University of Wisconsin.
Lacy, Henry Veere — *Milwaukee*
B. S., Ohio Wesleyan University.
Lacy, Mattie Bashabel — *Columbus, Ind.*
B. A., University of Indiana.
Lamb, Charles Emery — *Linden*
Ph. B., University of Wisconsin.
Lantis, Lee Ora — *Camden, O.*
M. A., Miami University.
Lantz, Park Gresh — *Milton, Ind.*
B. A., University of Indiana.
Lantzer, Albert Franklin — *Marion, O.*
M. A., Ohio Northern University.
Latham, Lucy Elizabeth — *Caledonia, Minn.*
B. A., Carleton College.
Lawson, Paul Bowen — *University Park, Ia.*
B. S., Central Holiness University.
Leasure, Brady Earl — *Zanesville, O.*
B. S., Ohio Northern University.
Leedy, John Wentworth — *University Park, Ia.*
B. S., University of Minnesota.
Leeper, Bessie Baker — *Greenville, Mo.*
B. Pd., Missouri State Normal.
Leins, Lenore — *West Bend*
Ph. M., University of Wisconsin.
Leonard, Walter A., — *Evanston, Ill.*
B. A., Nebraska State University.
Leonard, William Ezekiel, g — *Bellevue, Nebr.*
Ph. B., Grinnell College.
Lewis, Howard T., g — *Madison*
M. A., University of Wisconsin.
Lewis, Janette — *Rockwell City, Ia.*
B. A., Cornell College.
Lobb, Ida B. — *Ripon*
B. A., Ripon College.

Loshinski, John Nicholas — *Ripon*
B. A., Ripon College.

Lathrop, Mary Olive — *Zumbrota, Minn.*
B. A., University of Minnesota.

Lynn, Caro — *Tarkio, Mo.*
M. A., Tarkio College.

†Lyon, Leslie Walter — *Crystal, Mich.*
B. A., Wheaton College.

Lyon, Robert Crawford — *Joliet, Ill.*
B. S., Knox College.

McCarty, Leslie Combes — *Brainerd, Minn.*
B. A., University of Indiana.

McCauley, George Vest — *Wilmette, Ill.*
M. A., University of Wisconsin.

McClain, Charles Delbert — *Mt. Pleasant, Ia.*
B. A., Iowa Wesleyan University.

McCordic, Ada May — *Zion City, Ill.*
B. A., Zion College.

McDaniel, Moses — *Brooklyn, Ind.*
B. A., University of Wisconsin.

McDonald, Ethel — *Columbus, O.*
B. A., Ohio State University.

MacIntosh, Frances Mary — *Madison*
B. A., University of Wisconsin.

McMullin, Jennie Willing — *Terre Haute, Ind.*
Ph. B., University of Chicago.

McNulty, Kathryne Edna — *Sarcoxie, Mo.*
B. P., Missouri State Normal.

Madden, Pauline — *Mound City, Kas.*
B. A., Kansas University.

Mallison, Blanche Janet — *Akron, O.*
B. A., Buchtel College.

Mallory, Meredith — *Batavia, Ill.*
B. A., University of Illinois.

Martens, Henry Christoph — *Milwaukee*
M. A., University of Wisconsin.

†Martin, Grace Williams — *North Manchester, Ind.*
B. A., University of Indiana.

Mason, Harriet — *Fond du Lac*
B. A., University of Wisconsin.

Mattley, Maud — *Oregon City, Ore.*
B. S., Oregon Agricultural College.

Maurer, Elizabeth King — *Milwaukee*
M. A., University of Wisconsin.

Maurer, Heinrich Herman — *Milwaukee*
M. A., University of Wisconsin.

† Advanced course for the training of teachers.

Mehner, Albert Hugo — *Madison*
B. A., University of Washington.
Meloche, Clifford Cyrille, g — *Madison*
M. A., University of Wisconsin.
Michell, Robert Bell — *Perth, Ontario*
M. A., Harvard University.
Miller, Clara Harriette — *Plainfield, Ia.*
M. Di., Iowa State Teachers College.
Miller, Emerson Romeo — *Auburn, Ala.*
M. S., University of Michigan.
Miller, Grace Christian — *Covington, Tenn.*
B. A., University of Tennessee.
Miller, Paul Gerard, g — *Northfield, Minn.*
B. A., University of Wisconsin.
Misener, Lena E., — *Monmouth, Ill.*
B. A., Monmouth College.
Moroney, Kathleen — *Dallas, Tex.*
B. A., University of Wisconsin.
Mowry, Guy Leroy — *Wixom, Mich.*
B. Pd., Michigan State Normal College.
Mueller, Hermann C. P., g — *Milwaukee*
B. A., University of Wisconsin.
†Mull, Lewis Benjamin — *Ottumwa, Ia.*
B. A., University of Indiana.
Munro, George Wesley — *La Fayette, Ind.*
E. E., Purdue University.
Murray, Grant S., — *Jefferson City, Mo.*
B. A., Howard University.
†Murray, Julia Aloysius — *Madison*
B. A., University of Wisconsin.
Nardin, Charles Carleman — *Hicksville, O.*
B. S., Buchtel College.
Nebel, Walter, g — *Madison*
M. S., University of Wisconsin.
Neystrom, Paul H., — *Oshkosh*
Ph. M., University of Wisconsin.
Nolte, Elma Louise — *Richmond, Ind.*
Ph. B., Earlham College.
Nordgaard, Martin A., — *Northwood, Ia.*
B. A., St. Olaf College.
Norton, Mary Bell — *Osage, Ia.*
M. Di., Iowa State Teachers College.
Okami, Shinji — *Tokyo, Japan*
B. A., Waseda University.
Olmstead, Mabel — *St. Louis, Mo.*
B. A., Washington University.

† Advanced course for the training of teachers.

O'Malley, Robert Connor — *Madison*
B. A., University of Wisconsin.

Owen, Jessie Louise — *Milton Junction*
B. A., Lawrence College.

Palmer, Emily G., — *Salem, Ore.*
B. A., Colorado College.

Parsons, Arthur J., — *Delaware, O.*
B. S., Ohio Wesleyan University.

Patterson, Alice Blanche — *Topeka, Kas.*
M. A., Monmouth College.

Paul, Joseph B. — *Huntington, Ind.*
B. A., University of Indiana.

Pearsall, Phebe Lorena — *Minneapolis, Minn.*
B. S., Beloit College.

Peltier, George Leo (In absentia) — *Grand Rapids*
B. A., University of Wisconsin.

Perkins, Edgar V., — *Oblong, Ill.*
B. S., Central Normal College.

Peterson, Aslak Samuel — *Oxfordville*
B. A., Luther College.

Pietenpol, Henry William — *Waupun*
M. A., Central University of Iowa.

Pietenpol, William Brasser — *Waupun*
B. A., Central University of Iowa.

Plumb, Della Elizabeth — *Milton*
B. A., Milton College.

Porter, Frank — *New Straitsville, O.*
B. S., Ohio State University.

Potter, Paul David — *Madison*
M. A., University of Wisconsin.

Pridmore, James Cleveland — *Gaffney, S. C.*
B. S., Clemson Agricultural College.

Prout, Sadie Malvina — *Ripon*
B. A., Ripon College.

Quinn, Roy Hamilton — *Badger, S. D.*
B. S., South Dakota State College.

Radford, Lawrence — *Eureka, Ill.*
B. A., Eureka College.

Raeder, Luise — *Evanston, Ill.*
B. L., Northwestern University.

Rawlings, Fred B., — *Sandersville, Ga.*
B. A., Emory College.

Ray, Truly Bernice — *Bloomington, Ind.*
B. A., University of Indiana.

†Reid, Harry Cravn — *Pendleton, Ind.*
B. A., University of Indiana.

† Advanced course for the training of teachers.

Rest, Oscar Walter — *Gladbrook, Ia.*
B. A., Charles City College.

Rice, Mary Louise — *Lewiston Ill.*
B. A., University of Wisconsin.

Richardson, Clara Porter — *Evansville*
B. A., Beloit College.

Rieth, Pauline Katherine — *Denton, Nebr.*
B. A., University of Nebraska.

Roberts, Agnes Ida — *Milwaukee*
B. A., University of Wisconsin.

Robertson, James Earl — *Fremont, Mich.*
B. S., Michigan Agricultural College.

Roeseler, John Samuel — Madison
B. S. A., University of Wisconsin.

Roll, Charles — *Pimento, Ind.*
B. A., University of Indiana.

Ross, Amy Belle — *Waukesha*
B. A., Beloit College.

Rounds, Charles Ralph — *Whitewater*
Ph. B., University of Wisconsin.

Rowe, George Davis — *Fredericksburg, Va.*
B. A., Fredericksburg College.

Ruddock, Edith Lou — *Cannon Falls, Minn.*
B. L., Carleton College.

Rumsey, Nellie A. — *Spring Valley, Minn.*
B. S., Carleton College.

Runge, Alma Matilda — *Madison*
B. A., University of Wisconsin.

Runge, Lulu Lillian — *Madison*
M. A., University of Wisconsin.

Russell, William Giles — *Peoria, Ill.*
Ph. B., University of Wisconsin.

Samuels, Alexander F., g — *West Salem*
B. A., University of Wisconsin.

Schaffrath, William — *Madison*
B. A., University of Wisconsin.

Schmidt, Alfred Henry — *New Orleans, La.*
B. A., Tulane University.

Schuette, Henry August, g — *Green Bay*
B. S., University of Wisconsin

Schultz, Rudolph Jahnke — *St. Louis, Mo.*
M. A., University of Wisconsin.

Schweitzer, Louise — *Grand Rapids, Mich.*
B. A., University of Michigan.

Sealock, William Elmer — *Circleville, O.*
B. A., Ohio State University.

---

†Advanced course for the training of teachers.

Secrist, Horace — *Madison*
M. A., University of Wisconsin.

†Sell, Martha Erbach — *Milwaukee*
B. A., University of Wisconsin.

Shade, Ernest Franklin — *Medina, O.*
B. A., Ohio State University.

Sharpe, Mabel Lovejoy — *Garden City, Kas.*
B. A., University of Minnesota.

Shelton, Margaret — *Rhinelander*
B. A., University of Wisconsin.

Sherrill, Jennie Bentley — *Madison*
B. L., University of Wisconsin.

Sherwood, Robert Griffin — *Ripon*
M. A., University of Wisconsin.

Shields, Florence Lavinia — *Humboldt, Kas.*
B. A., University of Kansas.

Shilling, David Carl — *Hamilton, O.*
B. A., Miami University.

Shine, Mary Lambert — *Newport, Ky.*
M. A., University of Cincinnati.

Shire, Ann Matilda — *Kansas City, Mo.*
B. A., University of Kansas.

†Shortridge, Wilson Porter — *Minneapolis. Minn.*
B. A., University of Indiana.

Simmers, Charles Luther — *Madison*
B. A., Iowa State University.

Simpson, Orson L., — *Freeport, Mich.*
B. S., University of Michigan.

Sinclair, Alice May — *New Lisbon*
B. A., Beloit College.

†Sister Mary George Adamson — *Sinsinawa*
B. A., Washington University.

Sister Mary James Cavanaugh — *Sinsinawa*
B. A., University of Wisconsin.

Sister Mary Paul Long — *Sinsinawa*
B. S., University of Chicago.

Skaaland, Sven Gerhart — *Foreston, Minn.*
B. A., Luther College.

Smiley, Virgil D., — *Franklin, Ind.*
B. S., Franklin College.

Smith, Bert C., — *Eaton, O.*
B. S., Lebanon University.

Smith, Gilbert Morgan, g — *Beloit*
B. S., Beloit College.

Smith, Herbert Lee — *Prattville, Mich.*
B. S., Greenville College.

† Advanced course for the training of teachers.

Smith, Larue Free — *Fox Lake*
B. S., Allegheny College.
Smith, Marie Louise — *Ada, Minn.*
B. A., Knox College.
Smith, Maud Emily — *Madison*
B. A., University of Wisconsin.
Snavely, William Garfield — *Massillon, O.*
B. A., Otterbein University.
Solberg, Charles Orrin — *Northfield, Minn.*
M. A., Beloit College.
Sosa, Hermes A., — *Asuncion, Paraguay, S. A.*
B. A., National College of Paraguay.
Soukup, Rudolph — *Sturgeon Bay*
B. A., University of Wisconsin.
Spencer, William Alexander — *Topeka, Kas.*
B. A., Washburn College.
Sperle, Diana Henryetta — *McFarland*
B. A., University of Wisconsin.
Standish, Clara May — *Segreganset, Mass.*
B. A., Tufts College.
Stauffacher, Albert Daniel — *Monroe*
B. A., Northwestern College.
Stavrum, Esther A., — *La Crosse*
B. A., University of Wisconsin.
Stephens, George Ware — *Madison*
M. A., University of Wisconsin.
Stevens, Wyandotte James — *St. Louis, Mo.*
M. A., Lebanon University.
†Stevenson, John Alford, g — *Olney, Ill.*
B. A., Ewing College.
Stiehm, Ewald Otto — *Johnson Creek*
B. A., University of Wisconsin.
Stillman, Harold Clifton — *Greenville, O.*
B. A., Milton College.
Stoehr, Flora Eugenie — *Cincinnati, O.*
B. A., University of Cincinnati.
Swenehart, John Henry, Jr. — *Brookings, S. D.*
B. S., South Dakota State College.
Taper, Thomas Arthur — *Lake Linden, Mich.*
B. S., University of Michigan.
Taylor, Florence Wills — *Linden*
B. A., University of Wisconsin.
Teaz, Richard — *Brooklyn, N. Y.*
B. S., New York University.
Thayer, Thaxter Crugier — *Madison*
B. A., University of Wisconsin.

† Advanced course for the training of teachers.

†Thompson, Vida Irene — *Madison*
B. A., Lawrence College.

Thornton, Frances L., — *Charlotte, Va.*
B. A., Woman's College, Charlotte, N. C.

Tiefenthaler, Gustave Edward — *Milwaukee*
LL. B., Marquette University.

Titsworth, Paul Emerson — *Alfred, N. Y.*
Ph. B., Alfred University.

Tomlinson, Wilbur Fisk — *Richland Center*
B. A., Northwestern University.

