



LIBRARIES

UNIVERSITY OF WISCONSIN-MADISON

The University of Wisconsin, courses in agriculture: 1934-35. 1934

University of Wisconsin. College of Agriculture
Madison, Wisconsin: [University of Wisconsin, College of Agriculture], 1934

<https://digital.library.wisc.edu/1711.dl/7L4SUCUVK4RFH8F>

This material may be protected by copyright law (e.g., Title 17, US Code).

For information on re-use, see

<http://digital.library.wisc.edu/1711.dl/Copyright>

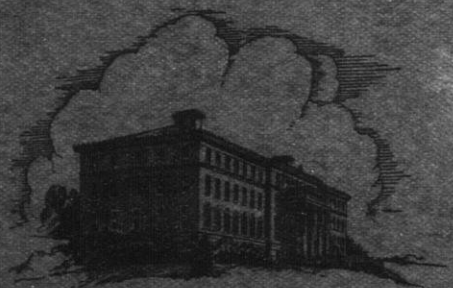
The libraries provide public access to a wide range of material, including online exhibits, digitized collections, archival finding aids, our catalog, online articles, and a growing range of materials in many media.

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.



THE
UNIVERSITY
OF
WISCONSIN

Courses in Agriculture
1934-35



CALENDAR

| | | |
|-------------|-----------------|---|
| Sept. 14-15 | Fri.-Sat. | Examinations for admission |
| Sept. 19-25 | Wed.-Tues. | Freshman Period (attendance required) |
| Sept. 21-25 | Fri.-Tues. Noon | Registration days for other new students |
| Sept. 22-25 | Sat.-Tues. Noon | Registration days for former students |
| Sept. 26 | Wednesday | Instruction begins |
| Sept. 29 | Saturday | Special examinations for removal of conditions |
| Oct. 6 | Saturday | Foreign language attainment examinations |
| Nov. 29 | Thursday | Thanksgiving Day; legal holiday (one day only) |
| Dec. 22 | Sat. Noon | Christmas recess commences |
| Jan. 8 | Tues. 8 a.m. | Instruction resumed |
| Jan. 19 | Saturday | (Examinations for removal of conditions (Foreign language attainment examinations) |
| Jan. 28 | Mon.-Wed. | Final examinations |

SECOND SEMESTER

| | | |
|------------|----------------|--|
| Feb. 4, 5 | Mon.-Tues. | Examinations for admission |
| Feb. 7 | Thursday | Registration day for new students |
| Feb. 11 | Monday | Instruction begins |
| Feb. 22 | Friday | Washington's birthday; legal holiday |
| April 20 | Sat. Noon | Spring recess commences |
| April 29 | Mon. 8 a.m. | Instruction resumed |
| May 4 | Saturday | Examinations for removal of conditions |
| May 18 | Saturday | Foreign language attainment examinations |
| May 30 | Thursday | Memorial Day; legal holiday |
| June 10-18 | Monday-Tuesday | Final examinations |
| June 17-18 | Monday-Tuesday | Examinations for admission |
| June 21-24 | Friday-Monday | Commencement exercises |

Summer Session 1935

| | | |
|-----------|----------|--|
| June 24 | Monday | Law school opens |
| July 1 | Monday | Registration Day, other schools and colleges |
| July 2 | Tuesday | Instruction begins |
| July 4 | Thursday | Independence Day; Legal holiday |
| August 9 | Friday | Six-week session closes |
| August 30 | Friday | Nine-week session and Law School closes |

BULLETIN OF THE UNIVERSITY OF WISCONSIN

Serial No. 1982, General Series No. 1766

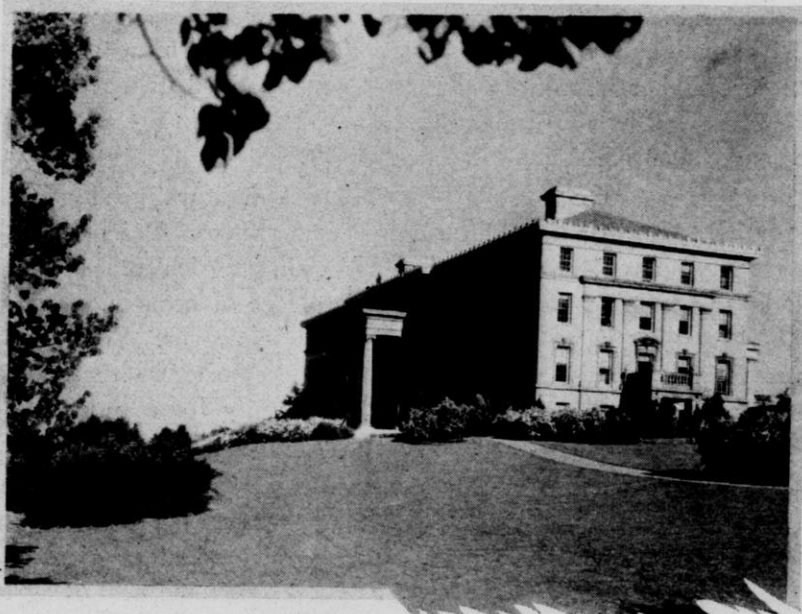
Issued monthly by the University of Wisconsin at Madison, Wisconsin
Entered as second-class matter, July 11, 1916, at the post office
at Madison, Wis., under the Act of August 24, 1912.

Courses in Agriculture

AGRICULTURE presents a constantly broadening field; and men trained in agriculture are finding new opportunities and new responsibilities. The conditions and problems facing agriculture today demand trained men; and the leaders in the agriculture of tomorrow will be the young men of today who complete their training.

Agriculture today needs not only men trained for actual farm operations, but also specialists in the various branches of agriculture for service in the schools, in the state and federal bureaus, and in the industries related to agriculture. The curriculum in the Wisconsin College of Agriculture is designed to serve these needs and is sufficiently flexible to give a broad general education in the cultural and scientific subjects, as well as practical training in agriculture. Here is a field worthy of the best young men of the nation. It will try their mettle and reward their industry and intelligence.

The great scope of the agricultural field provides a correspondingly wide range of opportunities for the trained man. Graduates of the College of Agriculture are finding useful and satisfactory careers as farm operators, either owners or managers, as teachers, club leaders,



AGRICULTURAL HALL

or county agents, as workers in the commercial enterprises related to agriculture and as scientists in the state, federal, or industrial laboratories.

A recent survey of the graduates of this College, covering a range of 51 years, found them occupying over 100 different types of positions. Seventeen per cent of the graduates were farm operators, 22 per cent were in commercial or industrial work related to agriculture, 38 per cent were in educational or scientific agricultural positions and 23 per cent were in non-agricultural fields.

OPPORTUNITIES IN AGRICULTURE

Farm operators. Successful farming of the present is founded on economical production of a high quality product, but in addition to this there must be an orderly distribution and satisfactory marketing of this product. The problems of distribution and marketing are no longer individual and can be met only by the cooperative activities of farmers. The success or failure of these cooperatives will in the end depend upon the intelligence and training of the farmers. The permanent solution of the agricultural problem will only be attained by the education of the farmer, not alone in the arts and sciences of agriculture but also in the economic and social fields.

The young man who wishes to operate his own farm or to manage a farm for another will find that the training received in the College of Agriculture will be worth many times its cost, both in the increased income and the enriched life which will result.

Teachers and extension workers. Many agricultural graduates have found the field of rural education very attractive. Teachers in the rural high schools, 4-H Club leaders and county agricultural agents are all aiding in training the farmers in the science of economical production and in the new problems of cooperative endeavor. Work in these fields offers a splendid opportunity for service to agriculture and the state, and at the same time offers an opportunity for a return on the time and money invested in a college education.

Agricultural scientists. The development of agricultural colleges and state and federal experiment stations has furnished positions for a large percentage of the Wisconsin agricultural graduates. The men in these fields have prepared themselves as experts in some field of agricultural science. Frequently they have continued their study beyond the four years of college work and have secured the M.S. or Ph.D. degree. Almost every phase of natural and social science is represented in the



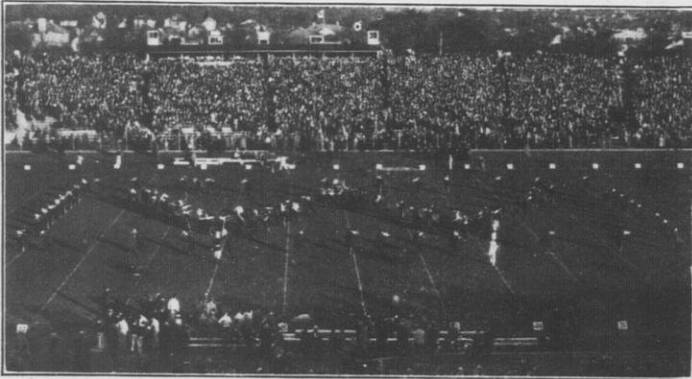
Harold Smith



Kenneth Ryckman



Paul Ellicker



The Band makes a "W"



W. A. Southworth



Kenneth Kundert



David Tubias



B. P. Russell

agricultural field and students are offered a wide latitude of choice in selecting their major line of study.

The future development of agricultural science depends upon the constant recruiting of capable young men for these fields, and splendid opportunities are waiting for the intelligent and industrious young man.

Agricultural commerce and industry. With the rapid development of the industries related to agriculture and with the constantly increasing importance of agricultural commerce, there has arisen a demand for agriculturally trained men in many parts of the business world. Such industries as feed and fertilizer manufacturing, the seed trade, the dairy products plants, the canning companies, the agricultural machinery concerns, and the meat packing establishments are furnishing splendid opportunities for agricultural college graduates. Others are finding positions with the large banks, trust companies, railroads, or insurance companies in their agricultural divisions. Agricultural economics, landscape gardening and agricultural journalism are offering commercial opportunities to others.

FACILITIES AND RESOURCES

As one unit of the University of Wisconsin, the College of Agriculture combines the advantages of the large university and the smaller college. All of the courses and resources of the University in general are available to the Agricultural College student. All of the basic science and cultural studies are carried outside of the College of Agriculture and wide latitude is offered the student in his selection of courses in any department of the University.

The presence of the Wisconsin Agricultural Experiment Station and the Wisconsin Agricultural Extension Service as integral parts of the College of Agriculture offers many additional opportunities to the agricultural student. He has an opportunity to follow the progress of the agricultural research work and in many instances to help with it. The extension workers bring back to the College the constantly shifting picture of agricultural conditions throughout the state and the student is thus kept informed of changing conditions.

The College possesses an excellent physical plant and equipment. The Experiment Station laboratories, equipment, and livestock, much of which is available for student use, give the College a wonderful advantage. Ten large buildings as well as numerous smaller ones, such as barns and greenhouses, are devoted exclusively to the College of Agriculture. The library, located in Agricultural Hall, is one of the finest in the Middle West. The staff of the College is large enough to offer well informed men in each of the fields.

COURSES OFFERED

The College of Agriculture offers five different courses or types of work; the Long Course, the Middle Course, the Short Course, the Winter Dairy Course, and Graduate Work.

THE LONG COURSE gives the most thorough type of training and offers the most opportunities to graduates. Four scholastic years are required for the completion of this work and it leads to the degree of Bachelor of Science in Agriculture. The course is planned to insure a thorough education in cultural subjects, basic sciences and practical agriculture. The central core of the work consists of courses which are required of all, but ample opportunity is offered for the student to elect work which will fit him for particular lines of work. The curriculum and plan of the course are described in more detail on page 6.


GRADUATE WORK is offered for those desiring further specialization in various lines of agriculture. The staff and the equipment of the entire University are available for this work and offer excellent opportunities. The chairman of the department concerned should be addressed for additional information.

THE MIDDLE COURSE is planned to give most of the practical agricultural work of the Long Course, with less however of the cultural and basic science features. See page 23 for a complete description.

THE SHORT COURSE consists of two winter sessions of fifteen weeks each and is designed to give young men training for the business of farming. Special courses are offered covering the practical application of science to the problems of production, marketing and rural life. A special circular describing this course may be obtained by writing V. E. Kivlin, Director.

THE WINTER DAIRY COURSE offers an opportunity for young men who have some practical experience in a dairy manufacturing plant to secure training in the basic sciences and in the newer methods of handling dairy products. The work is offered in the winter months and covers a term of twelve weeks. For further information write H. C. Jackson, Dairy Department.

STUDIES BY CORRESPONDENCE. No purely agricultural courses are given by correspondence. Courses which are required of or may be elected by students in the College of Agriculture, such as English, mathematics, botany, economics, and others, may be taken by correspondence and where such work is satisfactorily completed may be applied toward graduation. For further information address the University Extension Division.



THE LONG COURSE IN AGRICULTURE

THE LONG COURSE IN AGRICULTURE is the one which most students take and is the course leading to the degree of Bachelor of Science (Agriculture). Four years of University work are required although the course may be taken in less than four years if summer sessions are attended. The more desirable commercial, managerial, and professional positions require this course as the minimum preparation.

The Long Course serves a two-fold purpose; it gives a broad general training and furnishes specific technical knowledge of agriculture. It is hoped through this course to fit students to be useful to the highest degree in any line of agricultural effort and at the same time to be active in the uplift of their communities.

STUDENT GUIDANCE. Upon entrance in the College of Agriculture each student is assigned to one of the faculty members who serves as an adviser. Every effort is made to aid the student adjust himself to the college work and to guide him in the selection of his courses so that he may prepare himself in the field in which he is most interested and in which he will be most successful.

CURRICULUM. There is a single curriculum of minimum requirements and the student selects with the advice of the major professor, the subjects which point to a major objective. Such objectives may be preparation as a high school teacher of agriculture, marketing adviser, county agricultural agent, agricultural chemist along plant or animal lines, agricultural journalist, agricultural engineer, landscape designer, plant operator for dairy manufacturing, farming, or any one of over a hundred different types of positions in agriculture. The earlier the objective is determined the better the chances are for a well balanced training for the future.

The Wisconsin Curriculum has advantages over many others due to its flexibility. Of the 133 credits required for graduation, 49 credits are required in the College of Letters and Science and 50 credits in the College of Agriculture. There are 35 credits of fundamental work that are chosen with few limitations according to the student's interest and 75 credits are electives of the major grouping or student's interest.

PLAN OF COURSE—REQUIRED WORK

| FRESHMAN YEAR | | | |
|--|---------|--|---------|
| First Semester | | Second Semester | |
| | Credits | | Credits |
| Eng. 1a—Freshman composition | 3 | Engl. 1b—Freshman composition* | 3 |
| Chem. 1a—General chemistry | 5 | Chem. 1b—Qualitative analysis | 5 |
| Math. 71, 1 or 51 | 4 | Botany 1—General botany | 5 |
| An. Husb. 1—Livestock production | 3 | or Zoology 1—General zoology | (5) |
| or Agron. 1—General farm crops | (3) | Agron. 1—General farm crops | 3 |
| Convocation | 0 | or An. Husb. 1—Livestock production .. | (3) |
| Physical activity requirement | 0 | Physical activity requirement | 0 |
| | 15 | | 16 |

* Students earning a grade of A in English 1a are excused from further work in freshman English.

Students will elect their animal husbandry or agronomy in the first semester and the alternative subject in the second semester. Students who are certain they wish to continue mathematics beyond the required course should elect Mathematics 1; students who are to major in Agricultural Engineering should choose Mathematics 51; and those who carry Mathematics 71 with success will be permitted to take Mathematics 2 if they wish to continue training in mathematics. Majors in the technical agricultural engineering course may substitute Mechanics 3 for Botany 1. Majors in

Landscape Gardening may substitute Art Education 50 for Animal Husbandry 1 and Topographical Engineering 107 for Mathematics 71, 1 or 51.

SOPHOMORE YEAR

| First Semester | | Second Semester | |
|-----------------------------------|-----|--|-----|
| Agr. Bact. 1—General survey | 4 | Agr. Econ. 1—Prin. of Agr. Economics .. | 3 |
| Soils 1—Soil fertility | 4 | or Ag. Chem. 1—Elementary Bio- | |
| Econ. 1a—General economics | 4 | chemistry | 5 |
| Agricultural option | 3 | Agricultural option | 3 |
| Electives | 1-7 | Botany 146, Physiology 3 or substitute.. | 4 |
| | | Electives | 1-8 |

16-18

16-18

Students majoring in the following departments will take the following subjects instead of Botany 146 or Physiology 3:

- Agricultural Economics, Dairy Husbandry—Economics 1b.
- Agricultural Journalism—Rural Sociology 25.
- Agricultural Engineering—Advanced mathematics.
- Agricultural Education—Three credits in the Department of Education.
- Rural Sociology—Sociology 1 or 2.

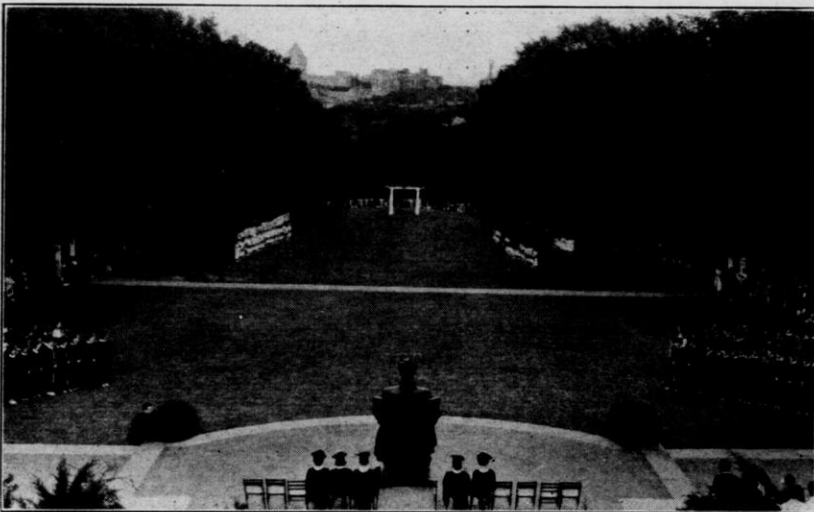
AGRICULTURAL OPTIONS

Freshmen in the Middle Course and sophomores in the Long Course must choose two courses from the following group. Only one subject in a given department can be counted as an option in meeting this requirement, but subjects not chosen as options may later be taken as electives.

| | | | |
|---|---|--|---|
| Agr. Engr. 5—Power & Machinery ... | 5 | Dairy 1—Introduction to dairying | 3 |
| Hort. 1—Principles of fruit growing ... | 3 | Hort. 3—Vegetable gardening | 3 |
| Poultry 1—Poultry raising | 3 | Econ. Ent. 1—Farm insects | 3 |
| Vet. Sci. 1—The animal body | 3 | Agr. Engr. 1—Surveys & Structures ... | 4 |

JUNIOR AND SENIOR YEARS. The work of the last two years is selected with the advice of the major professor and is directed toward the preparation of a specific objective. The student carries 16 to 18 credits each semester in order to secure 133 credits for graduation.

Certain additional requirements of the course are listed on page 21.



THE LINCOLN TERRACE

PREPARATION FOR SPECIFIC OBJECTIVES

The basic curriculum is flexible enough to provide the training necessary for any line of work in which the student may be interested. As examples of the types of training which may be secured in the College of Agriculture several suggested groupings of courses designed to train students for specific objectives are listed. Many others may be selected from the wide list of courses offered in the various Colleges of the University.

VOCATIONAL AGRICULTURAL TEACHERS OR AGRICULTURAL EXTENSION WORKERS

The teacher of agriculture in high school and the county agricultural agent require very similar preparation in technical subject matter. The Extension Department prefers men as county agricultural agents who have been successful in high school teaching. The following contains all requirements as shown on page 40, the fifteen credits required for the University Teachers' Certificate and a minimum of additional agricultural electives necessary to properly prepare for the teaching of agriculture in high school. Substitution of other courses in Education may be made by those persons looking to the extension field and not desiring to teach in high schools. The person completing this curriculum will receive the degree of Bachelor of Science (Agriculture and Education). See discussion in the Department of Agricultural Education on page 40 of this circular.

FRESHMAN YEAR

All subjects required—see freshman year on page 6

First Semester

Second Semester

SOPHOMORE YEAR

| credits | | credits | |
|--|-------|--|----|
| Economics 1a—General economics | 4 | Agr. Econ. 1—Prin. of agr. econ. | 3 |
| Soils 1—Prin. of soil fertility | 4 | Agr. Educ. 1—Rural Education | 2 |
| Agr. Bact. 1—Gen'l. survey | 4 | Dairy 1—Introduction to dairying | 3 |
| Poultry 1—Poultry raising | 3 | Econ. Ento. 1—Farm insects | 3 |
| Shop 2—Bench work, forge, and welding | 1 | Zoology 1 or Botany 1 | 5 |
| Electives | 0-2 | Shop 15—Gen'l. farm carpentry | 1 |
| | 16-18 | | 17 |

JUNIOR YEAR

| | | | |
|--|----|---|----|
| Educ. 31—Prin. of secondary educ. | 3 | Educ. 75—Psychology & practice of teaching | 5 |
| Agr. Engr. 5—Power & Machinery ... | 5 | Agr. Engr. 1—Surveys & structures ... | 4 |
| An. Husb. 126—Livestock feeding | 4 | Physics 61—Gen'l physics | 5 |
| Hort. 6—Prin. of landscape design | 3 | An. Husb. 2—Livestock management .. | 3 |
| Electives | 3 | | |
| | 18 | | 17 |

SENIOR YEAR

| | | | |
|--|-------|--|-------|
| Agr. Educ. 50—Teaching Agriculture .. | 3 | Agr. Educ. 128—Program building in vocational agriculture | 2 |
| Agr. Educ. 5, 25, or 103 | 2-3 | Agr. Econ. 155—Prices of agricultural products | 3 |
| Agr. Journ. 1—Writing farm news | 3 | Agr. Econ. 10—Farm Organization and Management | 3 |
| Pl. Path. 101—Diseases of plants | 3 | Agr. Educ. 110 or 103 | 1-2 |
| Hort. 103—Crop identification & standards | 2 | Electives | 7-9 |
| Electives | 2-5 | | |
| | 16-18 | | 16-18 |

BIOCHEMISTRY

The following grouping of courses is typical of a major in Agricultural Chemistry arranged for a student interested in biochemistry. Most students who complete this curriculum would be interested in a commercial or educational position in teaching or research and would continue graduate work for advanced degrees.