Torr, Minnie Almeda — *Greencastle, Ind.*
Ph. B., DePauw University.

Trenoweth, Laura — *Central City, Colo.*
B. A., University of Colorado.

Trowbridge, Grace Nelson — *Denver, Colo.*
B. A. Colorado College.

Tucker, Robert H., — *Danville, Va.*
M. A., College of William and Mary.

Voegtle, Anna — *Louisville, Ky.*
B. A., Louisville University.

Volkmann, Hilda C. — *Watertown*
B. A., University of Wisconsin.

de Vries, Louis Peter, g
M. A., University of Wisconsin.

Walker, Adam Alexander — *Albany, N. Y.*
B. A., University of Michigan.

Wallace, Benjamin Bruce — *Deronda*
B. A., Macalester College.

Webb, Roscoe Clayton — *Tracy, Minn.*
B. A., University of Minnesota.

Wertz, Clarence M., — *Shelbyville, Ind.*
B. S., Valparaiso University.

West, Myron Chester — *Beloit*
B. S., Beloit College.

Whitford, Alfred Edwards — *Milton*
B. A., University of Chicago.

Whitney, Henry James — *Ellensburg, Wash.*
B. S., Northwestern University.

Wilce, John Woodworth — *Milwaukee*
B. A., University of Wisconsin.

Wilgus, James Alva — *Platteville*
M. A., Ohio State University.

Williamson, Richard — *Mexico City, Mex.*
B. L., University of Wisconsin.

Wilson, Glorvina — *Ft. Thorn, Ky.*
B. L., Ohio Wesleyan University.

---

† Advanced course for the training of teachers.

Wilson, Leta May — *Madison*
B. A., University of Wisconsin.
Wilson, Sherman Ray — *Muskegon, Mich.*
B. A., University of Nebraska.
Winslow, Mary Amy — *Indianapolis, Ind.*
B. A., Earlham College.
Wishard, Hazel Alys — *Greenwood, Ind.*
Ph. B., Franklin College.
Wodsedalek, Jerry Edward g — *Kewaunee*
Ph. M., University of Wisconsin.
Wolcott, Rose A., — *Cleveland, O.*
Ph. B., Western Reserve University.
Wolf, Edwin Foy — *University Park, Ia.*
B. S., Central Holiness University.
Wolf, George P., — *Random Lake*
B. A., University of Wisconsin.
Wolfe, Howard Webster — *Hanover, Ind.*
B. A., University of Indiana.
Woodford, Burton Hadley — *Bowling Green, Ky.*
M. A., Hamilton College.
Yang, Ying-yueh — *North-Gate, Wusih, China*
M. A., University of Wisconsin.
Yule, Charles Ingalls — *Winnebago*
Ph. B., University of Chicago. —402

Undergraduates and Teachers

Abaly, Winnifred ls — *Madison*
Abbott, Helen — *Chicago, Ill.*
Adams, Stella M. — *Sioux Falls, S. D.*
Albers, Edgar Harvey ls — *Thiensville*
Aldrich, Eleanor Purdy — *Potsdam, N. Y.*
Aldrich, Mildred Isabelle ls — *Milwaukee*
Alexander, Samuel Edward ls — *Riverside, Cal.*
Allen, Ruth Marguerite ls — *Chelsea*
Almy, Hubert St. Claire — *Galesville*
Amundson, Mabel I. ls — *Rice Lake*
Andersen, Christian — *Northfield, Minn.*
Anderson, Charles J. ls — *Madison*
Anderson, Lillian — *Chicago, Ill.*
Appleman, George Mordecai — *Baldwin*
Armbruster, Theresa Marie — *River Falls*
Arnold, Lloyd — *Fort Worth, Tex.*
Arnold, Schuyler ls — *Barnards, N. Y.*
Arnsdorf, Henry G., ls — *Eau Claire*
Arpin, Dan — *Grand Rapids*
Atwood, Fannie — *Madison*
Auby, Leonard James — *Deerfield*
Auerbach, Ida — *Helena, Mont.*

Badger, Ozro Bruce	*Sullivan, Ind.*
Bagley, Lorna Doone ls	*Madison*
Bailey, Herbert Burr	*Jackson, Minn.*
Baird, Edgar Alan	*Stanley*
Baker, Arthur E. ls	*Peoria, Ill.*
Ballard, George Lysle	*Beloit*
Barland, Margaret Dorothea	*Eau Claire*
Barmeier, Floyd Everett ls	*Madison*
Bassett, Norman Douglas ls	*Chicago, Ill.*
Batty, George Miles	*Poynette*
Baum, Harry Neal	*Hollywood, Cal.*
Beach, Paul Mell	*Racine*
Beale, Charles Boddenberg a	*Cairo, Ga.*
Beatty, Bessie	*Beacon, Mich.*
Becker, Herbert William ls	*Chicago, Ill.*
Beers, Ciara Ora	*Platteville*
Beers, Emma Mae	*Platteville*
Belden, Carroll Reed	*Omaha, Nebr.*
Bell, Margaret	*Marysville, Pa.*
Beman, Lynn W.	*Cleveland, O.*
Bennett, Keenan Anslow ls	*Lancaster*
Berger, Walter Julius ls	*Milwaukee*
Bernard, Anna	*Montezuma, Ia.*
Bernard, Verna	*Montezuma, Ia.*
Bielefeldt, Herman August	*Cochrane*
Bilkey, Henry Edward ls	*Dodgeville*
Bishop, Fred G.	*Cassville*
Blackburn, Ralph ls	*Elgin, Ill.*
Blackmun, Roy Martin	*Abbotsford*
Blair, Walter Ellsworth ls	*Winona, Minn.*
Blanding, James L. ls	*Moline, Ill.*
Blanding, Virgil L. ls	*Moline, Ill.*
Blashfield, Herbert Walton	*Boscobel*
Blasingham, Sue	*Logansport, Ind.*
Block, Martha Helene	*Terre Haute, Ind.*
Blood, Emma Belle ls	*Oshkosh*
Bolinger, Marion Tate	*Chicago, Ill.*
Bonesteel, Verne Clinton ls	*Huron, S. D.*
Boon, Sally Knox	*Carthage, Mo.*
Boorse, Arthur Lee e	*Milwaukee*
Borden, William Henry	*Madison*
Borsack, Karl Kasper	*Fond du Lac*
Boss, Freeda ls	*Superior*
Boswell, Clarence Henry	*Rockford, Ill.*
Bower, Regina Marie	*Cincinnati, O.*
Boyagian, Sirrak K. ls	*Harpoot, Turkey*
Braasch, William Karl ls	*Sheboygan*
Bradford, Charles Roy	*Madison*

Brasure, Roy Elwin ls	*Loyal*
Braun, Adolph R.	*Milwaukee*
Breadner, George	*Crandall, Manitoba*
Breen, Helen Marie ls	*Kenwood Park, Ia.*
Brennen, Ann Ursula	*Fort Dodge, Ia.*
Brewer, Jerome Seckel ls	*Chicago, Ill.*
Briggs, Howard Bovee ls	*Arena*
Brinegar, Cora Olive	*Lucas, Ia.*
Brinegar, George H.	*Lucas, Ia.*
Bronson, Alice M.	*Milwaukee*
Brown, Irving Henry g	*Madison*
Brown, Lysle George	*Chicago, Ill.*
Brown, Oscar Phelps	*Menomonie*
Brown, Elsie	*Long Beach, Cal.*
Brown, Fannie Arnetta ls	*Madison*
Brown, Marie Mills	*North Manchester, Ind.*
Brunkhorst, Robert O. ls	*Milwaukee*
Brunow, Walter Theodore	*Milwaukee*
Buchen, Walther Albert	*Theresa*
Burke, Elsie Margaret ls	*Madison*
Burke, Roy Thomas Bernard	*Madison*
Burns, Alice Loretta	*Chicago, Ill.*
Butt, Lillie May	*Dayton, O.*
Butterfeld Jennie Edith	*Cedarburg*
Caldwell, Charles Edwin Jr.	*Chicago, Ill.*
Calef, Evelyn	*Superior*
Callies, Hattie Mary	*Oshkosh*
Campbell, Cora	*Kansas City, Mo.*
Carlson, Eric Gustavus	*Range*
Carpenter, Floyd Goodrich ls	*Madison*
Carse, Earle Russell	*Council Bluffs, Ia.*
Carson, Harriett Mildred ls	*Madison*
Cartier, Morgan Edward ls	*Madison*
Cathcart, Charles William ls	*Madison*
Challoner, John	*Oshkosh*
Chapell, Harriet	*Kansas City, Mo.*
Chapman, Luella Jeanett	*Ft. Atkinson*
Chappell, Ruby Belle	*Eau Claire*
Christians, George Fred ls	*Johnson Creek*
Chu, Chio Ching ls	*Wusih, China*
Cocklin, Nellie Edna	*Platteville*
Coddington, Charles Spencer	*Madison*
Cos, Laurence Smith l	*Barron*
Coerper, Roland Frederick ls	*Hartford*
Commons, John A.	*Madison*
Conaway, Ross K. ls	*Warren, Pa.*
Cone, Rita	*Canton, Ill.*
Cook, Allan Wylie	*Mendota, Ill.*

Cooke, Delmar Gross	*Piper City, Ill.*
Coon, Paul Henry	*Madison*
Corsett, Hallie B.	*Menomonie*
Corwith, Gertrude Lucile	*Wausau*
Cory, Margaret Emma	*Launceston, England*
Coubal Laudimire Joseph ls	*Manitowoc*
Coveney, Blanche Constance	*Cleveland, O.*
Crawford, Charlotte Cushman m	*Oshkosh*
Cronk, Clara Gladys	*Birmingham, Ala.*
Cronin, Mary Jessica	*Hannibal, Mo.*
Cross, Claude Lionel	*Muskegon, Mich.*
Crowley, Jennie Gertrude ls	*Madison*
Cruz, Martin R.	*Manila, P. I.*
Culbertson, Linn Niccolls e	*St. Louis, Mo.*
Curkeet, John E.	*Platteville*
Currie, Constance Mary ls	*Superior*
Curtis, Leroy George	*Waterloo*
Dahl, John Leon	*Strum*
Dallwig, Leon Eugen von ls	*Milwaukee*
Daly, Percifer Charles ls	*Grand Rapids*
Danielson, Hilda Josephine ls	*Madison*
Darling, William Thomas	*Milwaukee*
Darnell, Iva A.	*Groton, S. D.*
Davidson, Hugh Roswell	*Eureka, Ill.*
Davies, Ruth Eaton a	*Milwaukee*
Davis, Florence Hume ls, wls	*Freeport, N. Y.*
Dean, James Reeve ls	*Madison*
Dean, Julia Louise	*Milwaukee*
Decker, Myrtle M.	*Roswell, N. M.*
Dembitz, Annette	*Louisville, Ky.*
Dembitz, Emily	*Louisville, Ky.*
Denis, Alphonse Derbigny ls	*Madison*
Deniston, Luther W.	*Madison*
Dequine, George Frederick	*Fond du Lac*
Dodds, John Hutchins	*Milwaukee*
Doerflinger, Lillie	*Dunkirk, N. Y.*
Doktorsky, Philip Harry	*Chicago, Ill.*
Dostal, Bernard Francis ls	*Milwaukee*
Doudna, Edgar George	*Richland Center*
Dougherty, Mary Margaret	*Richland Center*
Doyle, James Harold ls	*Madison*
Dunn, Mabel Louise	*Milton*
Dunn, Robert Hiram	*Greenville, Ill.*
Durbahn, Arthur Henry	*Sleepy Eye, Minn.*
Earnest, Edna L.	*Peoria, Ill.*
Easthope, Stanley Roy ls	*Chicago, Ill.*
Edwards, Franklin Olney	*Columbus*
Edwards, Martha L.	*Cincinnati, O.*

Ehler, Helen	*Madison*
Eldred, Frank Claude ls	*Berlin*
Eldridge, Edith Maria	*Indianapolis, Ind.*
Ellian, Elmer Rufus	*Milwaukee*
Elliot, Laura	*Brooklyn, N. Y.*
Elmer, Flora	*Milwaukee*
Emery, Elizabeth	*Mulvane, Kas.*
Emmett, Henry T.	*Verona*
End, George Kenneth	*Sheboygan*
Engebretson, George Melvin ls	*Gratiot*
Englis, Duane Taylor	*Eureka, Ill.*
Erskine, Esther	*St. Louis, Mo.*
Eubank, Myrtle Ann ls	*Madison*
†Evans, Leonard Ray	*Sheboygan*
Fairey, Francis	*Victoria, British Columbia*
Farnsworth, James A.	*Muscatine, Ia.*
Farrar, Victor John, g	*Madison*
Fehrenkamp, Winnifred	*Milwaukee*
Fertig, Clarence Hiram	*Milwaukee*
Fey, Lucile E.	*Lily, S. D.*
Findlay, Walter Alexander, ls	*Miami, Okla.*
Fink, Hattie Josephine	*Paris, Tenn.*
†Finner, Paul Frederick	*Dodge*
Flaa, Leonard	*Ishpeming, Mich.*
Flanders, Fred A.	*Ocala, Fla.*
Flint, Jessie Ethel	*Sun Prairie*
Flower, Dorothy, ls, wls	*Madison*
Foerster, Harry Robert, ls, m	*Milwaukee*
Fong, Chen, Yu	*Tsin pu, China*
Forsinger, Darwin Abbott ls	*Chicago, Ill.*
Foster, Roy Swormstedt ls	*Evansville, Ind.*
Fowler, Allan Walter	*Gordon*
Fowler, Wallace Blackstone ls	*Racine*
France, George Bourne ls	*Des Moines, Ia.*
Franz, Carl Loser ls	*Aurora, Ill.*
Franzen, Ella Catherine ls	*St. Paul, Minn.*
Franzen, Walter	*St. Paul, Minn.*
Frazier, Lucretia	*Grinnell, Ia.*
Freund, Carl ls, m	*Belvidere, Ill.*
Fulcher, Eleanor Agnes	*Evanston, Ill.*
Furness, Mary Baker	*Cincinnati, O.*
Gamey, Octavius Thomson	*Portage la Prairie, Man.*
Gavin, Ellen M., a	*Omaha, Nebr.*
Geil, Johanna	*Milwaukee*
George, Leo Byron ls, l	*Madison*
Gerber, Henry P.	*Menomonie*

† Advanced course for the training of teachers.