FRESHMAN YEAR

All subjects required—see freshman year on page 6
Take Math. 1

SOPHOMORE YEAR

| First Semester | | Second Semester | |
|---|---------|---|---------|
| | Credits | | Credits |
| Economics 1a—General economics | 4 | Agr. Econ. 1—Principles of agricultural economics | 3 |
| Agr. Bact. 1—General survey | 4 | Agr. Chem. 1—Elementary biochemistry | 5 |
| Vet. Science 1—The animal body | 3 | Dairy 1—Introduction to dairying | 3 |
| Chemistry 11—Quantitative analysis..... | 5 | Physiology 3—Animal physiology or Botany 146—Plant physiology | 4 |
| Electives | 0-2 | Electives | 1-3 |
| | — | | — |
| | 16-18 | | 16-18 |

JUNIOR YEAR

| | | | |
|--|-------|--|-------|
| Chem. 120, 121—Organic chemistry | 5 | Chem. 120, 121—Organic chemistry | 5 |
| German or French | 4 | German or French | 4 |
| Agr. Chem. 121—Dairy chemistry | 5 | Physics 1 | 5 |
| Electives | 2-4 | Electives | 2-4 |
| | — | | — |
| | 16-18 | | 16-18 |

SENIOR YEAR

| | | | |
|--|-------|---|-------|
| Chem. 130, 131—Physical chemistry | 5 | Chem. 130, 131—Physical chemistry | 5 |
| Agr. Chem. 110—Principles of bio-chemistry | 5 | Agr. Chem. 233—Seminary | 1 |
| Chem. 10—Mathematical chemistry | 3 | Agr. Chem. 100—Thesis | 2 |
| Agr. Chem. 233—Seminary | 1 | Electives | 8-10 |
| Agr. Chem. 100—Thesis | 2 | | — |
| Electives | 0-2 | | — |
| | — | | — |
| | 16-18 | | 16-18 |

AGRICULTURAL JOURNALISM

All subjects required—see freshman year on page 6

SOPHOMORE YEAR

| First Semester | | Second Semester | |
|---------------------------------------|---------|--------------------------------------|---------|
| | Credits | | Credits |
| Econ. 1a—General economics | 4 | Agr. Econ. 1—Prin. of ag. econ. | 3 |
| Soils 1—Soil fertility | 4 | Agr. Journ. 3—Farm Advertising | 3 |
| Agr. Journ. 1—Writing farm news | 3 | Agricultural Option | 3 |
| Agricultural Option | 3 | Electives | 7-9 |
| Electives | 2-4 | | — |
| | — | | — |
| | 16-18 | | 16-18 |

JUNIOR YEAR

| | | | |
|-------------------------------------|-------|---|-------|
| Journ. 2—Reporting* | 3 | Agr. Journ. 111—Writing farm features.. | 2 |
| Rural Soc. 25—Rural Life | 3 | Psychology 1—Intro. to psychology .. | 3 |
| Agr. Bact. 1—General survey | 4 | Electives | 11-13 |
| An. Husb. 126—Feeds & feeding | 4 | | — |
| Electives | 2-4 | | — |
| | — | | — |
| | 16-18 | | 16-18 |

* Journalism 22 may be substituted for Journalism 2 in case the course cannot be taken until the second semester.

SENIOR YEAR

| | | | |
|------------------------------------|-------|---|-------|
| Journ. 3—Copy Reading | 3 | Agr. Journ. 103—Publicity methods | 2 |
| Journ. 7—Community newspaper | 2 | Agr. Journ. 180—Methods & problems... 2 | |
| Agr. Journ. 150—Seminary | 2 | Pol. Science 7—Am. govt. & politics.... 2 | |
| Electives | 9-11 | Electives | 10-12 |
| | — | | — |
| | 16-18 | | 16-18 |

ANIMAL HUSBANDRY—ANIMAL SCIENCE COURSE

The following curriculum has been arranged for students in animal husbandry who wish to prepare for a teaching or extension position in agricultural colleges, for research positions in experiment stations or in industries, or for institutional or industrial positions that demand more science than is usually included in an animal husbandry curriculum. This arrangement aims to prepare for graduate work which is becoming increasingly necessary for filling positions of responsibility. The electives permit latitude in choosing production courses or to select courses that fit a candidate for various commercial or educational positions.

FRESHMAN YEAR

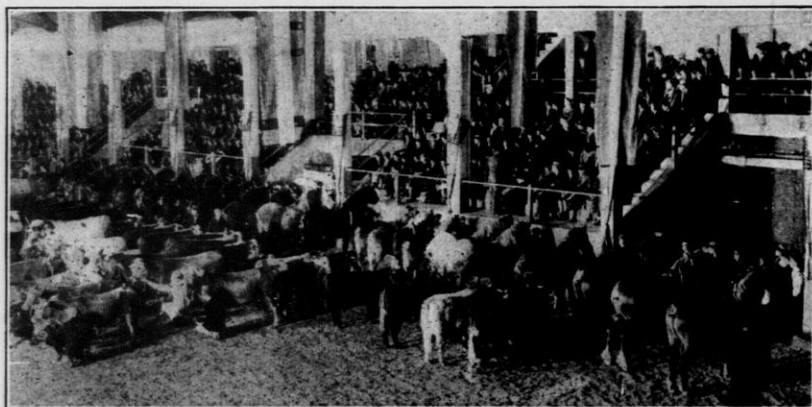
All subjects required—see freshman year on page 6
Take Math. 1 and Zoology 1

SOPHOMORE YEAR

| First Semester | | Second Semester | |
|---|---------|---|---------|
| | Credits | | Credits |
| Economics 1a—General economics | 4 | Agr. Econ. 1—Principles of agricultural economics | 3 |
| Agr. Bact. 1—General survey | 4 | Agr. Chem. 1—Elementary biochemistry | 5 |
| Chemistry 11—Quantitative analysis | 5 | Physiology 3—Animal physiology | 4 |
| Vet. Sci. 1—The animal body | 3 | Dairy 1—Introduction to dairying | 3 |
| Electives | 0-2 | An. Hus. 2—Livestock management | 3 |
| | — | | — |
| | 16-18 | | 18 |

JUNIOR YEAR

| | | | |
|--|-------|---|-------|
| Zoology 3—General Zoology | 3 | Chem. 120, 121—Organic Chemistry | 5 |
| Chem. 120, 121—Organic chemistry | 5 | Physics 61—General physics | 5 |
| Math. 2—Trigonometry & analytic geometry | 4 | An. Husb. 135—Seminary | 1 |
| An. Hus. 130—Sheep & swine production or An. Hus. 131—Horse & beef cattle production | 3 | An. Husb. 3—Types & breeds of livestock | 3 |
| Electives | 1-3 | or An. Husb. 133—Dairy cattle & milk production | 3 |
| | — | Electives | 2-4 |
| | 16-18 | | — |
| | | | 16-18 |



THE WISCONSIN LITTLE INTERNATIONAL
During the Farmer's Week the students hold a livestock show and have a fine entertainment for our visitors.

SENIOR YEAR

| | | | |
|--|-------|------------------------------|-------|
| Genetics 101—Principles of breeding | 3 | An. Husb. 135—Seminary | 1 |
| Agr. Chem. 122—Animal chemistry | 5 | Electives | 15-17 |
| An. Hus. 126—Livestock feeding | 4 | | |
| An. Husb. 135—Seminary | 1 | | |
| Electives | 3-5 | | |
| | 16-18 | | 16-18 |

TECHNICAL AGRICULTURAL ENGINEERING

Offered by the College of Agriculture in Co-operation with the College of Engineering of the University of Wisconsin

Because the College of Agriculture and that of Engineering are on the same campus at the University, Wisconsin is enabled to train and develop agricultural engineers, who get Bachelor's Degrees in both Agriculture and Engineering. It takes five years to complete the combined courses, but the product is worth the price. This is Wisconsin's answer to the challenge for more agriculturally minded engineers. The number may be low, but the quality is high, and the rewards to agricultural service are great. It is essential that an agricultural engineer should have the same basic engineering training that is required of other professional engineers; yet he must have a training in and an understanding of agriculture that other professional engineers can not or will not acquire. Technical agricultural engineers are trained for the research departments of farm implement companies and the agricultural engineering departments of other state colleges; for directors of rural electric lines; for the more economical construction of farm buildings; and for improved designs of drainage, irrigation and soil erosion control works.

FRESHMAN YEAR

| First Semester | Credits | Second Semester | Credits |
|--|---------|------------------------------------|---------|
| Engl. 1a—Freshman composition | 3 | Eng. 1b—Freshman composition | 3 |
| An. Husb. 1—Livestock production | 3 | Agron. 1—Farm Crops | 3 |
| Chem. 1a—General chemistry | 5 | Chem. 1b—General chemistry | 5 |
| Math. 51—Elementary analysis | 5 | Math. 52—Elementary analysis | 5 |
| Shop 1—Elementary pattern making ... | 1 | Shop 2—Forge and bench | 1 |
| | 17 | | 16-18 |

SOPHOMORE YEAR

| | | | |
|---------------------------------------|-------|---------------------------------------|-------|
| Agr. Eng. 5—Power and machinery | 5 | Physics 52—General physics* | 5 |
| Drawing 1—Elements of Drawing | 3 | Drawing 2—Elements of Drawing | 3 |
| Physics 51—General physics* | 5 | Agr. Eng. 1—Surveys and structures .. | 4 |
| Math. 54—Calculus | 4 | Math. 55—Calculus | 4 |
| Shop 4—Lathe work | 1 | Agr. Elective | 3 |
| | 16-18 | | 16-18 |

* The Elec. Eng. group takes Physics 53 and Shop 11 first semester; and Physics 54 and Shop 12 second semester.

JUNIOR YEAR

| | | | |
|--|-------|--|-------|
| Agr. Bact. 1—General survey | 4 | Agr. Econ. 1—Principles of Agr. Econ. | 3 |
| Soils 1—Soil fertility | 4 | Mechanics 1—Statics | 3 |
| Econ. 1a—General economics | 4 | Mechanics 2—Dynamics | 2 |
| Agricultural electives or option | 6 | Shop 6—Tool Making | 2 |
| | | E. E. 6—Elec. Mach. | 3 |
| | | E. E. 56—D. C. Lab. | 2 |
| | | Agr. elective | 2 |
| | | Shop 5—Planing and milling | 1 |
| | 16-18 | | 16-18 |

Mechanics 3—Mechanics of Materials, 5 cr., to be taken at summer session following the junior year.

SENIOR YEAR

| | | | |
|------------------------------------|-------|--------------------------------------|-------|
| Agr. Elective | 3 | Machine Design 2 | 1 |
| Mach. Des. 1—Mach. elem. | 4 | Steam & Gas 2—Thermodynamics | 4 |
| Steam & Gas 1—Thermodynamics | 4 | Steam & Gas 22—Testing | 2 |
| Shop 7 and 13—Shop & foundry | 3 | Mechanics 53 | 2 |
| E. E. 7—A. C. Mach. | 3 | Agr. Electives including major | 10 |
| E. E. 57—A. C. Lab. | 2 | | |
| | 16-18 | | 16-18 |

FIFTH YEAR

Leading to the B.S. Degree in Mechanical Engineering. Six weeks of industrial shop practice required for the Mechanical and Electrical groups, and six weeks of summer surveying for the Civil Engineering group.

| | | | |
|--|---|--|---|
| Mach. Des. 3—Mach. elem. | 4 | Hydraulics Elective | 2 |
| Steam & Gas 23—Adv. testing | 2 | Steam & Gas elective | 2 |
| Steam & Gas 105—Calculations | 2 | Mach. Des. 4—Adv. Des. | 4 |
| Eng. Admin. 101—Construction | 3 | Mach. Des. 12—Mach. test | 2 |
| Eng. Admin. 105—Manuf. methods | 2 | Eng. Administration 106—Power plants.. | 3 |
| Hydraulics 1—Mechanics of fluids | 3 | Eng. Administration 102—Prod. & oper. | 3 |
| Drawing 3—Descriptive geometry | 3 | Steam & Gas 124—Adv. testing | 1 |
| | | Shop 9—Adv. pattern | 1 |
| | | Chem. Eng. 8—Metallography | 2 |

For the B.S. Degree in Civil or Electrical Engineering, the schedule is modified beginning with the middle of the junior year. After that time, the engineering electives are governed by the requirements of the civil and electrical engineering curricula in the College of Engineering. The class advisers have a definite schedule of such electives.

DAIRY MANUFACTURING

This curriculum is suggested for the student interested in becoming a research worker or dairy plant laboratory technologist.

FRESHMAN YEAR

All subjects required—see freshman year page 6

SOPHOMORE YEAR

| First Semester | Credits | Second Semester | Credits |
|---|---------|---|---------|
| Econ. 1a—General economics | 4 | Agr. Econ. 1—Principles of Agr. Econ. | 3 |
| Vet. Sci. 1—The animal body or Poultry 1—Poultry raising | 3 | Dairy Ind. 1—Introduction to dairying.. | 3 |
| Agr. Bact. 1—General survey | 4 | Agr. Chem. 1—Elementary biochemistry | 5 |
| Electives | 5-7 | Physiology 3—Animal physiology | 4 |
| | 16-18 | Electives | 1-3 |
| | | | 16-18 |

JUNIOR YEAR

| | | | |
|---|-------|--|-------|
| Chem. 120, 121—Organic chemistry | 5 | Dairy Ind. 104—Cheesemaking | 4 |
| Agr. Chem. 121—Dairy chemistry | 5 | Agr. Bact. 121—Dairy bacteriology | 3 |
| Dairy Ind. 103—Creamery operation and management | 3 | Dairy Ind. 108—Dairy mechanics | 3 |
| Agr. Bact. 130—Determinative bact. | 2-3 | Dairy Ind. 124—Physical chemistry of dairy products | 3 |
| Electives | 1-3 | Electives | 3-5 |
| | 16-18 | | 16-18 |

SENIOR YEAR

| | | | |
|---------------------------------------|-------|---|-------|
| Dairy Ind. 105—City milk supply | 3 | Dairy Ind. 180—Advanced dairy manu- facturing problems | 3 |
| Dairy Ind. 123—Seminary | 1 | Agr. Bact. 126—Physiology of bact. | 3 |
| Electives | 12-14 | Dairy Ind. 123—Seminary | 1 |
| | | Dairy Ind. 106—Ice cream and con- densed milk products | 3 |
| | | Electives | 6-8 |
| | 16-18 | | 16-18 |

Students electing Economics 1b—General Economics in place of Physiology 3 or Botany 146, will take it the second semester of the Junior Year.

LANDSCAPE DESIGN

FRESHMAN YEAR

| First Semester | | Second Semester | |
|-------------------------------------|---------|-------------------------------------|---------|
| | Credits | | Credits |
| Engl. 1a—Freshman composition | 3 | Engl. 1b—English composition | 3 |
| Chem. 1a—General chemistry | 5 | Chem. 1b—Qualitative analysis | 5 |
| Art Educ. 50—Freehand drawing | 3 | Bot. 1—General botany | 5 |
| Agron. 1—Farm crops | 3 | Art Educ. 51—Freehand drawing | 3 |
| Physical activity requirement | 0 | Physical activity requirement | 0 |
| Convocation | 0 | | |
| | 14 | | 16 |

SOPHOMORE YEAR

| | | | |
|---|-------|---------------------------------------|-------|
| Hort. 1—Prin. of fruit growing | 5 | Econ. Ent. 1—Farm insects | 3 |
| Soils 1—Prin. of soil fertility | 4 | or Agr. Eng. 1—Surveys & structures | 4 |
| Hort. 6—Prin. of landscape design | 3 | Econ. 1a—General economics | 4 |
| Art Educ. 62—Elem. Design | 5 | Math. 71 (or Topographical Engr. 107) | 4 |
| Electives | 3-5 | Hort. 12—Elem. home grounds design.. | 3 |
| | 16-18 | Electives | 2-4 |
| | | | 16-18 |

JUNIOR YEAR

| | | | |
|----------------------------------|-------|---|-------|
| Agr. Bact 1—General survey | 4 | Agr. Econ. 1—Principles of Ag. Econ. .. | 3 |
| Rur. Soc. 25—Rural Life | 3 | Hort. 110—Seminary | 1 |
| Hort. 110—Seminary | 1 | Botany 146—Plant Physiology | 4 |
| Electives | 8-10 | Electives | 8-10 |
| | 16-18 | | 16-18 |

SENIOR YEAR

| | | | |
|-----------------|-------|-----------------|-------|
| Electives | 16-18 | Electives | 16-18 |
|-----------------|-------|-----------------|-------|

SUGGESTED ELECTIVES OUTSIDE COLLEGE OF AGRICULTURE

| | |
|--|-----|
| | Cr. |
| Botany 131—Dendrology | 2 |
| Botany 160—Plant Geography of Wisconsin | 2-4 |
| Physics 61—Agricultural Physics | 5 |
| or courses in Chemistry, Zoology, Physics, Geography, Geology, Physiology, Advanced Botany, or Advanced Mathematics. | |

SUGGESTED ELECTIVES IN HORTICULTURE

| | |
|--|-----|
| | Cr. |
| Hort. 7—Plant Propagation | 2 |
| Hort. 13—Lawns. I; 1934-35 & alternate yrs. | 2 |
| Hort. 14—Landscape Construction Problems. Yr; 1935-36 & alt. yrs. | 3 |
| Hort. 101—Advanced Home Grds. Design. I; 1935-36 & alt. yrs. | 3 |
| Hort. 102—Public Grounds. II; 1935-36 & alternate years | 3 |
| Hort. 104—Landscape Plants. Yr; 1934-35 & alternate years | 2 |
| Hort. 192—Rural-Regional Planning. II..2-3 | |



FIELD WORK IN HORTICULTURE

ECONOMIC ENTOMOLOGY

FRESHMAN YEAR

All subjects required—see freshman year on page 6
Take Zoology 1

SOPHOMORE YEAR

| First Semester | Credits | Second Semester | Credits |
|--|---------|---|---------|
| Agr. Bact. 1—General Survey | 4 | Agr. Econ. 1—Prin. of Agr. Econ. | 3 |
| Economics 1a—General economics | 4 | Agr. Chem. 1—Elementary biochemistry .. | 5 |
| Econ. Ent. 10—Elementary beekeeping .. | 3 | Econ. Ent. 1—Farm Insects | 3 |
| Agr. Option | 3 | Electives | 5-7 |
| Electives | 2-4 | | |

16-18

JUNIOR YEAR

| | | | |
|---|-----|--|-----|
| Econ. Ent. 102—Insect morphology and taxonomy | 3 | Botany 146—Plant Physiology | 4 |
| Botany 1—General Botany | 5 | Physics 61—General Physics | 5 |
| *German or French | 4 | Econ. Ent. 103—Orchard insects or Econ. Ent. 105—Field & garden crop insects | 2 |
| Electives | 4-6 | *German or French | 4 |
| | | Electives | 1-3 |

16-18

* Suggested for those expecting to do graduate work.

16-18

SENIOR YEAR

| | | | |
|--|-----|--|-----|
| Zool. 110 Entomology, anatomy and embryology | 3 | Zool. 107—Organic evolution | 3 |
| Econ. Ent. 100—Thesis | 2 | Bot. 130—Classification of seed plants.... | 3-4 |
| Econ. Ent. 123—Insect taxonomy of Larval forms or Econ. Ent. 125—Insects in relation to plant diseases | 2-3 | Econ. Ent. 120—Insect ecology | 3 |
| Econ. Ent. 130—Seminary | 1 | Econ. Ent. 100—Thesis | 2 |
| Electives | 8-9 | Econ. Ent. 130—Seminary | 1 |
| | | Electives | 4-6 |

16-18

SOIL TECHNOLOGY

FRESHMAN YEAR

All subjects required—see freshman year on page 6
Take Math. 1

SOPHOMORE YEAR

| First Semester | credits | Second Semester | credits |
|--------------------------------------|---------|--------------------------------------|---------|
| Soils 1—Soil Fertility | 4 | Soils 122—Soil physics | 2-3 |
| Agr. Bact. 1—General survey | 4 | or Soils 126—Fertilizers | 2-3 |
| Econ. 1a—General economics | 4 | Agr. Econ. 1—Prin. of econ. | 3 |
| Agr. Engr. 1—Surveys & structures .. | 4 | Bot. 146—Plant physiology | 4 |
| Electives | 0-2 | Math. 2—Trig. & anal. geometry | 4 |
| | | Agr. option | 3 |
| | | Electives | 0-1 |

16-18

16-18

JUNIOR YEAR

| | | | |
|--------------------------------------|-----|---|-----|
| Soils 127—Soil science | 2 | Soils 121—Soil analysis | 4 |
| Soils 120—Soil Management | 2 | Soils 125—Origin & classification | 3 |
| Agron. 102—Pastures | 2 | Chem. 20 & 21—Organic Chemistry | 4 |
| Geology 1—General geology | 5 | Agron. 106—Forage Crops | 2 |
| Chem. 12—Quantitative analysis | 3 | Electives | 2-4 |
| Physics 1 or Electives | 2-5 | | |

16-19

16-18

SENIOR YEAR

| | | | |
|--|-----|--|------|
| Physical Chem. or Language | 5 | Geog. 6—Regional econ. geography | 3 |
| Agr. Econ. 117—Outlines of land econ. .. | 2 | Soils 128—Seminary | 1 |
| Agr. Bact. 123—Soil bacteriology | 3 | Soils 180 or thesis | 2-4 |
| Plant Path. 101—Diseases of plants | 3 | Electives | 8-10 |
| Soils 128—Seminary | 1 | | |
| Soils 180 or electives | 2-4 | | |

16-18

16-18

AGRICULTURAL INDUSTRY AND COMMERCE

For many years, a large number of graduates of the Agricultural College have entered various industries related to agriculture, and the opportunities in this field seem to be increasing. Some of the more important fields are:

1. Agricultural Commerce
2. The Canning Industry
3. Meat and Poultry Products Industries
4. Commercial Dairy Mfg. Industry
5. The Livestock Feed Industry
6. The Agricultural Equipment Industry
7. The Fertilizer Industry
8. The Seed Industry
9. The Grain Marketing and Processing Industries

Position in rural banks, in the management of co-operative organizations, and other agricultural enterprises closely related to agriculture, offer further splendid opportunities for the agricultural college graduate with the proper training.

Each of the courses of study outlined below consist of three major parts in addition to the basic subjects in Agriculture and Science, which are given in the first two years.

Part A.—A minimum of 20 credits from a group of selected courses in General Economics and Commerce.

Part B.—Fifteen to thirty-five credits from a group of properly related courses, constituting the Industrial Major.

Part C.—Ten to thirty credits of electives may be selected in any field in which the student is interested.

FRESHMAN YEAR

| First Semester | Credits | Second Semester | Credits |
|---------------------------------------|---------|-------------------------------------|---------|
| Engl. 1a—Freshman composition | 3 | Engl. 1b—Freshman composition | 3 |
| Chem. 1a—General chemistry | 5 | Chem. 1b—Qualitative analysis | 5 |
| Animal Husb. 1—Livestock production.. | 3 | Agron. 1—General farm crops | 3 |
| Mathematics 1—Algebra | 4 | Bot. 1—General botany | 5 |
| | — | or Zool. 1—Gen. Zoology | (5) |
| | 15 | | — |
| | | | 16 |

SOPHOMORE YEAR

| | | | |
|--|-------|--|-------|
| Econ. 1a—General economics | 4 | *Econ. 1b—General economics | 4 |
| Agr. Bact. 1—General survey | 4 | Agr. Econ. 1—Principles of agr. econ. .. | 3 |
| Soils 1—Principles of soil fertility | 4 | Agr. Chem. 1—Elementary Bio-chemistry | 5 |
| or *Math. 7—Theory of investment ..(4) | (4) | or *Math. 7—Theory of investment .. | (4) |
| Agricultural option | 3 | Agricultural option | 3 |
| Electives | 1-3 | *Speech 7—Public speaking | 2 |
| | — | | — |
| | 16-18 | | 16-17 |

*Recommended courses, but substitutions may be made

Take Soils 1, the first semester and Mathematics 7 the second or Mathematics 7 the first semester and Agr. Chemistry 1 the second. See the Industrial Major recommendations.