Gerhardt, May Sarah	*Oshkosh*
Gersbach, Herman	*Madison*
Geussenhainer, Eleanor Mary	*Sheboygan*
Ghio, Humbert Stephen	*St. Louis, Mo.*
Gibb, Everton John	*Evanston, Ill.*
Gibson, Myrtle Jane	*Rhinelander*
Gilbert, Otto Gustav	*Milwaukee*
Gittes, Alexander	*New York, N. Y.*
Gleason, Theresa	*Stevens Point*
Godfrey, Alfred L.	*Whitewater*
Goldschmidt, William Jacob l	*Madison*
Goldsmith, Helen Grace	*Galesburg, Ill.*
Goldsmith, Herbert John	*Chicago, Ill.*
Goodrich, Julia Lois	*Milton*
Gosney, Jessie Fremont	*Indianapolis, Ind.*
Gosselin, Florence Lea ls	*Green Bay*
Graef, Henry William l	*Plymouth*
Graham, Alexander Richard	*Deerfield*
Grannis, Irving Van Vliet ls, m	*Menomonie*
Grave, E. Floyd	*Monrovia, Ind.*
Green, Maud Edna	*Brodhead*
Greenwood, Albert Ernest ls	*Johnson Creek*
Greubel, Anna	*Milwaukee*
Greubel, Elsie Emma	*Milwaukee*
Griffith, George Perry ls	*Chicago, Ill.*
Groh, Samuel B.	*Lickdale, Pa.*
Gullander, Magnhild A.	*Bristol, S. D.*
Gunning, John Andrew	*River Falls*
Habermann, Beatrice Estella ls	*Lodi*
Hadden, Harry Mortimer	*Salina, Kas.*
Hageman, Irman	*Milwaukee*
Halsey, Myra Dorcas	*Milwaukee*
Hames, Anna Margaret	*Newburg*
Hammer, John M.	*Spring Valley*
Hanna, Mary Ellen	*Manawa*
Hansen, Andrew Elmor	*Madison*
Hanson, Huldah	*Galesburg, Ill.*
Hanson, James ls	*Sturgeon Bay*
Hanson, Selma	*Madison*
Hardgrove, Joseph Henry	*Manawa*
Harker, Melva a	*Dodgeville*
Hartman, Ralph Chapel	*Davis, Ill.*
Hartwig, Douglas Ferdinand ls, m	*Watertown*
Hathaway, Francis Bruce	*Oshkosh*
Haupt, William Henry	*Rockford, Ill.*
Havenor, Reslo Sherman	*Belvidere, Ill.*
Hawkins, Marjorie Deane	*Chicago, Ill.*
Hayden, Gladys Langton ls	*Milwaukee*

Hayden, Stella Jane a	*Milwaukee*
Hayes, Daniel F.	*Chicago, Ill.*
Heath, G. Earl ls	*Pardeeville*
Hebberd, Nelle g	*La Crosse*
Hecht, Frank A., Jr., ls	*Madison*
Heck, Arthur A.	*Racine*
Hedges, Clair Frank ls	*Neenah*
Heglund, Emma Karoline	*St. Croix Falls*
Heilman, Raymond Julius ls, l	*Oconomowoc*
Hein, Fred William	*South Milwaukee*
Heineman, Walter Edmund ls	*Mauston*
Heitkamp, George William ls	*Cuba*
Heigeland, Lillie Isabel	*Elliott, Ill.*
Henderson, Joe Melville	*Madison*
Hengy, Eva	*Holden, Mo.*
Henkel, Almira Lisetta	*Milwaukee*
Henning, Sherburne Bryant ls	*Milwaukee*
Herion, Walter	*Beloit*
Heron, Percy Hotspur	*Chicago, Ill.*
Heronymus, Mary Catherine	*Sheboygan*
Herren, Walter ls	*Oswego, Ill.*
Hester, Harold Hicks	*Burr Oak, Kas.*
Hewitt, Mary A., ls	*Madison*
Hickman, John Samuel ls, m	*Pennville, Ind.*
Hildebrand, Eva	*Rhinelander*
Hillhouse, Nellie Waddle	*Kansas City, Mo.*
Hilton, Joseph J.,	*Socorro, New Mex.*
Hirsch, Charles H. ls	*Milwaukee*
Hirsch, Everett Charles	*Colby*
Hobbs, Jane Elizabeth	*Washington, Pa.*
Hoefflin, Alvin V.	*Oshkosh*
Hogan, John Francis	*Dodgeville*
Hollmeyer, Harry Louis ls	*Cincinnati, O.*
Holmes, Georgia Dixon	*Hastings, Nebr.*
Holmes, Marion Helen g	*Milwaukee*
Hood, Leone L.,	*Spring Green*
Hood, Zoe	*Spring Green*
Horner, Chester W. ls	*El Paso, Ill.*
Horning, Bessie	*Logansport, Ind.*
Hostetter, Ross Barker	*Mt. Carroll, Ill.*
Hotz, Henry Gustave	*Scandinavia*
Hougen, Isabelle Bertine	*Wilmot, S. D.*
Householder, Frederick F.	*La Farge*
Houston, Walter Charles	*South Wayne*
Howe, Beatrice	*Chicago, Ill.*
Howe, Jennie Chouteau	*Kansas City, Mo.*
Howlett, Irving Richard ls	*Oshkosh*
Hoyt, Amy Glorane ls	*Augusta*

Hudson, Nelle Grace ls	*Boscobel*
Hughes, Morton	*Cambria*
Hugill, Thomas	*Hillsboro*
†Hulten, Charles Ernest	*Park Falls*
Hurd, Quintelle Mae	*Stoughton*
Ikeda, Minoru	*Iyo, Japan*
Jackson, Elizabeth B., ls	*Stoughton*
Jacobson, Jesse Edward	*Omaha, Nebr.*
Jameson, Raymond D.,	*Kingston, Tenn.*
Jarvis, Nicene	*Oklahoma City, Okla.*
Jay, Erskine La Verne	*Bloomington*
Jensen, Carl George ls	*Waupaca*
Jewell, Harry Frank ls	*Antigo*
Jirgal, John James ls	*Superior*
Johnson, Grace Maud	*Kalamazoo, Mich.*
Johnson, Jessie Margaret	*Kalamazoo, Mich.*
Johnson, Joanna Emily	*Alpena, Mich.*
Johnson, Harriet Alice	*Menasha*
Johnson, Laurie Child	*Hudson*
Jones, Flint H. a	*Fond du Lac*
Jones, Frank Gordon ls	*Shawano*
Jones, Maldwyn Lloyd ls	*Racine*
Jordan, Emilia Olga	*Chicago, Ill.*
Jungkunz, Ilma D. ls	*Freeport, Ill.*
Kasak, Michael	*Nerft, Russia*
Kasten, Albert W.	*Juneau*
Kauffman, Jacob Lovelle ls	*Madison*
Kausteiner, Louise	*Hannibal, Mo.*
Kay, Rosaline ls	*Madison*
Keeler, Mary Ellen	*Maryville, Mo.*
Keen, Florence	*Philadelphia, Pa.*
Kell, Herman Frederic	*Grand Rapids*
Keller, Frank John	*Cincinnati, O.*
Ketcham, Edna Murray ls	*Madison*
Kieckhefer, George Henry ls	*Milwaukee*
King, Charles Rutherford	*Watertown*
Kirch, Iza B. ls	*Madison*
Kirk, William Edward ls	*Madison*
Kivlin, Elanor L.	*Oregon*
Kivlin, Kathryn	*Oregon*
Klein, Imogene Dell	*Roachdale, Ind.*
Klein, Lillian	*Chicago, Ill.*
Kliefoth, Alfred William	*Madison*
Klingholz, Oscara	*Manitowoc*
Klumb, Marion Elizabeth	*Milwaukee*
Klumb, Philip Adolphus	*Thiensville*

† Advanced course for the training of teachers.

Kneeland, Martin Dwelle ls	*Madison*
Knight, Oliver Drake	*River Falls*
Knudson, Herman Julius	*Madison*
Koepke, William C. ls	*Waukesha*
Kragh, Stella Marguerite ls	*Madison*
Krause, Ellis Llewellyn	*Ripon*
Krause, Linnie ls	*Ridgeland*
Krebs, Ada Marie	*Seymour*
Krebs, Iva Margaret	*Seymour*
Kreutz, Gladys Louise	*Westfield*
Kriskey, Imogene Clarissa	*Wausau*
Kreuger, Leonard	*Muskego*
Kunz, Fritz ls	*Freeport*
Lake, Earl Garon ls	*Madison*
Lambert, Helen May	*Ottumwa, Ia.*
Langenstein, W. Glen	*Freeport, Ill.*
Langwill, Minnie Johnstone	*Rockford, Ill.*
Larkin, Aloysius James	*Whitewater*
La Rue, Edith Myrtle ls	*Wilton*
Latham, Nellie ls	*Madison*
Laws, Alexandrina	*South Milwaukee*
Lea, Maud	*Madison*
Lebeis, Clara Dora ls	*Chippewa Falls*
Lee, Henry Gustave ls	*Madison*
Leedy, Zula Wolf	*University Park, Ia.*
Leister, Henry Clinton ls	*Menomonee Falls*
Libert, Addie	*Green Bay*
Lightcap, Earl Kemptnorne	*Hazel Green*
Ling, Pyan ls	*Shanghai, China*
Linson, Daisy May	*Columbus, Ind.*
Litchfield, Beulah G.	*Flanagan, Ill.*
Little, William Douglas ls	*Geneva, Ill.*
Lloyd-Jones, Ralph ls	*Hillside*
Loos, Emma	*Milwaukee*
Lorenz, Leola Marie ls	*Madison*
Lovsnes, Marie	*Ada, Minn.*
Lusk, Grace Alberta ls	*Milwaukee*
Lutz, Gertrude Harriett ls	*Michigan City, Ind.*
Lyons, Mabelle Ellen	*Madison*
McAdow, Ida Belle	*Ottawa, Kas.*
MacArdle, Mary H.	*New Britain, Conn.*
McArdle, Mary Scholastica	*Tipton, Ind.*
McBeath, Faye ls	*Milwaukee*
McComb, Harvey Godfrey	*Milton*
McCordic, Almer S. ls	*Zion City, Ill.*
McCormick, John Vincent ls	*Madison*
MacDonald, Cora Adele	*Perryville, Md.*
McGowan, Ray Elmer ls	*Milton Junction*

McHenry, Avis	*Milwaukee*
McKee, Oliver Philip	*Polly*
McLain, Ernest Seth ls	*Madison*
McMahon, Frank Bartholomew	*Milwaukee*
McQuaid, John Joseph	*Champaign, Ill.*
McQuarrie, Archibald Ernest	*Oshkosh*
McRae, Hector	*Ewen, Mich.*
Ma, S. Minghai e	*Chihli, China*
Magill, Donald Groves ls	*Guadalajaro, Mex.*
Maher, Horace R.	*Roanoke, Va.*
Maine, Gladys Lee	*Manchester, Ill.*
Nicholas, Majerus	*Campbellsport*
Mandeville, Mabelle	*Chicago, Ill.*
Mann, Karl Mowry	*Milwaukee*
March, Albert Harold	*Oshkosh*
Martin, Cora	*Kansas City, Mo.*
Martin, Fred Charles	*Fairwater*
Marty, Henrietta Edna	*Madison*
Mason, Alfred De B.	*Brooklyn, N. Y.*
Maurer, Rolland Edward e	*Madison*
Mayhew, Corabelle	*Burnett*
Meighen, Loretta Catherine	*Storm Lake, Ia.*
Meisekothen, Hildegarde Mary ls	*Madison*
Meloy, Ann Elizabeth	*Fort Dodge, Ia.*
Menderson, Bertha O.	*Cincinnati, O.*
Menderson, Jacob	*Cincinnati, O.*
Merkelbach, Maria ls	*Madison*
Merry, Alice	*Milwaukee*
Meyer, Elzena Agnes	*Prairie du Sac*
Meyer, Herman Charles	*Oshkosh*
Middlebush, Fred Arnold	*Kalamazoo, Mich.*
Miles, Wovel Charles	*Monticello*
Millard, Harlow Cuff	*New London*
Miller, Cap Earl	*Sigourney, Ia.*
Miller, Henry George ls	*Cambria*
Miller, Lloyd Dougherty ls	*Grand Rapids*
Minch, Frances Eva ls	*Madison*
Mitchell, Helen Elizabeth ls	*Argyle*
Moe, Mayme Agnes Conway	*Elroy*
Montgomery, Ray	*Bryan, Tex.*
Moore, Cornelia S.	*Logansport, Ind.*
Moore, Jessie Elizabeth	*Indianapolis, Ind.*
Moore, Kathleen	*Norborne, Mo.*
Moore, Ora B.	*Unionville, Mo.*
Moore, Sidney John ls	*Milwaukee*
Moore, William Ralph ls	*Batavia, Ill.*
Morgan, Thomas Henry ls	*Madison*
Morrison, Frances	*Madison*