JUNIOR AND SENIOR YEARS

The student should take 16 to 18 credits each semester so as to meet the requirements of sections "A", and "B" as outlined below.

"PART A" GENERAL COMMERCE AND ECONOMICS COURSES

A minimum of 20 credits should be chosen from this group of courses:

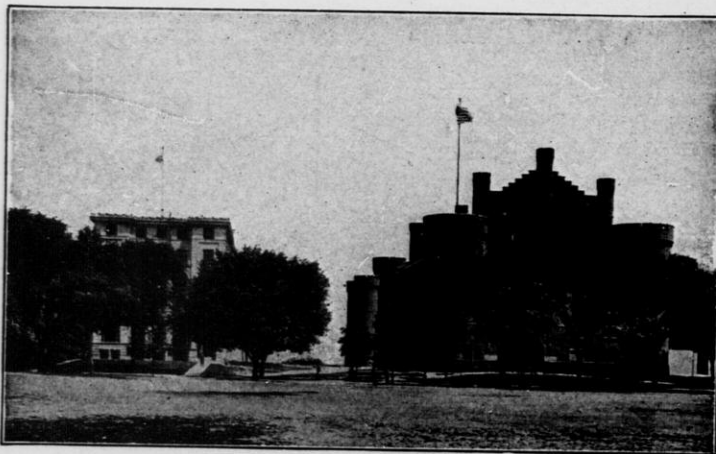
| | Credits |
|--|---------|
| Economics 5—Money and Banking | 3 |
| Economics 6—Business Letter Writing | 2 |
| Economics 8—Elements of Accounting | 3 |
| Economics 13—Marketing Methods | 3 |
| Economics 15—Advertising Principles | 2 |
| Economics 19—Economic History of the United States | 3 |
| Economics 31—Business Statistics | 3 |
| Economics 114—Marketing Management | 2 |
| Economics 137—Business Finance | 3 |
| Agr. Econ. 126—Int. Trade in Agr. Products | 3 |
| Agr. Econ. 128—Marketing Agr. Products | 3 |
| Agr. Econ. 155—Prices of Agr. Products | 3 |
| Law—Commercial Law | 2 |
| Philosophy 43—Business Ethics | 2 |
| Geography 106—Agricultural Geography | 3 |
| TOTAL..... | 40 |

PART "B" THE INDUSTRIAL MAJOR

The student will consult the Assistant Dean for assignment to an adviser, before the second semester of the Sophomore year, under whose direction a group of properly related courses will be selected, pertaining to the particular field in which he is interested.

The following groups of courses have been organized for the various Industrial Majors mentioned in the general outline of the course. Very careful attention has been given by all departments interested in this phase of training to prepare those groups in such a way that the subjects included within any particular group are closely related to the work of the particular industry for which the student may be preparing himself.

SPLIT MAJOR. The Executive Committee has approved the following list of Groups of Studies to meet the requirements of a split major. Other groups may be selected for a split major, to meet a specific need. If another grouping is selected it must be approved by the Executive Committee not later than the middle of the junior year.



THE "Y" AND "GYM"
These are among the first buildings that the new student learns to know.

THE MAJORS

AGRICULTURAL COMMERCE

A minimum of 15 credits must be selected from the following:

| | Credits |
|---|---------|
| Agr. Economics 10—Farm Organization & Management | 3 |
| Agr. Economics 117—Outlines of Land Economics | 3 |
| Agr. Economics 126—International Trade in Agr. Products | 3 |
| Agr. Economics 127—Cooperative Marketing | 3 |
| Agr. Economics 128—Marketing Agricultural Products | 3 |
| Agr. Economics 129—Cooperative Management Problems | 2 |
| Agr. Economics 152—Farm Movements | 2 |
| Agr. Economics 155—Prices of Agricultural Products | 3 |

THE CANNING INDUSTRY

A minimum of 25 credits must be chosen from this group for a split major.

| | Credits |
|---|---------|
| Agr. Bacteriology 125— Food Bacteriology | 3 |
| Agr. Bacteriology 126—Physiology of Bacteriology | 3 |
| Agronomy 103—Crop Identification & Standards | 3 |
| Agronomy 120—Seed and Weed Control | 3 |
| Agronomy 130—Crop Improvement | 3 |
| Botany 146—Plant Physiology | 4 |
| Dairy Industry 108—Dairy Mechanics | 3 |
| Agr. Chemistry 1—Elementary Biochemistry | 5 |
| Agr. Chemistry 110—Advanced Biochemistry | 5 |
| Economic Entomology 105—Field Crop and Garden Insects | 3 |
| Horticulture 3—Vegetable Gardening | 3 |
| Home Economics 6—Nutrition | 4 |
| Plant Pathology 101—General Pathology | 3 |
| Soils 126—Fertilizers and Manures | 2 |

In the Sophomore year Soils 1, Entomology 1, and Horticulture 1 should be selected.

It is very desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|--|---------|
| Agr. Journalism 1—Writing Farm News | 3 |
| Agr. Journalism 3—Agricultural Advertising | 3 |
| Agr. Journalism 103—Publicity Methods | 2 |
| Agr. Economics 14—Farm Business & Legal Practice | 3 |
| Agr. Economics 117—Outlines of Land Economics | 3 |

MEAT AND POULTRY PRODUCTS INDUSTRIES

A minimum of 25 credits must be chosen from the following for a split major.

| | Credits |
|---|---------|
| Animal Husbandry 2—Livestock Management | 3 |
| Animal Husbandry 3—Types and Breeds of Livestock | 2 |
| Animal Husbandry 126—Livestock Feeding | 4 |
| Animal Husbandry 130—Sheep & Swine Production | 3 |
| Animal Husbandry 131—Horse & Beef Cattle Production | 2 |
| Animal Husbandry 133—Dairy Cattle & Milk Production | 3 |
| Animal Husbandry 135—Seminary | 1 |
| Agr. Bact. 121—Dairy Bacteriology | 3 |
| Agr. Bact. 125—Food Bacteriology | 3 |
| Poultry Husbandry 1—Poultry Raising | 3 |
| Poultry Husbandry 8—Marketing Poultry Products | 3 |
| Poultry Husbandry 107—Advanced Poultry Management | 3 |
| Poultry Husbandry 106—Poultry Judging | 3 |
| Veterinary Science 123—Infectious Diseases of Livestock | 2 |
| Veterinary Science 125—Diseases of Poultry | 2 |

In the Sophomore year, Agr. Chemistry 1, Vet. Science 1, and Dairy Industry 1 should be selected.

It is very desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|--|---------|
| Agr. Journalism 1—Writing Farm News | 3 |
| Agr. Journalism 3—Agricultural Advertising | 3 |
| Agr. Journalism 103—Publicity Methods | 2 |
| Agr. Economics 14—Farm Business and Legal Practice | 3 |
| Agr. Economics 117—Outlines of Land Economics | 3 |

COMMERCIAL DAIRY MANUFACTURING INDUSTRY

A minimum of 25 credits must be chosen from the following:

| | Credits |
|--|---------|
| Dairy Industry 103—Creamery Operation & Management | 3 |
| Dairy Industry 104—Cheese Factory Operation & Management | 4 |
| Dairy Industry 105—City Milk Supply | 3 |
| Dairy Industry 106—Ice Cream Making | 3 |
| Dairy Industry 108—Dairy Mechanics | 3 |
| Dairy Industry 180—Advanced Dairy Manufacturing Problems | 3 |
| Dairy Industry 128—Seminary | 2 |
| Agr. Bacteriology 121—Dairy Bacteriology | 3 |
| Agr. Bacteriology 125—Food Bacteriology | 3 |
| Agr. Bacteriology 130—Determinative Bacteriology | 2-3 |
| Poultry 8—Marketing Poultry Products | 3 |

Agr. Chemistry 1, Dairy Industry 1, and either Poultry 1 or Vet. Science 1 should be selected in the sophomore year.

It is very desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|--|---------|
| Agr. Bacteriology 126—Physiology of Bacteria | 3 |
| Agr. Chemistry 121—Dairy Chemistry | 5 |
| Chemistry 120 & 121—Organic Chemistry | 5-10 |
| Physics 61—General Physics | 5 |
| Agr. Journalism 1—Writing Farm News | 3 |
| Agr. Engr. 5—Power and Machinery | 5 |
| Agr. Econ. 14—Farm Business & Legal Practice | 3 |

THE LIVESTOCK FEED INDUSTRY

A minimum of 25 credits must be chosen from the following:

| | Credits |
|---|---------|
| Animal Husbandry 2—Livestock Management | 3 |
| Animal Husbandry 3—Breeds & Types of Livestock | 2 |
| Animal Husbandry 126—Livestock Feeding | 4 |
| Animal Husbandry 130—Sheep and Swine Production | 3 |
| Animal Husbandry 131—Horse & Beef Cattle Production | 2 |
| Animal Husbandry 133—Dairy Cattle & Milk Production | 3 |
| Animal Husbandry 135—Seminar | 2 |
| Agronomy 102—Pastures & Pasture Problems | 2 |
| Agronomy 106—Forage Crops | 3 |
| Poultry Husbandry 1—Poultry Raising | 3 |
| Poultry Husbandry 8—Marketing Poultry Products | 2 |
| Poultry Husbandry 107—Advanced Poultry Management | 3 |
| Veterinary Science 123—Infectious Diseases of Livestock | 2 |
| Veterinary Science 125—Diseases of Poultry | 2 |
| Soils 1—Principles of Soil Fertility | 4 |

In the Sophomore year, Agr. Chemistry 1, Vet. Science 1, and Dairy Industry 1 should be selected.



It is desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|---|---------|
| Agr. Journalism 1--Writing Farm News | 3 |
| Agr. Journalism 3--Agricultural Advertising | 3 |
| Agr. Journalism 103--Publicity Methods | 2 |
| Agr. Economics 14--Farm Business & Legal Practice | 3 |
| Agr. Economics 117--Outlines of Land Economics | 3 |

AGRICULTURAL EQUIPMENT INDUSTRY

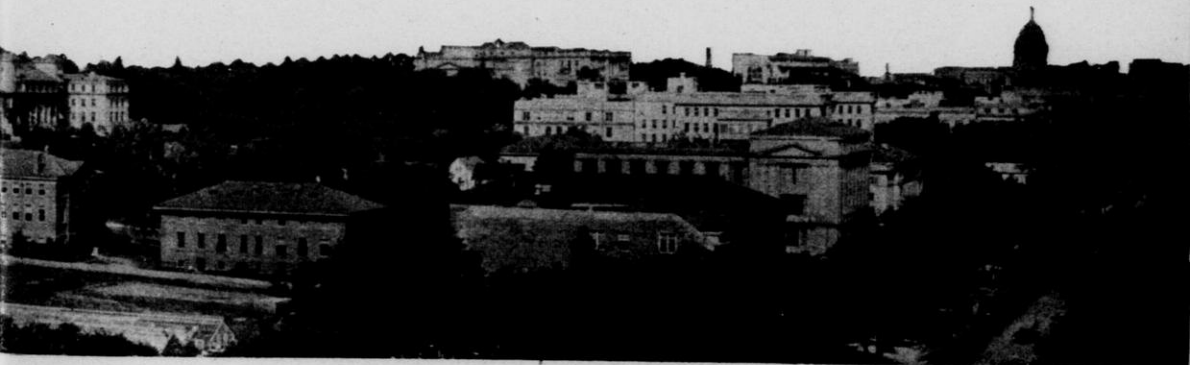
A minimum of 25 credits must be chosen from the following for a split major:

| | Credits |
|--|---------|
| Agr. Engineering 5--Power and Machinery | 5 |
| Agr. Engineering 103--Tractors | 3 |
| Agr. Engineering 105--Belt Machinery | 2 |
| Agr. Engineering 100--Thesis | 4 |
| Agr. Engineering 121--Seminary | 1 |
| Drawing 1--Elementary Drawing | 3 |
| Chemical Engineering 8--Metallography | 2 |
| Shop 2--Bench, Forge & Welding | 1 |
| Shop 15--General Farm Carpentry | 1 |
| Animal Husbandry 126--Livestock Feeding | 4 |
| Dairy Industry 108--Dairy Mechanics | 3 |
| Plant Pathology 101--Introduction to Plant Pathology | 3 |
| Soils 126--Fertilizers | 2 |
| Physics 61--General Physics | 5 |
| Poultry 107--Advanced Poultry Management | 3 |

In the Sophomore year, Soils 1, Agr. Engineering 1, and Economic Entomology 1 should be selected.

It is desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|---|---------|
| Agr. Journalism 1--Writing Farm News | 3 |
| Agr. Journalism 3--Agricultural Advertising | 3 |
| Agr. Economics 14--Farm Business & Legal Practice | 3 |
| Agr. Economics 117--Outlines of Land Economics | 3 |



THE FERTILIZER INDUSTRY

A minimum of 25 credits must be chosen from the following for a split major.

| | Credits |
|---|---------|
| Soils 120—Soil Management | 2 |
| Soils 121—Soil Analysis | 4 |
| Soils 126—Fertilizers and Manures | 2 |
| Soils 127—Soil Science and Plant Nutrition | 2 |
| Soils 128—Soil Seminar | 1 |
| Botany 146—Plant Physiology | 4 |
| Agronomy 102—Pastures and Pasture Problems | 2 |
| Agronomy 106—Forage Crops | 3 |
| Agr. Bacteriology 123—Soil Bacteriology | 3 |
| Chemistry 20-21—Organic Chemistry | 5 |
| Chemistry 130-131—Physical Chemistry | 5 |
| Plant Pathology 101—Crop Diseases and Their Control | 3 |

In the Sophomore year, Soils 1, Horticulture 1, and Agr. Engineering 5 should be taken.

It is desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|--|---------|
| Agr. Journalism 1—Writing Farm News | 3 |
| Agr. Journalism 3—Agricultural Advertising | 3 |
| Agr. Journalism 103—Publicity Methods | 2 |
| Agr. Economics 14—Farm Business and Legal Practice | 3 |
| Agr. Economics 117—Outlines of Land Economics | 3 |

THE SEED INDUSTRY

A minimum of 25 credits must be selected from this group to complete a split major.

| | Credits |
|---|---------|
| Agronomy 102—Pastures and Pasture Problems | 2 |
| Agronomy 103—Crop Identification and Standards | 2 |
| Agronomy 104—General Crops | 3 |
| Agronomy 106—Forage Crops | 3 |
| Agronomy 120—Seed and Weed Control | 3 |
| Agronomy 130—Crop Improvement | 3 |
| Plant Pathology 101—Crop Diseases & Their Control | 3 |
| Plant Pathology 116—Diseases of Field Crops | 2 |
| Genetics 101—Principles of Breeding | 3 |
| Genetics 104—Plant Genetics | 3 |
| Botany 129—Classification of Cultivated Plants | 3 |
| Soils 125—Soil and Land Classification | 3 |
| Soils 126—Fertilizers and Manures | 2 |
| Agr. Engineering 5—Power and Machinery | 5 |

In the Sophomore year, Soils 1, Ec. or Econ. Ent. 1, and Horticulture 3 should be selected.

It is desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|--|---------|
| Horticulture 6—Landscape Gardening | 3 |
| Animal Husbandry 126—Livestock Feeding | 4 |
| Agr. Journalism 1—Writing Farm News | 3 |
| Agr. Journalism 3—Agricultural Advertising | 3 |
| Agr. Journalism 103—Agricultural Publicity Methods | 2 |

THE GRAIN MARKETING AND PROCESSING INDUSTRIES

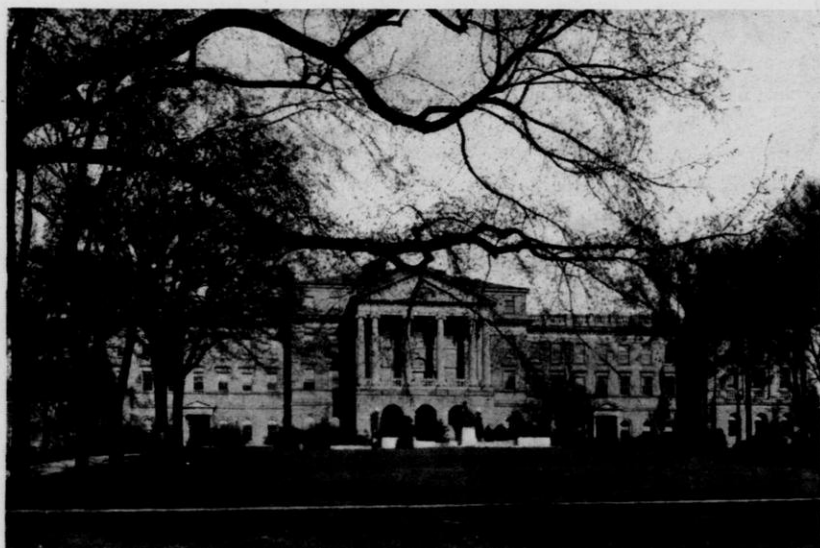
A minimum of 25 credits must be selected from this group to complete a split major.

| | Credits |
|--|---------|
| Agronomy 103—Crop Identification and Standards | 2 |
| Agronomy 104—Cereal Crops | 3 |
| Agronomy 120—Seed and Weed Control | 3 |
| Chemistry 20 and 21—Organic Chemistry | 5 |
| Agr. Chemistry 122—Advanced Biochemistry | 5 |
| Botany 146—Plant Physiology | 4 |
| Thesis 100 | 4 |
| Plant Pathology 101—Diseases of Plants | 3 |
| Chemistry 148—Introduction to Physical and Colloidal Chemistry | 5 |
| Agr. Bacteriology 125—Food Bacteriology | 3 |
| Agr. Bacteriology 126—Physiology of Bacteria | 3 |

In the Sophomore year, Agr. Chemistry 1 should be selected.

It is desirable to take some of the following courses to supplement the split major listed above.

| | Credits |
|---|---------|
| Agronomy 130—Crop Improvement | 3 |
| Plant Pathology 116—Diseases of Field Crops | 3 |
| Genetics 101—Principles of Breedings | 3 |
| Botany 117—Structure of Economic Plants | 3 |
| Agr. Journalism 1—Writing Farm News | 3 |



BASCOM HALL

REQUIREMENTS FOR THE DEGREE OF BACHELOR OF SCIENCE IN AGRICULTURE

In addition to the satisfactory completion of the courses listed on page 6, the student must comply with the following requirements in order to graduate with the degree of Bachelor of Science (Agriculture).

CREDITS AND GRADE POINTS

Graduation requires 133 credits and 133 grade points. Grade points are awarded on the following basis:

- Grade A—3 grade points per credit
- Grade B—2 grade points per credit
- Grade C—1 grade point per credit
- Grade D—0 grade points per credit

By use of the grade point system a student may readily determine the quality of progress he is making in the course.

A student who does not earn at least one grade-point per credit during the last two semesters of his attendance at the University will not be recommended for a degree with his class.

MAJOR

Each student must complete a major either in a department or in a related line of work. The major should be selected by the middle of the sophomore year to insure sufficient time to complete all requirements. The major *must* be selected not later than the end of the junior year.

The major consists of a minimum of 15 elective credits in a department. Not more than 5 credits in certain courses outside the given department may be substituted for an equivalent number of credits within the major department if reported in advance to the faculty. In case a student is interested in a line of endeavor involving more than one department, he may select as a major study a minimum of 25 elective credits of suitably related work in two or more departments. In the latter case the program must have the approval of the Executive Committee not later than the middle of the junior year. In either of the above cases, not more than 25 elective credits in any one department may count toward graduation.

A thesis is required as a portion of the major in certain cases and must consist of four credits.

Each student shall have farm experience satisfactory to the department in which he majors.

MINIMUM AND MAXIMUM LOADS

Students except during the first semester of the freshman year when a minimum of 15 credits may be taken, must take at least 16 and not more than 18 credits each semester, exclusive of drill, convocation and physical education, unless they secure special permission from the Executive Committee of Class Advisers to vary from the rule. This applies to seniors regardless of the number of credits remaining to complete the requirements for graduation.

A student who has received a standing of at least B in each subject of a regular schedule for the preceding semester may carry a maximum of 20 credits.

COLLEGE REQUIREMENTS

A minimum of 20 elective credits must be taken outside the College of Agriculture, preferably during the junior and senior years.

Each student shall complete a minimum of 50 credits in the College of Agriculture, including required agricultural courses, options, majors and electives. Courses taken outside the College as a part of the major do not count as a portion of the 50 credit requirement. Courses taught in departments outside the College of Agriculture even though listed in departments of the College of Agriculture do not count as part of the 50 required credits in the College of Agriculture. Courses given by staff members of the Forest Products Laboratory, approved by the Faculty of the College of Agriculture, shall be counted as agriculture.

Credit in Education 75 may be counted toward graduation only by those students who complete the requirements for the university teacher's certificate.

PHYSICAL ACTIVITY REQUIREMENT

Every freshman is required to take three hours a week in either physical education, military science or band instruction for a total of two semesters. The student shall express his choice between these alternatives when filling out his semester election card. Students who elect Military Drill must carry the work for two years. Freshmen and sophomores who take Military Drill are furnished a uniform by the University. A deposit of \$10.00 must be made which may be partially returned when the equipment is returned, subject to regulations of the military department.

For the completion of the basic course in Military Science a total of four scholastic credits will be awarded. For the completion of the advanced course in Military Science a total of eight credits will be awarded. Each two-year period shall be regarded as a unit and credits shall be granted only upon the completion of each one of these units. The appropriate number of credits are to be entered each semester as provisional until the course, basic or advanced as the case may be, has been completed. Grade points are to be awarded for the credits earned in Military Science as for other scholastic work.

FRESHMAN CONVOCATIONS are held regularly to give students an opportunity to hear talks of special interest to freshmen. Attendance upon these convocations is required of all freshmen except those who enter with one semester of work completed in some other collegiate institution or enter this college the second semester and complete that semester of work. Students who have been permitted to defer Convocation by the Executive Committee must present one additional credit for graduation.

THE MIDDLE COURSE

Leading to the Title of Graduate in Agriculture

This course is designed to meet the needs of students who have had a high school training but who cannot spend more than two years at the university. Requirements for admission are the same as for the Long Course.

The total requirements for graduation in the Middle Course are 64 credits and 64 grade points. All Middle Course students are required to take convocation and one year of physical education or two years of military science, or band instruction.

A maximum of ten elective credits may be taken outside the College of Agriculture. Subjects of the Long Course taken in the College of Letters and Science and not required in the Middle Course are considered electives outside the College of Agriculture.

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.

This course gives the maximum opportunity for choosing work for a vocational objective. Students should have an objective in mind when entering the course and plan their work so prerequisites may be taken for all courses desired. Early in the first semester the Assistant Dean should be consulted concerning objectives and future courses desired. Dairy manufacturing, poultry, animal husbandry, horticulture, or farm crops are usual fields of specialization, but others may be made.

FRESHMAN YEAR

| First Semester | | Second Semester | |
|--------------------------------------|---------|---------------------------------------|---------|
| | Credits | | Credits |
| Engl. 1a—Freshman composition | 3 | English 1b—Freshman composition | 3 |
| Chemistry 1a—General chemistry | 5 | Chem. 1b—Qualitative analysis | 5 |
| Electives | 7 | Electives | 8 |
| Convocation | 0 | Physical activity requirement | 0 |
| Physical activity requirement | 0 | | |
| | 15 | | 16 |

In the Sophomore year 16-18 credits of elective work must be carried each semester.