Morrissey, Gough M.	*Chilton*
Moser, Lillian Elaine	*Milwaukee*
Mueller, Corinne Charlotte ls	*Milwaukee*
Mueller, Tillie Durr	*Milwaukee*
Mullon, Marjory ls	*Madison*
Murphy, James William a	*Cato*
Murray, Charlotte B.	*Chicago, Ill.*
Murray, George Francis	*Beloit*
Naber, Della ls	*Mayville*
Narbo, Lauritz Martin ls	*Madison*
Neville, Mary Baird	*Cleveland, O.*
Nevius, Gertrude	*Highland Park, Ill.*
Nimtz, Frank Joseph	*Grand Rapids*
Norcott, Osborn Marshall	*Chicago, Ill.*
Norris, John Emanuel	*Waukesha*
Norris, Mary Grace	*Rock Valley, Ia.*
Norstrom, Simon Paul	*Hammond*
Noyes, Linwood Irving	*Marinette*
Nugent, Sara P.	*Johnson City, Tenn.*
Ochsner, Emma M.	*Prairie du Sac*
O'Hara, Thomas L. ls	*Avoca*
Olney, Clare Gilbert	*Ottawa, O.*
Olsen, Julia Elinor ls	*E. Milwaukee*
Olssen, Ellen Maud Wellesley ls	*Nashotah*
Orme, Henry William	*Racine*
Osborne, Lloyd Noyes ls	*Omaha, Nebr.*
Osen, Arthur L.	*Oconomowoc*
Pagar, Shanker Medhav ls	*Bombay, India*
Parent, Mary ls	*Madison*
Parkinson, Farnham Nell	*Columbus*
Paul, Joseph William	*Forest City, Ill.*
Pease, Edna Crystal ls	*Madison*
Pelton, Glenn Edwin	*Oshkosh*
Perkins, Agnes Schindler	*Madison*
Perry, Clara Harmon ls	*Milwaukee*
Petersen, Anna Jeannette	*Berlin*
Peterson, Conrad	*Hollandale*
Peterson, Evan Hugo	*Stockholm*
Petit, Edith	*Dayton, O.*
Petrie, Mildred B.	*Chicago, Ill.*
Pfeiffer, Charles A. ls	*Franklin*
Pflaum, Walter Otto ls	*Evansville*
Pfuderer, Helen Virginia ls	*Chicago, Ill.*
Phelps, Ella ls	*Milwaukee*
Philip, Mary Brown	*Winnipeg, Manitoba*
Pickering, Harold Gregg ls	*Superior*
Pierstorff, Clara May	*Madison*
Plant, Ethel May ls	*Prentice*

Platten, Irene ls	*Green Bay*
Polscher, Albert Ludwig	*Cleveland, O.*
Pope, John Blakeley, Jr.	*Ft. Worth, Tex.*
Porter, Philip Howe ls, l	*Madison*
Poston, Virgil e	*Bonne Terre, Mo.*
Pottinger, Lloyd Alson	*Kankakee, Ill.*
Potts, Marian ls, wls	*Appleton*
Powell, Frank Vavasar	*Pleasant Prairie*
Prior, Eugene Hohs	*Loyal*
Quinn, Audrey	*Appleton*
Ralph, Franklin Edgar	*Cuba City*
Rannenberg, George Christian ls	*Chicago, Ill.*
Ray, Martha R.	*Hannibal, Mo.*
Redmon, James R.	*Decatur, Ill.*
†Rees, Thomas S.	*Racine*
Regan, Denis James	*Hollandale*
Reilly, Marguerite Elizabeth	*Watertown*
Reitz, Caroline	*Chicago, Ill.*
Reynolds, Edward Dannie ls	*Cottage Grove*
Richmond, George Kerns	*Prophetstown, Ill.*
Rieder, Caroline A.	*Milwaukee*
Rieder, Rudolf Theodor	*Madison*
Riehle, Grace	*Terre Haute, Ind.*
Rieschl, Mary S.	*Stevens Point*
Riley, John William ls	*Madison*
Ringling, Mattie Salome	*Madison*
Rix, Frances Louise	*Chicago, Ill.*
Rizo-Patron Gerard	*La Fundicion, Peru*
Rizo-Patron, Henry a	*La Fundicion, Peru*
Roberts, Margaret Kathrine	*Columbus*
Rodgers, Anne Keats	*St. Louis, Mo.*
Rodgers, Jessie M.	*Waukesha*
Roecker, William Frederick	*Durand*
Roehling, Otto Carl ls	*Milwaukee*
Rogers, Martha Lavinia	*Moorestown, N. J.*
Roll, Bertha M.	*Pimento, Ind.*
Roney, Nelle	*Marysville, O.*
Roos, Christopher	*Madison*
Rosenthal, Alma	*Grand Rapids, Mich.*
Ross, Evelyn Townsend ls	*Madison*
Rossbach, Clement A. ls	*Milwaukee*
Roy, Basanta Koomar g	*Calcutta, Ind.*
Ruby, Anna	*Stevens Point*
Ruehl, Adolph	*Milwaukee*
Rueth, Geva	*Sun Prairie*
Rush, Alice Mary	*Rochester*

† Advanced course for the training of teachers.

Russell, Carolyn Bartlett	*Peoria, Ill*
Russell, France Forbis	*Butte, Mont.*
Russel, Theodosia	*Butte, Mont.*
Ryan, Eunice Veronica a	*Madison*
Ryan, Willard James	*Ashland*
Sabean, Izzetta Lee ls	*Hayward*
Salsman, Gertrude Anne ls	*Madison*
Sanders, Mamie Amelia	*Madison*
Sansum, William David ls, m	*Baraboo*
Saposs, David Joseph ls	*Milwaukee*
Sauer, Verra L.	*Milwaukee*
Saunders, George Edmounde	*Emmetsburg, Ia.*
Savage, George Oliver	*Oshkosh*
Savage, Helen Shores	*Tacoma, Wash.*
Scanlan, Marcia Marie	*Hermosa, S. D.*
Schaefer, Leo H.	*Muscoda*
Schatz, Walter Philip	*Wayside*
Schaub, Carl Frederick	*Marion*
Schaus, Blanche	*St. Louis, Mo.*
Scheidecker, Glenn W. S.	*Sycamore, Ill.*
Schell, Harmon Frank ls	*Freeport, Ill.*
Schenkenberg, Lee Jay a	*Waterford*
Scher, Joseph ls	*Madison*
Schladweiler, Katharine	*Milwaukee*
Schlatter, Fred Edmund	*Milwaukee*
Schoepp, Elizabeth Dora ls	*Alma*
Schraa, Nicholas Charles	*Oshkosh*
Schranck, Walter John	*Milwaukee*
Schreiter, Gustave Herbert ls	*Milwaukee*
Schroedel, Amelia	*Grand Rapids*
Schroeder, Walter Henry ls	*Manitowoc*
Schulte, Isidore John ls	*Milwaukee*
Schultz, Augusta Fredrica ls	*Westfield, N. Y.*
Schumann, Hedwig	*Milwaukee*
Schwartz, Daniel Stern	*Brooklyn, N. Y.*
Schwartz, Louis David	*Brooklyn, N. Y.*
Schwartz, Nellie Elizabeth ls	*East Troy*
Scott, Almere Louise	*Madison*
Scott, E. Agnes	*Wogansport, N. D.*
Scott, Walter Alexander	*Augusta*
Seeman, Frank John ls	*Kewaunee*
Seifert, Joanna Elizabeth	*Chicago, Ill.*
Sellards, John Armstrong	*Champaign, Ill.*
Semmelmeyer, Madeline	*Chicago, Ill.*
Senty, Walter Benjamin	*Waumandee*
Severance, Clare McHenry	*Madison*
Shadall, Clara Emma ls	*Milwaukee*
Shafer, Maude M. Foster	*South Milwaukee*

Shaffer, Ralph Jay	*Madison*
Shallcross, Alice Lewis	*St. Louis, Mo.*
Shaw, Cornelia Elizabeth	*Zion City, Ill.*
Shaw, Lewis A.	*Hartford, Mich.*
Shelp, Margaret Isabelle	*Rhinelander*
Sherwood, Kate E.	*Benton Harbor, Mich.*
Shillander, Arthur Alexis ls	*Hibbing, Minn.*
Shonat, Nettie Blanche	*Galesville*
Siebenmann, Bertha Louise	*Chicago, Ill.*
Simmons, William Francis	*Milwaukee*
Siner, Chloe	*Pimento, Ind.*
Sister Mary Alexia	*Anaconda, Mont.*
Sister Mary Alicia	*Sinsinawa*
Sister Mary Fidelis	*Madison*
Sister Mariola	*Sinsinawa*
Sister Mary Gertrude Quinn	*Sinsinawa*
Slater, Percival Beverly	*Milwaukee*
Slichter, Sumner Huber ls	*Madison*
Slivka, John	*Cleveland, O.*
Smith, Harold Elmer ls	*Milwaukee*
Smith, Homer John	*Rewey*
Smith, Irving Franklin ls	*Montclair, N. J.*
Smith, Kenneth Loveland	*Mexico City, Mex.*
Sniveley, Edward Taylor	*Menomonie*
Somers, Esther Brochman	*Madison*
Sommers, Samuel Alexander	*Cincinnati, O.*
Soules, Gertrude F.	*Terre Haute, Ind.*
Spielmacher, Margaret Ellen	*Superior*
Squires, Benjamin	*La Farge*
Stark, Nina Caroline	*Zion City, Ill.*
Starks, Irene Valanche ls	*Madison*
Starr, William ls	*Eau Claire*
Steck, Louis George ls	*Colton, Cal.*
Stege, Lilian Elizabeth	*Louisville, Ky.*
Steiner, Herbert Reuben	*Elk Mound*
Stepanek, John E.	*Dubuque, Ia.*
Stephens, James Colclazier	*Idaho Falls, Idaho*
†Stevens, Elbert Crandall ls	*Oak Park, Ill.*
Stevens, Margaret	*St. Louis, Mo.*
Stevens, Stanley Story ls	*Oak Park, Ill.*
Stevenson, Katherine	*Indianapolis, Ind.*
Stoltzfuss, Amanda	*Tuleta, Tex.*
Stoney, Ruth Frances	*Clinton*
Story, Harold Willis ls	*Milwaukee*
Stoughton, Nellie May	*Duluth, Minn.*
Stracke, Marie	*St. Louis, Mo.*
Sullivan, Margaret	*Racine*

† Advanced course for the training of teachers.

Swartz, David Arden	*Menominee*
Swerig, Mabel Beatrice ls	*Madison*
Tang, Hung Yee	*Canton, China*
Tassaro, Mayme Pearl	*Norborne, Mo.*
Taylor, Helena Maw	*Louisiana, Mo.*
Taylor, John Dudley ls	*Madison*
Taylor, John Wills	*Linden*
Taylor, William Amory	*Portage*
Te Selle, Clarence John	*Sheboygan Falls*
Te Selle, Hazel Rosazalia ls	*Sheboygan Falls*
Thain, Reta	*Sundance, Wyo.*
Thayer, Nathaniel	*Evanston, Ill.*
Thayer, Vivian Trow	*Iron River*
Thompson, Victor Emmanuel	*Grand Rapids*
Tillson, Harold Luther	*Naperville, Ill.*
Tippin, Fred G.	*Winnipeg, Manitoba*
Tollefson, Albert Tenius	*Viroqua*
Tong, Yung Tso	*Canton, China*
Toole, Eben Henry	*Baraboo*
Towle, William George	*Saginaw, Mich.*
Traeger, Ernest Laurence ls	*Milwaukee*
Trautman, Bertha	*Decatur, Ill.*
Tredinnick, Clarence Edwin ls	*Linden*
Tseng, Yu Mei ls	*Kiangsu, China*
Tsu, Wen Shion ls	*Soochow, China*
Tuck, Amy	*Oshkosh*
Tunnicliffe, Richard Morton	*Menasha*
Turner, Genevieve	*Valley City, N. D.*
Twetten, Jennie	*Milltown*
Twitchell, Edward Chauncey ls	*Madison*
Tye, Frank Edward ls	*West Chicago, Ill.*
Uhen, Rudolph M.	*Burlington*
Ulrey, Alvin L.	*North Manchester, Ind.*
Urdahl, Valeska	*Madison*
Urner, Catherine Murphy	*Osage City, Kas.*
Van Dalsem, Newton	*Neenah*
Vergeront, Grace ls	*Madison*
Vergeront, Marie ls	*Madison*
Viles, Edith Josephine ls	*Chippewa Falls*
Voge, Emma F.	*Appleton*
Waddell, John Frank	*Evansville*
Waite, Jay Davies	*Prairie du Sac*
Walker, Frances Annis ls	*Madison*
Wallace, Helen	*Baltimore, Md.*
Walsh, Katherine E.	*Richland Center*
Walsh, Sarah C.	*Milwaukee*
Walther, Max Edwin ls	*Medford*
Watson, Sarah Thornton	*Louisville, Ky.*

Wedin, Jessie Isabel	*Grantsburg*
Wedlock, Elmer Leroy ls	*Mineral Point*
†Weenink, Ben W.	*Fountain City*
Wehle, R. Arthur	*Milwaukee*
Welch, Laura F.	*Minot, N. D.*
Welker, Joseph Edward	*Oil City, Pa.*
Weils, Chester C. ls	*Madison*
Wells, Florence Adele	*Wauwatosa*
Wells, Miriam	*Wauwatosa*
Wendels, Maria Anna	*Baraboo*
Westgate, Clifford Earl	*Tacoma, Wash.*
Westwood, Horace	*Youngstown, O.*
Whitney, Clayton Anthony	*Grayling, Mich.*
Willemsen, Jennie	*St. Louis, Mo.*
Williams, Mary N.	*Beloit*
Williamson, John Andrew ls	*Chicago, Ill.*
Willis, Lodema O.	*Spencer, Ia.*
Wilson, Arthur George	*Nashotah*
Wing, Bristol E.	*Muskegon, Mich.*
Winger, Reinhard Conrad ls	*Elk Mound*
Winn, Westfall Rachel	*Madison*
Wise, Carl Tipton	*Quincy, Ill.*
Wong, John ls	*Peking, China*
Worachek, Frank Joseph	*Algoma*
Wulf, Metha Louise	*Cleveland, O.*
Wulf, Sophie Bertine	*Cleveland, O.*
Yen. Chid-Cheow	*Foochow, China*
York, Pansy Celia	*Superior*
Young. Vive Hall ls	*Whitewater*
Youngs, Caroline J. ls	*Rockford, Ill.*
Zaegel, Robert Lupinski ls	*Sheboygan*
Zapata, Jose	*Mexico City, Mex.*
Zellhoefer, Marilla	*Palmyra* —720

Music

Bardeen, Florence Catherine	*Madison*
Beecher, Dorothy Alice	*Peoria, Ill.*
Epstein, Charlotte	*Madison*
Hess, June	*Wabash, Ind.*
Klinefelter, Barbara Hazel	*Madison*
Nelson, Agnes Edna ls	*Madison*
Sanford, Dorothy E. White	*Madison*
Schmitt, Pearl Ruby mu	*Madison*
Swan, Helga Louise	*Stoughton*
Turneaure, Florence	*Madison*
Williamson, Marjorie Roberts	*Mexico City, Mexico* —11

† Advanced course for the training of teachers.

ENGINEERS

Graduates

Bailey, Otterbein Andrew — *Westerville, O.*
B. S., Otterbein University.