PRE-FORESTRY WORK

The pre-forestry work has been arranged to permit Wisconsin students who plan a professional training in forestry to attend the University of Wisconsin for two years, later transferring for the balance of the course to any one of the several institutions in other states which offer a degree in forestry.

The courses listed below are basic to the forestry work and correspond closely to the requirements of the forestry courses offered by other institutions. It is impossible to plan a course at one institution which exactly parallels that offered at another, however, little or no handicap in finishing the forestry work at another institution should be imposed upon students who complete the following two years of work. Students carrying this work should choose early in the second semester of the Sophomore year the institution to which they intend to transfer, so that arrangements can be made for attending the summer forestry camp. Virtually all institutions of-

fering a degree in forestry require that summer camp instructions be completed before the Junior year.

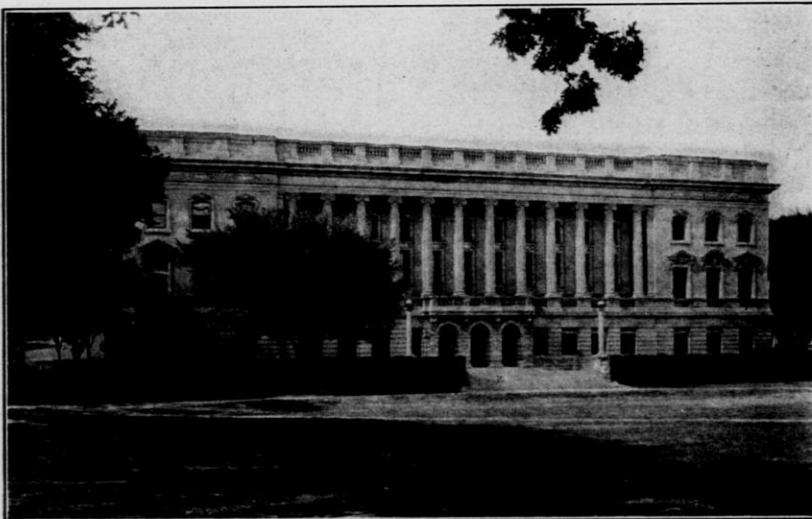
FRESHMAN YEAR

| 1st Semester | | Second Semester | |
|--------------------------------------|---------|-------------------------------------|---------|
| | Credits | | Credits |
| Engl. 1a—Freshman composition | 3 | Engl. 1b—Freshman composition | 3 |
| Chemistry 1a—General chemistry | 5 | Chem. 1b—Qualitative analysis | 5 |
| Agronomy 1—Genl. farm crops | 3 | Botany 1—General botany | 5 |
| Mathematics 1—Algebra | 4 | Econ. Ent. 1—Farm insects | 3 |
| or Math. 2—Trig. & anal. geometry.. | 4 | Electives | 0-2 |
| Convocation | 0 | | |
| Physical activity requirement | 0 | Physical activity requirement | 0 |
| | 15 | | 16-18 |

SOPHOMORE YEAR

| | | | |
|---------------------------------------|-------|---|-------|
| Soils 1—Soil fertility | 4 | Agr. Chem. 1—Elem. biochemistry | 3 |
| Geology 1—Genl. geology | 5 | Botany 130—Ident. & classification of | |
| Agr. Bact. 1—Genl. Bacteriology | 4 | seed plants | 3 |
| Drawing 1—Elements of drawing | 3 | Botany 131—Dendrology | 2 |
| Electives | 0-2 | Top. Engr. 108—Short course in engr. .. | 3 |
| | | Electives | 5-7 |
| | 16-13 | | 16-18 |

Electives should be chosen from the following: Math. 2, Econ. Ent. 102, Bot. 146, or An. Husbandry 1.



UNIVERSITY LIBRARY

ADMISSION

There are four methods for admission to the College of Agriculture for the Long or Middle Course: (1) Certification of the satisfactory completion of certain high school work; (2) Examination covering the work of high school grade; (3) Adult special students; and (4) Advanced standing students, from universities, colleges, normals, etc.

ADMISSION UPON CERTIFICATE

Graduates of accredited high schools may enter the University without examination on the presentation of a certificate showing the satisfactory completion of fifteen required units and containing the recommendation of the principal. Forms of 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 1.

Graduates of four-year non-accredited schools in Wisconsin will be admitted without examination but on probation, upon the favorable recommendation of the principal, providing the graduate has fully and satisfactorily covered in his high school course the full requirements for admission to the University.

Graduates of secondary schools outside Wisconsin will be admitted when recommended and certified by the principal, provided the minimum entrance requirements are met. Work submitted to be satisfactory for entrance shall be interpreted to mean an average standing of "good." This applies to schools of the North Central Association or of a school maintained on the basis of regular inspection accredited relationship with the state university or other university included in the membership of the Association of American Universities.

Credentials properly certified by the principal on forms provided by the University should be submitted for approval by the University before August 1.

ENTRANCE REQUIREMENTS

Entrance requirements are stated in units of high-school work, a term which is not to be confused with the term *credit* as applied to university work. A unit represents five class periods a week in one branch of study for a school year of at least 36 weeks. Two laboratory periods in any science or vocational study are considered as equivalent to one class period. In closely allied subjects, such as botany and zoology, not usually taught throughout the entire year, units may be constructed by adding the respective time values of the subjects. Three periods a week for a year and a half may be counted as one unit.

Fifteen units, distributed as follows, are the fundamental requirements for regular admission to any college or course in the University:

I. Two units of English are required of all entrants; three units are recommended for all and are required of those who do not offer two units of foreign language. One unit of algebra and one of geometry are also required of all, with an additional half or whole unit of algebra recommended for those interested in the technical agricultural engineering major.

II. Two units of science or history, or two units of one of the following foreign languages—French, German, Greek, Hebrew, Italian, Latin, Norse, or Spanish—must be presented by all. If foreign language is offered there must be at least two units

in a single language, although in exceptional cases one unit may be offered as the optional subject.

III. The remaining units necessary to bring the total to fifteen must be offered from groups A and B, with a maximum of four units from Group B and a total of not more than four units in any single subject.

GROUP A

| Units | | Units | | Units | |
|------------------|-----|------------------------|-----|-----------------------|-----|
| English | 1-2 | History and Civics | | Science | |
| Foreign language | | History | 1-4 | Botany | ½-1 |
| French | 1-4 | Civics | ½-1 | Biology | 1 |
| German | 1-4 | Economics | ½ | Chemistry | 1 |
| Greek | 1-3 | Mathematics | | General Science | ½-1 |
| Hebrew | 1-2 | Advanced algebra | ½-1 | Geography | ½-1 |
| Italian | 1-2 | Solid geometry | ½ | Physics | 1 |
| Latin | 1-4 | Trigonometry | ½ | Physiology | ½ |
| Norse | 1-2 | | | Zoology | ½-1 |
| Spanish | 1-4 | | | | |

GROUP B

| | Units | | Units |
|---------------------------------|-------------------|--|-------|
| Agriculture | 1-4 | Mechanical drawing | 1-4 |
| Bookkeeping | ½-2 | Shop work | 1-2 |
| Commercial law | ½ | Shop work and drawing | 1-4 |
| Commercial arithmetic | ½ | Music | 1-4 |
| Commercial geography | ½ | History and appreciation | 1 |
| Business org. | | Theory and harmony* | 2 |
| Office practice | | Choral music | ½-1 |
| Salemanship | | Orchestra | ½-2 |
| | If taken in | Band | ½-2 |
| | the junior or | Applied music | ½-2 |
| | Senior year | Optional (not including drill subjects | |
| Shorthand | ½ | such as penmanship, physical educa- | |
| Typewriting (only ½ unit if not | 2 | tion, or military training) | ½-1 |
| combined with shorthand) | ½-1 | * Not less than 2 units accepted. | |
| Domestic art | 1-2 | | |
| Domestic science | 1-2 | | |
| Drawing, art, and design | 1-4 | | |

ADVANCED CREDIT for high school work may be granted to students with satisfactory average standings presenting more than 15 units accepted for admission, provided: (1) the subjects in which advanced credit is sought are the general subjects accepted for admission to the University; (2) the work is as advanced as work given in the freshman year; (3) the student's course of study in which credit is desired be approved by the chairman of the department and (4) the students pass a satisfactory examination at least two hours in length, held at the University before or during the Christmas recess. No advanced credit will be given for work in language unless it be in excess of six units of language offered for admission, nor will advanced credit be given for less than three semester hours.

Any student who believes he had in the secondary school the equivalent of any required course in the Agricultural College, may apply for examination in the course. If the examination be satisfactory to the department, exemption from the course is granted without reducing the number of credits for graduation.

ADMISSION UPON EXAMINATION

Applicants who have not been graduated from a secondary school may be admitted to the University upon passing entrance examinations in the required number and kinds of units as specified above. The dates of the regular entrance examinations are listed in the calendar on the front cover.

All candidates must be present at 9 o'clock on the first day of the examination. No special examinations are given.

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. For the character of the entrance examination, see University catalog.

ADMISSION ON THE ADULT SPECIAL BASIS

Citizens of Wisconsin, 21 years old who do not possess all the requirements for admission and are not candidates for a degree, may be permitted to enter the College of Agriculture upon giving satisfactory evidence to the registrar of the University that they are prepared to take advantageously the studies which they desire. Students are generally allowed to select their studies only from courses open to freshmen. Exceptions are permitted by the Executive Committee of the College of Agriculture upon satisfactory grounds, but the student must show special necessity for the exception.

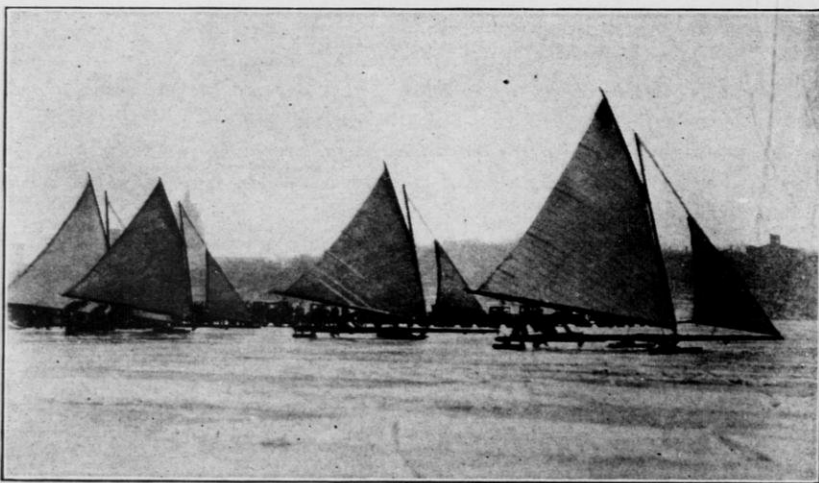
Candidates applying for admission on this basis are required to present a detailed statement of their preparatory studies at the time of their admission.

Adult special students who desire subsequently to become candidates for a degree must satisfy the regular entrance requirements before beginning the work of the junior year. *The term "Adult Special" applies to entrance and does not grant special privileges in selection of subjects.*

ADMISSION FROM UNIVERSITIES, COLLEGES, NORMALS, ETC.

The College of Agriculture will give credit for work taken at other institutions where such work corresponds with the requirements of the agricultural courses. Evidence must be presented showing sufficient entrance units before advanced credits will be considered.

Transcripts should be sent to Asst. Dean I. L. Baldwin before September first if possible. A satisfactory scholastic record and honorable dismissal are required.