Blanchard, Julian — *Hartford, N. C.*
M. A., Columbia University.

Brenneman, Jesse La Mar g — *Goshen, Ind.*
B. S., University of Chicago.

Cook, Herbert Leigh g — *Moline, Ill.*
B. S., University of Wisconsin.

Cook, Maynard Albert e — *Alma, Mich.*
B. A., Alma College.

Crane, Arthur Griswold — *Jamestown, N. Dak.*
B. S., Carelton College.

Cunningham, Frederick William — *Point Pleasant, N. J.*
B. S., Princeton University.

Eakin, Ira C. — *Norristown, Pa.*
B. A., Grove City College.

Garrett, Leon Ellis — *Rollo, Mo.*
B. S., Missouri School of Mines.

Gregory, Stephen Strong, Jr. e — *Chicago, Ill.*
B. A., Yale University.

Greve, Frederick William, Jr. — *Brooklyn, N. Y.*
B. S., University of Wisconsin.

Havens, Fred L. — *Chicago, Ill.*
M. E., Lewis Institute.

Menderson, Edgar — *Cincinnati, O.*
B. A., Yale University.

Moots, Elmer Earl — *Madison*
M. S., University of Maine.

Parker, William M. — *Indianapolis, Ind.*
B. S., University of Colorado.

Pulver, Harry E. — *Viroqua*
B. S., University of Wisconsin.

Shattuck, Earle Lacke — *Preston, La.*
B. S., Kansas State Agricultural College.

Valenzuela, Jose — *Guagua, Pampanga, P. I.*
B. A., Ateneo of Manila.

White, Earl Archibald g — *Antioch, Ill.*
B. S., University of Illinois.

Whittemore, Harlow Olin — *Owasso, Mich.*
B. S., Alma College.

Wischmeyer, Carl — *Louisville, Ky.*
M. S., Rose Polytechnic Institute.

Young, Earl Burdett — *Butte, Mont.*
M. A., University of Wisconsin.

—22

Undergraduates

Abernathy, James Logan e	*Kansas City, Mo.*
Arps, Edmund John e	*New Holstein*
Badger, Arthur Hewitt e	*Madison*
Bainbridge, Walter L., e	*Platteville*
Baird, Paul Edward	*River Falls*
Ballesteros, Munoz Jose e	*Monclova, Coah. Mex.*
Ban, Rinji	*Tokyo, Japan*
Ban, Seizo	*Tokyo, Japan*
Barnum, Charles Treadway e	*Madison*
Bendt, Joseph Philip e	*Kenosha*
Best, Paul Butler e	*Oak Park, Ill.*
Bleyer, Addison M. e	*Milwaukee*
Bliss, William Desmond e	*Wauwatosa*
Blodgett, Charles Wallace e	*Green Bay*
Borchsenius, Harold e	*Nye*
Borchert, Raymond C. e	*Milwaukee*
Braasch, Frederick William e	*Sheboygan*
Brady, Laban Jenkins e	*El Reno, Okla.*
Breit, Charles e	*Waupaca*
Brintnall, Percy Casson e	*Kalispell, Mont.*
Brown, Harold	*Evansville*
Buettell, Roger Brosse	*Dubuque, Ia.*
Cahill, Ralph Hughes e	*Milwaukee*
Chang, Moshih	*Shanghai, China*
Charlesworth, Frank Manley e	*Kaukauna*
Chen, Huang	*Canton, China*
Childs, Leonard Chapin e	*Oak Park, Ill.*
Churchian, Avedis Melkon e	*Van, Armenia, Turkey*
Clark, John Joseph	*Toronto, Ontario*
Cobaugh, Harry Augustus e	*Washington, D. C.*
Cobb, Arthur Jr. e	*Cleveland, O.*
Conaway, Willard Green e	*Warren, Pa.*
Corner, Douglass Calvert e	*Platteville*
Cortazar, Enrique	*Chihanhan, Mex.*
Cortelyou, Townsend e	*Brodhead*
Cowalsky, William Max	*Milwaukee*
Damm, Paul Emil e	*Madison*
Damon, William Henry e	*Madison*
Davidson, Carl Nathan ls	*Mauston*
Dequine, Louis Edward	*Fond du Lac*
Donaldson, Harry E.	*Milwaukee*
Dorman, William Earle	*Cloverdale, Ind.*
Dowson, Barney	*Racine*
Dunnewald, Paul Wilterding	*Madison*
Duque, Carlos	*Cuzco, Peru*
Early, Richard	*Indianapolis, Ind.*

Ely, Alexander White e	*Edgerton*
Emery, Frank Oscar	*Madison*
Epstein, William Carl e	*Madison*
Erwin, Thomas S.	*Madison*
Esau, G. Walter e	*Milwaukee*
Fehlandt, William Louis e	*Madison*
Finley, Ralph Hinkle e	*Batavia, Ill.*
Fitch, William Kountz e	*Rockford, Ill.*
Flanagan, John Michael	*Altoona, Pa.*
Frisbie, Charles George	*Hartland*
Gielow, Walter Charles	*Manitowoc*
Gillette, Edmond Stephen e	*Aurora, Ill.*
Glasgow, Leon	*Milwaukee*
Goodland, Rudyard Lewis e	*Racine*
Gregory, John Dallas	*Louisville, Ky.*
Grimmer, Edwin W. e	*St. Louis, Mo.*
Griswold, John William e	*West Salem*
Haley, Harold Joseph e	*Watertown, N. Y.*
Hansen, Clinton J.	*Madison*
Hedrick, Arly Luther g	*Kansas City, Mo.*
Heider, Harvey Banderob e	*Oshkosh*
Hewitt, Earle John e	*Nashotah*
Hening, Walter Edward	*Milwaukee*
High, Carl Frederick	*New Washington, O.*
Hintze, Philip Henry	*Stoughton*
Hitt, William Mayo e	*Olympia, Wash.*
Hoffman, Eugene Robert e	*Ellensburg, Wash.*
Holbrook, Henry Edwin e	*Chicago, Ill.*
Holversheid, Erwin e	*Hinsdale, Ill.*
Hopkins, William Thompson e	*Madison*
Hughes, Robert Davis e	*Dayton, O.*
Ingold, Vivian Johnson	*Appleton*
Isabella, Nicholas Michael e	*Spooner*
Jamison, John Rodney e	*Poynette*
Johnson, Godfrey e	*Superior*
Johnson, Nathan Ritchie ls	*Milwaukee*
Johnson, Robert Hiram e	*Galesburg, Ill.*
Jones, Albert Curtis e	*Madison*
Jones, Louis DeWitt e	*Waukegan, Ill.*
Jones, Richard Henry e	*Janesville*
Kehrmann, Rolla e	*Bonne Terre, Mo.*
Keller, Roy Avery e	*Madison*
Kenck, Max William	*Madison*
Kerschner, Harland Mease	*Spencer, N. C.*
Kietzman, William Arthur e	*Eau Claire*
Kitagawa, Tometaro	*Tokio, Japan*
Kleck, Carl Frederick e	*Milwaukee*
Knoll, Waldemar Arthur e	*Milwaukee*

Krueger, Ferdinand Henry e	*Milwaukee*
Kunesh, Joseph Francis e	*Stangelville*
Kwank, Bang e	*Chinkiang, China*
Lewis, George Wilber	*Wilmot*
Li, Ming Ho e	*Yangchow, China*
Lora Romero, Mariano e	*Havana, Cuba*
Lorig, Edwin Theodore e	*South Milwaukee*
Lynch, Harry Claude e	*Independence, Ia.*
McDougall, Shirley Alton	*Whitewater*
McGuire, Alfred Russel	*Honey Creek*
McIntosh, Fabian Clifton e	*Bradford, Pa.*
McMurry, William Matthew e	*Madison*
Madson, Frank M.	*Racine*
Markscheffer, George Arthur	*Chicago, Ill.*
Marshall, Harry Alexander e	*East Troy*
Mathias, Henry Conrad	*Toledo, O.*
May, Phil Willard e	*Madison*
Matthews, Ray Sellwood	*Ishpeming, Mich.*
Mead, Harold Washburn	*Madison*
Meinecke, Ferdinand Jr. e	*Milwaukee*
Mengel, Forest Foster	*Oconomowoc*
Milbrath, William Henry	*Johnson Creek*
Mireau, Clarence	*Marinette*
Monk, Robert William Jr. e	*Neillsville*
Morris, Sidney Dealey	*Appleton*
Nelson, Ben L. ls	*La Crosse*
Nickel, Walter Frederick e	*Madison*
Noyes, Eugene Carter e	*Marinette*
O'Connor, Arthur James	*Milwaukee*
Olson, Carl	*Rhinelander*
Parr, Sylvester Burr	*Madison*
Price, George G.	*Oakfield*
Probert, Samuel Harold e	*Madison*
Rather, Maximilian Frederic e	*Shawano*
Reid, Bryan Seaborne e	*Ashland*
Risdon, Roland Howard e	*West De Pere*
Rosenkrans, Floyd McKee e	*Oconomowoc*
Ross, Livingston	*Rensselaer, Ind.*
Rust, Thomas H. e	*Eau Claire*
Ryan, James Thurston	*Wausau*
Saoin, Jean Frederick a	*Watertown*
Sandberg, Henry Theodore e	*Madison*
Sanchez, Alfredo A.	*Mexico City, Mex.*
Schaef, Cornelius Arthur	*Grand Rapids, Mich.*
Schecter, Samuel e	*Madison*
Schieber, Oliver Jay e	*Los Angeles, Cal.*
Schindler, Lloyd Marius ls	*Monroe*
Schleck, Walter Hubert e	*South Milwaukee*

Schneider, Frederick Cooper e	*Des Moines, Ia.*
Schneider, Martin P. e	*Madison*
Scoles, John Calvert e	*Granton*
Seifert, Andrew e	*Milwaukee*
Seip, Ernst Walter Joseph	*Chicago, Ill.*
Shafer, Clifford Bernard e	*Muscoda*
Shape, Alfred Charles e	*Milwaukee*
Shapland, Earl Page	*Saunemin, Ill.*
Sheriffs, Walter Alexander e	*Madison*
Shonat, Archie e	*Madison*
Simpson, Arthur Moulton	*Chicago, Ill.*
Sipp, Edward Andrew e	*Watertown*
Smart, Orren David e	*Waukesha*
Smith, Robert Matthew e	*Madison*
Snow, Barton Sperry e	*Batavia, Ill.*
Snow, Wilbur Talmadge	*Batavia, Ill.*
Soergel, Robert John e	*Milwaukee*
Stengel, Rudolph John e	*Antigo*
Sterling, James McElwane	*Toledo, O.*
Stivers, Charles Paul, Jr. e	*Kansas City, Mo.*
Sturgeon, Edward Tyler e	*Chicago, Ill.*
Talbot, Lyman Robert	*Madison*
Taylor, Herbert Cecil g	*Lancaster*
Tennant, Herschel Vern g	*Bedford, Ia.*
Teschan, Erhard Gilbert e	*Milwaukee*
Theobald, Jesse Edward e	*Madison*
Tolhurst, William Henry, 2nd e	*Milwaukee*
Volquarts, Victor Henry e	*Madison*
Wade, John Cedric e	*Muscoda*
Walker, E. J. Welch e	*Oklahoma City, Okla.*
Waltenberg, Romaine G. e	*Madison*
Walters, Lee David	*Chicago, Ill.*
Watermann, Quan Drederic e	*DeLand, Fla.*
Watkins, Robert Marsh e	*Milwaukee*
Webster, Elbert Morgan l	*Hudson*
Wehner, Stephen	*Madison*
Weller, Dan Brown e	*Fond du Lac*
Welles, Halsey Vanderlieth	*Denver, Colo.*
Welser, George Brinton Jr. e	*Milwaukee*
Wheeler, Francis Foss e	*Milwaukee*
Whitney, Edward Nelson e	*Madison*
Wiedenbeck, Harry John e	*Mauston*
Wile, Harold Davidson e	*Chicago, Ill.*
Wilkins, Benona C.	*Madison*
Williams, Verle Egnon e	*Phillips*
Winterbotham, Ralph William	*Madison*
Withington, Arthur Harding e	*Baraboo*
Wolff, Werner Peter e	*Cumberland*

Woo, Chang e	*Canton, China*	
Yu, Liang e	*Shanghai, China*	
Zee, Jeeshine	*Shanghai, China*	
Zorsch, Edward Albert	*Brighton, N. Y.*	—194

AGRICULTURE

Graduates

Bloomfield, Lloyd Morris — *Columbus, O.*
B. Agr., Ohio State University.

Borgers, Genevieve Todd — *Grand Rapids, Mich.*
B. A., Oberlin College

Brosseau, Joseph Edward — *Chicago, Ill.*
M. E., Cornell University.

Cannon, Calhoun Lillions — *Newberry, S. C.*
B. S., Clemson College.

Coffin, Charles Levi — *Fairmont, Ind.*
B. S., Penn College.

Davis, Charles Wesley — *Douglas, Ga.*
M. S. A., Iowa State College.

Doerschuk, John Jacob — *Madison*
B. S., University of Wisconsin.

Ellis, Robert Walpole — *Endeavor*
M. A., University of Wisconsin.

Everitt, Benjamin Bryan — *Palmyra, N. C.*
B. S., North Carolina Agric. and Mech. Arts College.

Finley, Philip Vollmar — *Brookings, S. D.*
B. S., South Dakota State College.

Friend, Henry Harrison — *Germantown, O.*
M. A., Ohio Northern University.

Funchess, Marion Jacob — *Auburn, Ala.*
B. S., Clemson College.

Ingalls, George Ross — *Morris, Minn.*
Ph. B. Northwestern College, Illinois.

Jester, Simeon van Trump — *Rock Hall, Md.*
B. A., Swarthmore College.

Koontz, Clarence Edgar — *Luray, Va.*
B. A., William and Mary College.

Lewis, Marshall — *Milwaukee*
B. S., University of Wisconsin.

Luther, Ernest Leonard a — *Madison*
B. A., Olivet College, Michigan.

Myers, Perry Cullen — *Winona, Minn.*
B. S., University of Iowa.

Ridgway, Joseph Wilder — *College Station, Texas*
M. S., Alabama Polytechnic Institute.

Stickle, Charles Edwin — *Milwaukee*
B. A., Northwestern University.
Trautman, Katherine Marian — *Decatur, Ill.*
B. S., Millikin University.
Wise, Furman Bryant — *Hyman, S. C.*
B. S., Clemson College.
—22

Undergraduates

Abbott, Arthur William — *Chicago, Ill.*
Adams, Charles L. a — *Madison*
Ade, John Otis — *Kentland, Ind.*
Alexander, Joseph Hope Hughes a — *Madison*
Andree, Richard Ambrose a — *Milwaukee*
Arnold, Harold Alison a — *Sharon*
Babcock, Frank Gordon a — *Kasota, Minn.*
Babington, Robert Samuel — *Sauk City*
Baird, William Lockhart a — *Waukesha*
Banker, Paul Philip a — *Fort Atkinson*
Boyce, Alice Helen — *Brooklyn*
Branegan, Gladys a — *Madison*
Brick, Erhardt C. — *Manitowoc*
Bunnell, Mary Martha a — *Madison*
Burns, Clifford Clare — *Rockford, Ill.*
Campion, Thomas Howard — *Montello*
Caswell, Mildred C., a — *Ft. Atkinson*
Clark, May V. — *Milwaukee*
Corey, Silas Grover — *Dresser Junction*
Dahm, Anna Margaret a — *McGregor, Ia.*
Denzer, Frank J., — *Canosia, Minn.*
Drotning, Anna Elizabeth a — *Madison*
Durnell, Donald Scott — *Hillsboro, O.*
Dykeston, Maybelle Leanora a — *Madison*
Eldred, Claude Henry — *Omro*
Enright, Eleanor Marie a — *Janesville*
Field, Albert Martin — *Hartland*
Foote, Nelle Margaret — *Hartford*
Frost, Harold Guernsey a — *Almond*
Fuchs, Albert G. a — *Madison*
Fuente, Jesue de la a — *Nadadores, Coah, Mex.*
Galloway, Edwin Pierce a — *Fond du Lac*
Gettys, Ben Wiley — *Lugoff, S. C.*
Gill, Gladys Mary a — *Marengo, Ill.*
Gilmore, James Leland — *Holly Hill, S. C.*
Gunderson, Oscar a — *Madison*
Hanson, Lewis Peter a — *Madison*
Hayes, Mark Webster a — *South Kaukauna*
Hoffman, Robin Emmerich a — *Chicago, Ill.*

Hughes, John Harvey	*Gessie, Ind.*
James, John Ambrose	*Linden*
Jewett, Norman Lee	*Barron*
Johnson, Allen a	*Montclair N. J.*
Johnson, Marshall Chase a	*Hinsdale, Ill.*
Kammlade, Stephen Girard a	*Sparta*
Kedney, Henry Steinfort a	*Fargo, N. D.*
Ketter, Walter C. a	*Milwaukee*
Kirtley, Mary Katherine	*Kansas City, Mo.*
Klumb, Hugo Gottfried N., a	*Kewaskum*
Kozina, Joseph Edward	*Kewaunee*
Kuo, Tuar-shin a	*Wusih, China*
Leguia, Jose a	*Lima, Peru*
Letts, Harlan Day a	*Letts, Ia.*
Leukel, Walter A.	*Brillion*
Lothe, Ada	*Stoughton*
Lovell, Ethel M.	*Louisville, Ky.*
McClary, Orson Rood a	*Oak Park, Ill.*
McFerran, John Byrd	*Louisville, Ky.*
McGonigale, Florence Joyes	*Louisville, Ky.*
McNown, Mark Freeman a	*Mauston*
Manders, Emma	*Logansport, Ind.*
Margoles, Nathan a	*Milwaukee*
Martin, Harriet Genevieve a	*Madison*
Mendenhall, William Wesley	*Newville Ind.*
Menderson, Nathan	*Cincinnati, O.*
Moore, George McMurtrie a	*Jackson, Minn.*
Musser, Karl Bryant	*Manhattan, Kas.*
Nathan, Edward Columbus a	*Chicago, Ill.*
Noyes, Fama Isabella	*Marinette*
Ofstie, Esther Charlotte	*Eau Claire*
Oldenberg, Frederick William	*Brodhead*
Oliver, Katharine I.	*Clinton, Ill.*
Oliver, Mary Bertha a	*Morrison, Ill.*
Palit, Barendra Kumar a	*Calcutta, India*
Pan, Chu Chi a	*Wuchow, China*
Pflughoeft, Henry A. a	*Algoma*
Potgieter, Dietlof Siegfried Mare a	*Madison*
Raftery, Agnes Beatrice	*Madison*
Robotka, Frank a	*Franksville*
Rogers, Sarah Logan	*Louisville, Ky.*
Russell, Harriet Sophia a	*Muncie, Ind.*
Sarkis, Boshnakian a	*Constantinople, Turkey*
Schneck, Henry William a	*Milwaukee*
Schoenfield, William Alfred a	*Madison*
Schultz, Eugene a	*East Greenville, Pa.*
Schutte, Carl J. E. a	*Pretoria, South Africa*
Smith, Eunice Grant a	*Hinsdale, Ill.*

Smith, George W. a	*Pacific, Mo.*	
Stangel, Anton Otto a	*Tisch Mills*	
Stockwell, E. Ross	*Havensville, Kas.*	
Sutton, Luther Francis a	*Madison*	
Tang, Tsic Yee a	*Canton, China*	
Treu, Max Rudolph Hendrick a	*Johannesburg, S. Africa*	
Van Gent, Conrad Eugene a	*Madison*	
Van Riper, John Crowell Jr., a	*St. Louis, Mo.*	
Voge, Theresa Marie	*Appleton*	
Warren, David Mack	*Chicago, Ill.*	
Watson, Robert J.,	*Chicago, Ill.*	
Wehrwein, George S. a	*Manitowoc*	
Weir, James H. a	*Mukwonago*	
Wilcox, Frederick Seacard a	*Elgin, Ill.*	
Wilson, Graham Eugene a	*Mt. Sterling*	
Wiseman, Clinton Raymond a	*Benton*	
Woodward, Alexander Gilfillan a	*Madison*	
Yampolsky, Cecil Jacob a	*Madison*	—105

LAW

Beers, William Charles l	*Platteville*	
Boyce, Merton V.	*Minocqua*	
Brill, Herman Oswald l	*Columbus*	
Buchen, Gustave William, B. A., l	*Sheboygan*	
Bunker, Eugene Francis l	*Madison*	
Burgess, Kenneth Farwell, B. A., l	*Oshkosh*	
Buscheck, Alfred J., l	*Manitowoc*	
Callaway, James J., B. A.	*Ft. Worth, Tex.*	
Carlson, David Lawrence l	*Jamestown, N. Y.*	
Eager, George Boardman Jr., B. A., LL. B.	*Staunton, Va.*	
Erickson, George D.,	*New Ulm, Minn.*	
Fletcher, Clark Robinson	*Waukesha*	
Frazer, Mell Alexander, M. S.	*Mobile, Ala.*	
Gallagher, Joseph Thomas ls	*Racine*	
Goggins, George Matthew l	*Hilbert*	
Goggins, Hugh William l	*Grand Rapids*	
Gronert, Theodore, B. A.	*Prairie du Chien*	
Haase, Oscar Rudolph, B. A.	*Milwaukee*	
Hannan, William Frawley, B. A.	*Milwaukee*	
Hogan, James Mangan, B. A.	*Fond du Lac*	
Hooper, Frank Arnold	*Crandon*	
Johnson, Easton l	*Durand, Ill.*	
Justeson, Bird M.	*Madison*	
Kerschensteiner, Mark Joseph, B. A. l	*Jefferson*	
Kingsford, Alfred Charles, B. A.	*Baraboo*	
Lonsdorf, John Andrew	*Shell Lake*	

Louchery, Charles William, B. A., LL. B.	*Clarksburg, W. Va.*
McPherson, LeRoy l	*Dodgeville*
Martin, Patrick Henry	*Madison*
Meuer, William Joseph, B. A.	*Madison*
Miller, Guy Dolphus	*Athens, O.*
Miner, Oliver H.	*Madison*
Nickadem, Frank Marcel	*Princeton*
Noyes, Arthur Herbert ls, l	*Baraboo*
Noyes, Haskell, B. A.	*Milwaukee*
Ohm, Howard Frederick l	*South Milwaukee*
Paul, Milton James l	*Platteville*
Pinkerton, Milo Blish l	*Madison*
Powell, Charles Healy ls	*Milwaukee*
Provosty, Michel	*New Orleans, La.*
Pugh, L. Royden, B. A.	*Libertyville, Ill.*
Reiss, Wallace, B. A.	*Milwaukee*
Rudow, Henry William l	*River Falls*
Shafer, Chester Arthur, B. A.	*Diagonal, Ia.*
Smith, Glen Edward, E. E. l	*Madison*
Somers, Lewis Jack l	*New Haven, Conn.*
Soutar, Richard Gray Jr., ls	*Lake Geneva*
Stiles, Bennett Phelps	*Racine*
Temple, John	*Mankato, Minn.*
Thomas, John Lawson Baldwin Jr.	*Madison*
Toebaas, Oscar Theodore l	*Long Beach, Cal.*
Trotter, James Russell, M. A.	*Morgantown, W. Va.*
Velte, Charles Henry l	*Poysippi*
Walden, Edward Job l	*Madison*
Worthington, George Edmund, B. A.	*Madison*
Zillmer, Raymond Theodore, B. A., g, l	*Milwaukee*

—56

DAIRY SCHOOL

Davis, Chester Roy	*Valley*
Newman, Martin	*Chetek*
Raasch, Fred E.	*Neshkoro*
Thorkelson, Carl Edward	*Racine*
Youngman, Edgar Frank	*Toowary, Australia*

—5

SUMMARIES

FACULTY

Emeritus Professors	6
Professors	89
Associate Professors	40
Assistant Professors	98
Lecturers (giving part time)	20
Instructors	178
Assistants	150
Total	581

(Included in the above are the following, who are on leave of absence for the academic year 1911–12: Professors, 4; Associate Professors, 2; Assistant Professors, 1; Instructors, 1)

STUDENTS

GRADUATE SCHOOL—377	
Fellows	30
Scholars	20
Other Graduate Students	327
COLLEGE OF LETTERS AND SCIENCE—2504	
Graduate Students	300
Senior Class	472
Junior Class	551
Sophomore Class	487
Freshman Class	567
Adult Special Students	93
Two-Year Pharmacy Students	26
Medical Students not Given Double Classification	5
Course in Public Health	3
Included in the above are the following:	
Course in Commerce—340	
Senior Class	45
Junior Class	56
Sophomore Class	108
Freshman Class	119
Adult Special Students	12
Course for Normal School Graduates—58	
Senior Class	31
Junior Class	27

Course in Pharmacy—38
Four Years' Course
Seniors 2
Juniors 4
Sophomores 3
Freshmen 3
Two Years' Course
Second Year 13
First Year 13
Course in Chemistry—88
Senior Class 17
Junior Class 25
Sophomore Class 21
Freshman Class 20
Adult Special Students 5
Medical School—57
Second Year 22
First Year 35
COLLEGE OF ENGINEERING—728
Graduate Students 26
Senior Class—128
Civil Engineering Course 54
Mechanical Engineering Course 34
Electrical Engineering Course 28
Chemical Engineering Course 8
Mining Engineering Course 4
Junior Class—153
Civil Engineering Course 54
Mechanical Engineering Course 33
Electrical Engineering Course 39
Chemical Engineering Course 13
Mining Engineering Course 14
Sophomore Class—155
Civil Engineering Course 52
Mechanical Engineering Course 30
Electrical Engineering Course 45
Chemical Engineering Course 16
Mining Engineering Course 12
Freshman Class 246
Adult Special Students 20
Students in Advanced Course included in the above:
Civil Engineering Course 17
Chemical Engineering Course 8
Electrical Engineering Course 21
Mechanical Engineering Course 10
Mining Engineering Course ..... 9—65

COLLEGE OF AGRICULTURE—743
Graduate Students 51
Long Course
Seniors 60
Juniors 83
Sophomores 150
Freshmen 143
Adult Special Students ..... 21— 457
Middle Course
Second Year 30
First Year 58
Adult Special Students ..... 13— 101
Home Economics
Seniors 11
Juniors 32
Sophomores 36
Freshmen 52
Adult Special Students ..... 3— 134
LAW SCHOOL—158
Third Year 36
Second Year 25
First Year 41
Seniors in Letters and Science Electing Law Studies 23
Unclassified Students 33
SCHOOL OF MUSIC—74
Graduates 5
Seniors 4
Sophomores 4
Freshmen 11
Supervisors' Course
Second Year 4
First Year 12
Adult Special Students 16
Unclassified Students 18
Students in other colleges electing music—260
WISCONSIN LIBRARY SCHOOL—34
Library Course 26
Joint Course 8
SUMMER SESSION OF 1911—1537
Letters and Science—
Graduate Students 402
Undergraduates and Teachers 720
Music 11
Law School 56
Engineers—
Graduate Students 22
Undergraduates and Artisans 194

Agriculture—		
Graduate Students	22	
Undergraduate Students	105	
Dairy School	5	—1537
Deducting students now attending the University		495—1042
Total		5283
Twice enumerated 92, leaving		5191
ADDITIONAL ENROLLMENT, COLLEGE OF AGRICULTURE—		
Short Course		
Second Year	175	
First Year	249	— 424
Dairy Course		133
Grand Total		5748
EXTENSION DIVISION (EXTRA MURAL COLLEGE)—		
Correspondence—Study Department		5936

(This total enrollment comprises all those who have enrolled for correspondence instruction within the current year, and also those carried over who had enrolled prior to July 1, 1911, but whose registration was then in force and whose time limit for completion of work had not terminated. Correspondence-study enrollments are made at any time throughout the entire year.)

In the above classification are included students enrolled in the Course for Training of Teachers as follows: Graduates, 1; Seniors, 239; Juniors, 205; Sophomores, 3; and in the Advanced Course, 31.

In the enumeration of adult special students above the classification by courses is as follows: Letters and Science, fourth year, 2; third year, 14; second year, 21; first year, 56. Music, applied, 16; Mechanical Engineering, third year, 2; second year, 2. Electrical Engineering, third year, 1; second year, 1. Mining Engineering, third year, 1. Chemical Engineering, second year, 1. First-year students in Engineering, 12. Agriculture, fourth year, 1; third year, 4; second year, 6; first year, 10. Agriculture (Middle Course), second year, 5; first year, 8. Home Economics, first year, 3.

SUMMARY BY STATES, FOREIGN COUNTRIES, AND SEX

	Men	Women	Total
Wisconsin	2,902	1,043	3,945
Illinois	366	144	510
Iowa	105	60	165
Indiana	68	52	120
Ohio	87	33	120
Michigan	55	34	89
Minnesota	61	24	85
Missouri	42	41	83
New York	43	15	58
South Dakota	26	15	41
Pennsylvania	24	11	35
Kansas	20	14	34
Kentucky	17	14	31
North Dakota	18	11	29
Montana	15	12	27
Texas	17	5	22
Colorado	14	7	21
Nebraska	13	6	19
Washington	15	3	18
Virginia	12	3	15
California	10	4	14
Massachusetts	10	2	12
New Jersey	10	2	12
District of Columbia	7	3	10
Oklahoma	6	4	10
South Carolina	9	..	9
New Mexico	5	3	8
Alabama	6	1	7
Maryland	4	3	7
Tennessee	4	3	7
Idaho	4	2	6
New Hampshire	5	1	6
North Carolina	6	..	6
Georgia	4	1	5
Louisiana	5	..	5
Oregon	3	2	5
West Virginia	5	..	5
Florida	4	..	4
Wyoming	3	1	4
Connecticut	2	1	3
Maine	3	..	3
Phillippine Islands	3	..	3
Arizona	1	1	2
Cuba	2	..	2

Hawaii	2	..	2
Mississippi	..	2	2
Vermont	2	..	2
Alaska	1	..	1
Porto Rico	1	..	1
Rhode Island	..	1	1
Utah	1	..	1
China	44	..	44
India	12	..	12
Japan	11	..	11
Mexico	10	1	11
Transvaal	6	..	6
Manitoba	3	1	4
Ontario	3	..	3
Peru	3	..	3
England	1	1	2
Nova Scotia	2	..	2
Quebec	1	1	2
Russia	2	..	2
Turkey	2	..	2
Argentine Republic	1	..	1
Australia	1	..	1
Austria	1	..	1
Belgium	1	..	1
British Columbia	1	..	1
Costa Rico	1	..	1
France	1	..	1
Germany	1	..	1
New Brunswick	..	1	1
Paraguay	1	..	1
Sweden	1	..	1
Switzerland	1	..	1
Total	4,159	1,589	5,748

INDEX

Accounting, Business.....244, 484
Cost 419
Administrative Problems...251, 254
Administration, Federal 252
Business 286, 495
State 252
Admission,
of Adult Special Students... 113
to the Bar 391
upon Certificate 109
of Graduates of Normal Schools 111
of Students from other Colleges 112
to the Summer Session..... 525
to the University 95
without Foreign Language... 97
Adult Special Students, Admission of 113
Advanced Course, Training of Teachers 324
Advisers, Student 83, 131, 330
Aesthetics 231
Agricultural,
Bacteriology 414
Chemist 255
Chemistry 215, 544
Economics 417
Education 419
Engineering 420, 544
Experiment Station 435
Hall 399
Journalism 209, 296, 421
Agriculture, College of..... 399
Accredited Farm System..... 404
Admission 408
Buildings 399
Certificates 312, 410
Courses of Instruction.....405
Dairy Courses 406, 407, 408
Degrees 410
Departments of Instruction.. 414
Extension Courses 407
Farm Lands 402
Farmers' Course 407
Institutes 436
Fees and Expenses 115, 405
Fellowships and Scholarships 409
Graduate Courses 405, 408
Library 403
Live Stock 402
Long Course...406, 408, 410, 414
Middle Course 406, 408, 412, 414
One Week School in Home Economics 407
Organizations 403
Plan of College Activities... 405
Short Course 406, 408
Special Facilities for Research 404
Summer Session Courses 406, 544
for Teachers 314, 406
Wisconsin Agricultural Experiment Station 435
Women's Course in Home Economics 407
Young People's Course in Agriculture 408
Agronomy 422
Summer Session 545
Algebra 218, 534
Course in Commerce 285
Preparation in, for Engineering 219
Alternating Currents 368
Alumni Publications 94
Anatomy 133
Medical School 454
Summer Session 526
Anglo-Saxon 165
Animal Husbandry 424
Summer Session 545
Applied Electrochemistry 356
Art 526
and Design 441
Arabic 197
Aramaic 197
Archaeology 115, 213
Assaying 280, 377
Assyrian 197
Astronomical Library 69, 473
Astronomy 134
Correspondence-study 483
College of Engineering..134, 363
Athletics 500, 507
Baccalaureate Degrees Conferred in 1911 562
Bachelors' Degrees, Requirements for 128, 129
Bacteriology and Hygiene..... 135
Agricultural 136, 414
Chemistry 280
Correspondence-study 483
Medical 136, 456
Laboratory 71
Band 468

Bar, Admission to 391
Bionomics 272
Biology 138,270
Chemistry 280
Board and Rooms 120
Board of Visitors..... 10
Botanical Methods 142, 527
Botany 139
Correspondence-study 483
Chemistry 280
Pharmacy 301
Summer Session 527
for teachers 315
Breeding, Experimental 428
Bridge Design 385
Bridge Engineering Department 332
Bryan Prize Fund 87
Buildings, Grounds and..... 65
Bulgarian 207
Bulletin of the University..... 93
Business Administration 483
Course in Commerce 286
Correspondence-study 483
Lecture Course 495
Business Organization 244
Bureau of Civic and Social Centers 505
Butter-making 425
Calculus 219, 220
Camp Randall 508
Canals and Rivers 373
Certificate, Admission upon.... 109
College of Agriculture..312, 410
Medical 445
Teachers' State 132, 311
Chadbourne Hall 118
Charges and Fees 114
Charities and Corrections 247
Cheese-making 426
Chemical, Engineering Course 352, 363
Advanced 354
Chemical Collection 77
Laboratories 72
Technology 280, 364
Chemistry 143
Agricultural 255, 277, 279
Engineering 281 352
Course in Commerce..... 286
Course in Pharmacy 301
Correspondence-study 484
of foods 278
Household 416
Industrial 277, 364
Metallurgical 378
Physiological..238, 278, 279, 460
Sanitary 278
Soil 278
Summer session 527
for teachers 143, 315
Chemistry, Course in..... 274
Admission 275
Charges and fees 282
Departments of Instruction.. 279
Plan of Course 276
Requirement for Graduation. 282
Choral Union 468
Circuits, University Extension. 492
Civil Engineering Course..... 340
Advanced 342
Climatology 224
Clinical Medicine 457
Clubs, Literary and Scientific 91, 548
Code Pleading 393
Colleges of the University..... 63
Colonial Politics 252
Commerce, Course in..... 283
Admission 283
Combined Engineermg and Commerce Course 362
Departments of Instruction.. 285
Graduate Students 289
Preparation of Teachers, 289, 316
Plan of Course 283
Requirements for Degree 128, 290
Special Lectures 290
Commercial Course for Engineers 288
Commercial Law 244
Commercial Mechanical Engineering 366
Committees, University Faculty 42
Common Law 392
Communicable Diseases....136, 456
Concerts 469
Constitutional Law 251
Consular Service 252
Contracts and Specifications... 371
Correspondence-study 476
Courses 482
Credits 481
Expenses 481
Method and System 479
Plan and Scope..... 477
Teaching by Mail 476
Counterpoint 226
Criminal Law 392
Cytology 141, 272
Dairy Building 400
Certificate 410
Courses 406, 408
Husbandry 425, 545
Dano-Norwegian 268
Debates, Joint 91
Debating and Public Discussion 501
Degrees 121
Conferred in 1911..... 562
in Engineering 122, 328
in Pharmacy 122, 301
Requirements for Baccalaureate 123
Requirements for Higher 122, 553, 556
Dendrology 141
Departmental Teachers' Courses 312

Departments of Instruction.... 133
College of Agriculture..... 414
Course in Chemistry 279
Course in Commerce..... 285
College of Engineering 363
Course in Journalism..... 295
College of Letters and Science 133
Law School 392
Medical School 454
Physical Education 513
University Extension 483, 494
Dietetics 441
Diplomas as State Certificates 132
Distribution of Wealth 248
Doctor of Philosophy, Requirements for Degree of..... 557
Doctor of Public Health..... 560
Drainage 433
Drawing, Public School 467
Correspondence-study 487
College of Engineering..... 366
Mechanical 215
Topographic 386
for Teachers 316
Drill, Military 519
Drug Collection 300, 78
Drug Store Practice..... 209
Dynamos, Construction of 368
Economic Geography 285
Entomology 427
Economics,
Agricultural 243, 245, 417
Course in Commerce..... 285
Home 436
Summer Session 546
Education 150
Agricultural 419
Correspondence-study 484
Lecture Course 493
Major in 151
Summer Session 528
for Teachers 316
Election of Studies 127
Electives 125
Electrical Engineering Course 348, 367, 539
Advanced Course 350
Correspondence-study 485
Electrochemistry 146
Course, Applied 356
Electron Theory 236
Elementary Law 250
Embryology 454
Employment Bureau 90
Engineering and Commerce combined 288, 362
Engineering,
Agricultural 420, 544
Civil 340
Advanced Civil 342
Chemical 352, 363
Advanced 354
Chemical Technology 364
Commercial Mechanical 366
Contracts and Specifications. 371
Correspondence-study, ...485, 488, 490
Drawing 366
Electrical 367
Electrochemical, Applied 356
Forestry and Wood Technology 371
Hydraulic and Sanitary..... 372
Inspection Tours 338
Laboratory Courses 000
Lecture Course 499
Machine Design 374, 540
Mechanical 344, 488
Advanced 346
Mechanics 375
Mining and Metallurgy 376
Museum 332
Physics 237
Railway 378
Roads and Pavements 380
Sanitary 372
Shop Work 380
Steam and Gas 382
Surveying 490
Structural 385
Topographic and Geodetic... 386
Wood Technology 371
Engineering, College of..... 328
Admission 328
Advanced Course 328
Algebra 329
Buildings 67, 331
Courses of Study 336
Degrees 555
Departments of Instruction.. 363
Electives for Students in Letters and Science 363
Equipment 331
Fees and Expenses 330
Four Year Courses 336
Graduate Work 336
Graduation in more than One Course 362
Inspection Trips 338
Laboratories and Apparatus. 332
Language Requirements 338
Libraries 331
Museum 332
Non-Resident Lecturers 339
Organization 328
Outlines 340
Six-year Course 337
Student Advisers 320
Summer Session 539
Summer Work 338
Technical Departments 363
English 156
Correspondence-study 485
College of Engineering..... 160
Composition 160
Course in Chemistry 280
Course in Commerce..... 286
Course in Journalism ...159, 296

Language and Literature.... 162
Lecture Course 497
Rhetoric and Composition... 160
Summer Session 528
for Teachers 158, 164, 317
Entomology 271, 427
Entrance Examinations 108
Requirements 95
Time of 95
Equipment, University 65
Equity 393
Ethics 231
Evidence 393
Evolution, Organic 272
Problems 245
Examinations, University 108
Law 389
Medical 85, 517
Physical 510
Expenses, Fees and..... 114
Experiment Station 435
Experimental Breeding 428
Extension, University 475
Correspondence-study 476
Debating 501
Exhibits 506
Expenses 500
Municipal Reference Bureau. 504
General Information and Welfare 503
Organization 475
University Credit 481
Vocational Institutes 506
Faculty 11
Committees of 42
Farm Management 418, 545
Farmers' Course 407
Institutes 436
Fees 114
Chadbourne Hall 118
College of Agriculture..... 115
Course in Chemistry 282
College of Engineering 115
Law School 116
College of Letters and Science 115
Medical School 115
Pharmacy Course 301
Graduate School 561
Gymnasium 69
Home Economics 437
Laboratory 117
Library 116
School of Music 116
Summer Session 116
Tuition and Incidental 115
University Demonstration School 116
University Extension 500
Fellowships 549
Fellows, List of 580
Festivals 529
Finance 247
Fine Arts 168
Floriculture 430
Food or Sanitary Chemist..... 278
Forge Work 421
Forest Products Laboratory.... 81
Forestry 371
Correspondence-study ..... .499
Lecture Course 499
French 260
Correspondence-study 485
College of Engineering 260
Course in Chemistry 280
Course in Commerce....260, 286
Literature 263
Summer Session 538
for Teachers 317
Funds, Undergraduate 87
Loan 89
General Information 83
General Information and Welfare 503
Geodesy 387
Geography, Physical 170
Commercial 285
Lecture Course 500
Summer Session 529
Geology 168
Correspondence-study 486
College of Engineering..... 358
Course in Chemistry..... 281
Course in Commerce 286
for Teachers ..... .317
Geometry 219, 367
German 175
Correspondence-study 486
Course in Chemistry..... 281
Course in Commerce 287
Lecture Course 496
Literature 181
Germanistische Gesellschaft, ...92, 177
Philology 186
Summer Session 530
for Teachers 318
Germanistische Gesellschaft, 92, 177
Gifts to the University..... 60
Glee Clubs 468, 469
Gothic 187
Government and Politics..... 250
of the University..... 62
Graduate Club 549
Graduate School 547
Admission 552
Aims and Methods 548
Assignment of Studies..... 553
Circular 561
Clubs and Societies 548
Courses 561
Doctor's Degree 557
Expenses 561
Fellowships and Scholarships 549
Organization 547
Requirements for Higher Degrees 123, 555, 556, 557
Second Degrees 553
Study in Absentia 556

Summer Session 526
Graduates,
Certificates for Normal School in Teachers' Course..... 130
of State Normal Schools.... 111
Resident 580
Summary of 578
Graduation in Less than Four Years 130
Greek 189
Correspondence-study 486
Hellenistic 192, 531
Lecture Course 496
Summer Session 531
for Teachers 318
Grounds and Buildings 65
Gymnasium 508
Exercises 513
Fees 69, 510
Practice 118
Women's 508
Gymnastics,
for Men 118
for Teachers 321
for Women 118
Harmony 226
Health, Care of..... 84
Courses in Public 452
Doctor of 560
Heating and Ventilation 383
Hebrew and Hellenistic Greek, ...192, 531
Hellenistic Greek, Hebrew and 192
Herbarium, University 79
Heredity 142, 272, 428
Higher Degrees 122, 553, 556
Conferred in 1911..... 570
Requirements for...122, 553, 556
Hiram Smith Hall 69, 400
Histology 133, 527
History 198
American 203
Ancient and Medieval 200
Correspondence-study 486
Course in Commerce 287
Course in Journalism 296
Lecture Course 494
Major in 199
Modern 202
of Music 227
Summer Session 531
for Teachers 318, 532
of University 50
Home Economics 436
Admission 437
Correspondence-study 487
Degree 437
Description of Courses..... 441
Electives 440
Facilities for Instruction.... 437
Fees and Expenses 437
Household Chemistry, Bacteriology and Economic Entomology 443
Outline of Long Course..... 438
Scope of Courses 438
Summer Session 546
for Teachers 319
Women's Course in..... 407
Thesis 440
Honorary Dergees,
Conferred in 1911..... 576
Honorary Fellowships 550
Honors 86, 132
Awarded in 1911..... 577
Horticulture 429
Summer Session 546
Horticultural-Soils Building ... 400
Household Art 441
Humanics 442
Husbandry,
Animal 424, 545
Dairy 424, 545
Poultry 431, 546
Hydrology 453
Hydraulic Engineering 372
Laboratory 333
Summer Session 540
Hygiene, Bacteriology and..... 135
Immunity 137, 456
Incidental Fees 115
Indo-European Comparative Philology 207
Industrial Chemist 277, 364
Information, General 83
for Women Students 84
Inspection Tours 367
Institutes, Farmers' 436
Institutional Management 443
Instructors and Assistants..... 26
Insurance, Economics 246
Mathematics 285
International Law 252
Interpretation 257
Introduction 50
Investigation, Scientific 453
Irish 207
Italian 265
Correspondence-study 487
Summer Session 538
Journalism 208
Journalism, Course in 290
Admission 293
Agricultural 296
Courses of Study 296
Departments of Instruction.. 295
General Requirements 293
Laboratory Equipment 292
Purpose and Plan 290
Scholarships and Prizes..... 293
Student Publications 292
Technical and Trade 291
University Press Clubs 293
Jurisprudence 251
Kant 232

Kinesiology 515
Labor, Legislation 245
Problems 245
Laboratories,
Anatomical 71
Bacteriological 71
Biological 71
Botanical 71
Chemistry 72
Forest Products 81
Geographical 73
Engineering 73, 322
Geological 73
Journalism 292
Mineralogical 73
Pathological and Medical Bacteriological 73
Petrographical 73
Pharmaceutical 299
Physical 73
Physiological and Physiological Chemistry 74
State Hygienic 74
Zoological 74
Laboratory Fees 117
Language and Literature Clubs 91
Language, English 142
Languages, Romance 258, 538
Latin 210
Correspondence-study 487
Major 210
Summer Session 532
for Teachers 319
Law School 388
Admission 389, 396
Admission to the Bar 391
Advanced Standing 390
Advantage of Location 396
Clubs 396
Courses of Instruction 392
Elective Studies 395
Fees and Expenses 396
Graduation 395
History 388
Library 395
Object of the Course 389
Procedure and Practice 394
Pre-legal Courses 390
Required Courses 394
Resources of 395
Summer Session 397, 543
Time of Opening 397
Law, Constitutional 251
Criminal 392
English and American 251
of the Press 210, 252
Roman 251
Lecture Courses, University Extension 490
Legislation 253, 490
Letters and Science, College of 123
Departments of Instruction .. 133
Diplomas as State Certificates 132
Electives 125
Election of Studies in other Colleges 127
Fees 114
Graduation in less than Four Years 130
Honors 132
Major Study Thesis 124
Period of Residence 131
Required Studies 124
Requirements for Bachelors' Degrees 123, 128, 129
Requirements for Higher Degrees 122
Student Advisers 131
Studies of Freshman Year ... 126
Summer Session 525
University Teachers' Certificate 132
Libraries 75
College of Agriculture 403
College of Engineering 331
Law School 75, 395
Madison Free 76
State Historical 75
State Law 76
Traveling, University Extension 492
University 75
Wisconsin Academy of Sciences, Arts, and Letters ... 75
Woodman Astronomical 474
Library School 304
Entrance Requirements 306
Summer Session 532
Tuition and Expenses 307
Limnology 273
Literature, Comparative 148
English 149
French 149
German 149
Latin 149
Lithuanian 207
Loan Funds 89
Logic 230
Long Course in Agriculture 406
Machine Design 374
Shop 533
Mail, Teaching by 476
Major Study 124
Manual Arts 214
Summer Session 533
for Teachers 319, 533
Masters' Degrees 556
Requirements for 122
Mathematics 218
Course in Chemistry 281
College of Engineering 219
Correspondence-study 487
Major 218
Summer Session 534
for Teachers 320

Mechanical Drawing 340, 540
Course in Chemistry..... 281
Engineering 344, 346, 487
Mechanics 375, 540
Medical Adviser's Office..... 85
Examinations 85, 517
Medical School 444
Admission 444
Advanced Standing 445
Aims and Methods 444
Certificate 228, 458
Choice of Courses 447
Clinical Medicine 457
Combined Courses 449
Complete Arts Course Preceding Medical Course 451
Credit for Medical Work.... 451
Degrees 128, 445, 446
Departmental Announcements 454
Fees and Expenses 115
Health Officers' Courses..... 452
Organization 444
Physicians' Courses 452
Scientific Investigation..... 453
Six Year Course 449
Mental Development 152
Metallurgical and Mining Laboratories 333
Metamorphism 172
Meteorology 224, 452
Summer Session 534
Middle Course in Agriculture.. 406
Military Drill 519
Roster of Corps 521
Science and Tactics 519
Mineralogy 171
Mining and Metallurgy 376
Laboratories 333
Mining Engineering 358
Advanced 360
Modern Language, Engineering. 338
Money Market 246
Morality, Evolution of 233
History of 231
Morphogenesis 273
Morphology 140
Municipal and Social Service, Institute of 473
Municipal Government 251
Museums 77
Anatomical 77
Chemical 77
Drug Collection 78
Engineering 332
Geological 78
Herbarium 79
Pathological 73
Paving Material 335
Zoological and Botanical 79
Music 225, 461
Applied 467
Band 468
Choral Union 468
Correspondence-study 488
Glee Clubs 468, 469
Orchestra 467
Public School 465
Recitals and Concerts..... 469
Summer Session 535
for Supervisors 465
for Teachers 320, 465, 467
Music, School of 461
Course of Study 462
Equipment 470
Fees 116, 470
General Announcement 461
General Information 471
Requirements for Entrance.. 462
Rules and Regulations..... 471
Tuition 470, 471
Mycology 140
Neurology 133, 526
Newspaper Writing 208, 295
Nora Samlag 92
Normal School Graduates, Admission of 111
Course for 129
Norse 267
Observatory, Student....69, 80, 474
Washburn 473
Woodman Astronomical..... 474
Officers of Instruction and Administration 11
One Week School in Home Economics 407
Oratory 255
Orchestra 467
Organ 462
Organization of the University. 63
Organizations, Social and Religious 93
Oriental Politics 252
Ornithology 271
Package Libraries 501
Paleography and Diplomatics... 205
Paleontology 173
Party Government 252
Pathological Laboratory 73
Pathology 228, 458
Medical School 458
Plant 430
Pattern Work.....380, 421, 533
Paving Material 335
Petrographical Laboratory 73
Petrology 171
Pharmacognosy 141
Pharmacology and Toxicology, ...228, 458
Medical School 458
Pharmacy 229
Laboratories 299
Libraries 300
Pharmacy, Course in 298
Admission 300
Collections 300
Correspondence-study 488
Courses of Study 301
Degrees 301

Fees and Expenses..... 301
Four Year Course..... 303
Laboratories 299
Library 300
Requirements for a Degree... 301
Philology, German 186
Indo-European Comparative.. 207
Philosophers, British 232
Philosophy 232
Correspondence-study 488
Course in Journalism....275, 296
Lecture Course 493
Summer Session 535
for Teachers 321
Physical Education, Department of 233, 507
Lecture Course 500
Summer Session 535
for Teachers 321
Physical Examinations 510
Physical Geography 285
Summer Session 529
Physical Sciences 498
Physics 232
Course in Chemistry..... 281
College of Engineering..... 237
Course in Commerce..... 287
Summer Session 536
for Teachers 321
Physiography 170
for Teachers 322
Physiology and Physiological Chemistry 238, 460
Laboratory 74
for Teachers 322
Course for Chemist 281
Medical School 460
Piano 462
Plant Nutrition 417, 434
Pathology 430
Political Economy 239
Correspondence-study 489
Course in Commerce 287
Course in Journalism..... 297
Lecture Course 494
Special Lectures 249
Summer Session 537
Political Institutions 253
Thought, History of..... 254
Political Science 250
Correspondence-study 489
Course in Commerce..... 288
Course in Journalism..... 297
for Teachers 323
Pomology 430
Portuguese 266
Poultry Husbandry 431
Summer Session 546
Practice Courses in Law..... 394
Pre-Legal Courses 390
Preparatory Work 100
Prescription Practice 229, 303
Press, Clubs 293
Law of 210, 252
Prizes 87
Procedure and Practice Courses 394
Professional Instruction for Teachers 312
Provenca. 262
Psychology 230
Public Health, Courses..... 452
Doctor of 560
Public School Music..... 465
Public Speaking 255
Interpretation 257
Summer Session 537
Public Utilities 254
Publications, Societies and..... 91
Student and Alumni 94
University 93
Railway Engineering 378
Recitals and Concerts..... 469
Regents 9
Regiment, Organization of..... 520
Roster of 521
Registration 7
Regulations, University 83
Religious Organizations 93
Rent of Rooms, Chadbourne Hall 118
Required Studies 95
College of Letters and Science 124
Law School 394
Requirements for Admission.... 95
for Degrees 122, 553, 556
for Graduation 128
Resident Graduate Students, List of 580
Rivers and Canals 373
Roads and Pavements 380
Roman Law 251
Romance Languages 258
Summer Session 538
for Teachers 323
Rooms and Board 120
Roster of Cadets 521
Russian 207
Sanitary or Food Chemist..... 278
Sanitary Engineering 372
Sanscrit 207
Scandinavian Languages 267
Scholars, List of 580
Science Club 92
Scientific Investigation 453
Senior Honors in English..... 157
Shop Practice, Instructors in.. 44
Shop Work 541
Summer Session 541
Short Course in Agriculture... 406
Six-Year Course, College of Engineering 327
Medical School 449
Social Organizations 93
Societies and Publications 91
Literary and Scientific..... 91
Sociology 247
Lecture Course 495
Soil Chemist 281

Sons 432
Summer Session 546
Spanish 265
College of Engineering..... 266
Course in Commerce 266, 288
Correspondence-study 489
Summer Session 539
Special, Adult Students, Admission of 113
State Certificates 132, 311
Hygienic Laboratory 71
Normal Schools, Graduates of 111
Statistics 246, 419
Steam and Gas Engineering..... 382
Laboratory 333
Stereopticons 492
Stock Judging 424
Structural Engineering 385
Correspondence-study 489
Student, Advisers 83, 131
Aids 89
Health Care of 84
Observatory 474
Publications 93, 94
Students 580
Admission of, from other Institutions 112
Admission of, Adult Special.. 113
List of 580
Summary of 730
by States, Foreign Countries, and Sex 734
Study Clubs 491
Summary of Graduates 578
of Students 730
Summer Dairy Course 406
Certificate 410
Summer Session 326, 525
Admission 525
Courses 526
Duration 525
Fees 525
Circular 526
Supervisors of Music 465
Support of the University..... 58
Surveying 386
Correspondence-study 490
Laboratory 334
Summer Session 542
Swedish Literature 268
Syllabi, University Extension.. 492
Table of Contents 3
Tactics, Military Science and.. 519
Taxation 245, 248
Teachers', Certificates 132, 311
Conventions and Institutes .. 492
Courses, Departmental 312
Course for Training.....310, 324
Reviews 490
Teaching Fellowships 550
Technology, Chemical 280, 364
Pharmaceutical 229
Textiles 441
Thermodynamics 237
Thesis, Doctor's 116
Bachelor's 124
Topographic and Geodetic Engineering 386
Torts 398
Tournaments and Contests..... 511
Toxicology 228
Chemistry 282
Pharmacology and 228
Medical School 453
Training of Teachers, Course for 310
Advanced Course 324
Agricultural 406
Departments of Instruction .. 314
Graduates of Normal Schools 326
Professional Instruction 512
Special Certificate 325
Special Lectures 327
Teaching Fellowships 326
Undergraduate Course 310
University Demonstration School 313
Trigonometry 219
Tuition 115
Undergraduate Course for Teachers 310
Scholarships and Funds 87
Undergraduates, List of 596
Uniform, for Military Drill.... 118
Women's Gymnastic 118
University Extension Division 475
Bulletins 501
Correspondence-study Courses 476
Debating 501
Expenses 500
General Information and Welfare 503
Historical Development 476
Lecture Courses 490
Organization 475
University Credit 475
University of Wisconsin..... 50
Admission to 95
Entrance Requirements 95
Equipment 65
Examinations 108
Fees 114
Government 62
History of 50
Laboratories 71
Libraries 75
Museums 77
Organization of 63
Publications of 93
Regents 9
Regulations 83
and the State 61
Support of 58
Teacher's Certificate ...132, 311
Year 83

Undergraduate Scholarships and Funds 87
Utilities, Public 254
Vacations 7
Veterinary Science 434
Visitors, Board of 10
Vocational Institutes 506
Subjects 108
Voice Culture 463
Vulgar Latin 267
Washburn Observatory 473
Publications 94, 474
Water Supplies, Biology of..... 456
Weather Bureau 80
Welsh 207
Winter Dairy Course 406
Wisconsin Experiment Station.. 435
Working Fellowships 551
Women Students, Information for 84
Young People's Course in Agriculture 408
Zoology 269
Medical 452
Laboratory 74
Summer Session 539
for Teachers 324

4:3-9
2502
1257

MICH 1-96