ICE BOATING IS POPULAR

FRESHMAN PERIOD

All freshmen are required to be present at the University on the Wednesday preceding the beginning of instruction in September 1934 and to remain throughout the week. This period (September 19 to 25) will be devoted to registration, conferences with advisers, physical examinations, aptitude tests, special educational examinations, assignments to classes, lectures and discussions on subjects of importance to new students, and a general introduction to university life.

Because attendance throughout the entire period is required, it is essential that all details connected with admission be attended to as early as possible. Students who graduate from high schools or academies in June should inform their principals sometime in May or early June of their intention to attend the University in the fall, so that the necessary certificates may be prepared and other important data furnished to university authorities.

Rooms for the semester should be secured in advance of Freshman Period so that there will be no confusion, uncertainty, or waste of time during the days when attention should be centered on "getting started."

FEES AND EXPENSES

The largest expense of the student is for board and room. Rooms can be obtained in student rooming houses and private residences in the city at about \$2 a week for each student. Board in clubs, private families, and cafeterias average about \$5 a week. Many students partly support themselves by assisting at boarding houses or by doing other kinds of work that do not conflict with their studies.

The cost of textbooks, stationery, locker fees, athletic suits, and so forth is from \$25 to \$40 a year.

An incidental fee of \$26.50 a semester is charged each student. This includes a fee for medical attention, as explained on page 31. Non-residents of Wisconsin pay a tuition fee of \$100 a semester in addition to this incidental fee. An additional fee of \$3 is charged students who pay their fees after the regular registration days (see calendar). The Bursar shall refuse to accept fees from any student who does not pay promptly after his registration card is issued. The University reserves the right to alter these charges without further notice.

Laboratory fees for required courses taken in the College of Letters and Science are as follows: In all courses there is a possible refund at the end of the semester, depending on the amount of breakage in the laboratory.

| | |
|-----------------------------------|---------|
| Chemistry 1 (each semester) | \$12.50 |
| Physics 61 | 7.00 |
| Botany 1 | 5.00 |
| Zoology 1 | 5.00 |
| Botany 146 | 5.00 |
| Physiology 3 | 3.00 |

When elective courses are taken laboratory fees vary according to courses taken.

Graduate students pay the same fees as undergraduate students. Fellows, scholars, and student assistants are required to pay the regular laboratory fees, but instructors and assistants are exempt. in their own department.

Students who take military drill are furnished a uniform by the University. A deposit of \$10 must be made subject to regulations of the Military Department.

A study of the above shows that a freshman has laboratory fees of approximately \$25, and incidental fee of \$26.50 each semester and also may have a military uniform deposit of \$10 for the first semester.

FINANCIAL HELP FOR STUDENTS

The University has made provisions for a limited amount of financial help for needy students. While every possible assistance is rendered self-supporting students of the College of Agriculture they are advised not to enter the University without some available funds. Students of the College of Agriculture are urged to make use of the following suggestions and apply to proper persons.

OPPORTUNITY FOR WORK WHILE TAKING THE COLLEGE COURSE. Many students help to pay the expense of their college course by waiting on tables, tending furnaces, restaurant work, dish washing, work in private homes, canvassing, etc. The University operates an employment bureau which endeavors to secure satisfactory employment for worthy students. Students desiring work should write the Student Employment Office, Administration Building, University of Wisconsin, Madison, and receive application blanks and detailed information about student employment in Madison. They should arrive in Madison a few days ahead of registration to get work that may be available. As places of employment 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 reserve funds for use until employment is obtained.

STUDENT LOAN FUND. There is a fund of nearly \$2,000 which is available to all students in the College of Agriculture. This fund is to be loaned to needy students, in small amounts without interest, for short time loans. The money is to be returned from the first available earnings of the student. If the note is not paid at maturity, 6 per cent interest will be charged from the date of maturity until payment is made. Apply to Assistant Dean I. L. Baldwin.

FRESHMAN SCHOLARSHIPS. Five scholarships of \$100 each will be awarded to freshmen in the Agricultural courses who are residents of Wisconsin. An essay on an assigned topic must be presented together with certain references, before August 15, 1934. For further information write Assistant Dean I. L. Baldwin, College of Agriculture, Madison, Wisconsin.

WISCONSIN LEGISLATIVE SCHOLARSHIPS. The Regents of the University remit the non-resident tuition to a number of needy and worthy non-resident students upon the basis of scholastic attainment. Apply to I. L. Baldwin during the second semester and before March 1.

GRADUATE FELLOWSHIPS AND SCHOLARSHIPS. Twelve fellowships and two scholarships are offered graduate students in this college. The fellowships carry a payment of \$600 cash for the year in addition to a remission of the non-resident fees of \$200 for students who live in other states, and the scholarships carry \$250 a year with the remission of non-resident fees to students from other states.

There are also three all-university fellowships and two special scholarships for which our graduate students may compete with other graduate students of the University.

These are granted to those applicants who are best fitted for the work selected. Application for these honors is made to the Dean of the Graduate School on proper forms before February 15.

AGRICULTURAL STUDENT ORGANIZATIONS

Several societies, maintained by the agricultural students, meet at intervals to discuss questions related to their special interests. The following list will give an idea of the nature of the various clubs and societies.

Alpha Zeta. A chapter of the national honorary agricultural fraternity is maintained by faculty and student members.

The Country Magazine is a student magazine published monthly by students in the college.

The Saddle and Sirloin Club is an organization of students interested in animal husbandry. The "Wisconsin International" is a phase of this work and their support is given to the Stock Judging Teams which represent the Agricultural College at the International Livestock Show and the National Dairy Show.

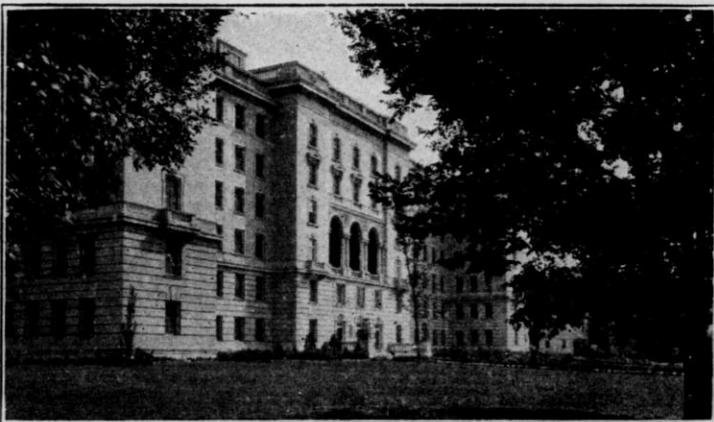
Blue Shield consists of a group of students interested in rural organization work. Its programs prepare the men in spirit, mind, and body to become rural workers and leaders particularly in community work.

The 4-H Club is an organization composed of students who have carried the 4-H Club work before coming to college.

The Agricultural Student Council with representation from each of the Agricultural and Home Economics student organizations serves to coordinate all of the student activities.

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, to study the intri-



GUARDIAN OF STUDENT HEALTH

To provide the best medical and hospital care the university has this institution—the Wisconsin Memorial Hospital where the students go for medical attention.

cate problems of the relation of health to higher education, and to prevent disease among the students.

MEDICAL EXAMINATIONS. Students entering the University for the first time undergo a careful medical examination to determine their fitness for university work. An appointment for medical examination is made at the time of registration. Records of the results of these examinations are kept in the office of the Department of Clinical Medicine for future reference in the supervision of the mental and physical development of the student. The Medical Adviser's Office is established for the general supervision of students needing medical attention. All cases of student illness should be promptly reported to the office whether or not professional service is desired.

Conditions affecting the general welfare of the University community are treated by the members of the staff, but students requiring special care—major surgery, treatment of the eye, ears, x-rays, and so forth, are referred to specialists.

A modern and completely equipped infirmary is maintained by the University for the care of students requiring medical and surgical treatment and for the isolation of those suffering from communicable diseases. Cases requiring special methods of study and treatment are cared for by the University medical staff in the Wisconsin General Hospital erected in gratitude by the people of the state.

HONORS IN THE COLLEGE OF AGRICULTURE

Honors and high honors are awarded at the end of the sophomore year and at graduation upon the number of grade points earned.

SOPHOMORE HONORS AND SOPHOMORE HIGH HONORS are awarded on the basis of a minimum of two full years of work acquired in residence. The student averages two and one-quarter grade points per credit to secure honors, and two and three-quarters grade points per credit to secure high honors. Adjustments are made when students carry more than the regular schedule.

In 1933 the following Long Course students were awarded Sophomore Honors:

High Honors—Stewart McNeil Johnson.

Honors—Milton Edward Bliss, Harold Rodney Dodge, Niemen Howell Hoveland, Russell Raymond Poyner, Arthur Martin Swanson, Owen Williams.

SENIOR HONORS AND SENIOR HIGH HONORS are awarded at the completion of at least two full years of work, acquired in residence, after the completion of sophomore work. They are awarded on the same basis as sophomore honors and sophomore high honors.

The following were granted at Commencement in June, 1933:

High Honors—Herbert Roderick Bird, George William Trimberger.

Honors—Orrin Irwin Berge, George John Burkhardt, Howard Philip Gutgesell, Thomas Edwin Hamilton, Vernon Clarence Hendrickson, Donald Rex Kindschi, Frank Vivian Lee, Everett Charles Saudek.

DEPARTMENTS OF INSTRUCTION

Abbreviations in the announcement of courses:

Yr.—course continues throughout the year

I—given during the first semester

II—given during the second semester

I and II—repeated each semester. If used with Yr.; means course may be begun first or second semester

cr.—credits, i.e., hours of credits. Unless otherwise stated, the number of credits per semester is given.

AGRICULTURAL BACTERIOLOGY

EDWIN GEORGE HASTINGS, M.S., *Professor of Agricultural Bacteriology, Chairman*

IRA LAWRENCE BALDWIN, Ph.D., *Professor of Agricultural Bacteriology*

EDWIN BROUN FRED, Ph.D., *Professor of Agricultural Bacteriology*

WILLIAM DODGE FROST, Ph.D., P.P.H., *Professor of Agricultural Bacteriology*

ELIZABETH MCCOY, Ph.D., *Assistant Professor of Agricultural Bacteriology*

WILLIAM BOWEN SARLES, Ph.D., *Assistant Professor of Agricultural Bacteriology*

PERRY WILLIAM WILSON, Ph.D., *Assistant Professor of Agricultural Bacteriology*

MILDRED A. ENGELBRECHT, M.S., *Instructor in Agricultural Bacteriology*

HARRY EDWIN SAGEN, Ph.D., *Instructor in Agricultural Bacteriology*

Students majoring in this department may take Medical Bacteriology 102 or 104 or Veterinary Science 126, and count five of these credits toward the major requirement.

1. GENERAL SURVEY OF BACTERIOLOGY. I; 4 cr. The relation of micro-organisms to soil fertility, to animal diseases, and to food. Prerequisite: Chemistry 1a. Required of all agricultural students. Lab. fee \$4.50. Mr. Baldwin, Mr. Sarles.
2. GENERAL SURVEY. II; 4 cr. The relation of micro-organisms to chemical transformations, especially as regards their relation to water, food, sewage disposal, and industrial processes. For chemistry course students. Prerequisite: Chemistry 1b. Lab. fee \$4.50. Mr. Wilson.
4. GENERAL SURVEY. II; 4 cr. Survey of bacteriology with special emphasis on the relation of micro-organisms to foods and domestic sanitation. One out-of-town class trip taken. Prerequisite: Chemistry 1a. Required of students in home economics. Lab. fee \$4.50. Mr. Frost, Miss Engelbrecht.
100. THESIS. Yr; 2 cr. A definite problem in dairy, soil, or household bacteriology or in animal diseases. Prerequisites: Agr. Bact. 1, 2, or 4, and consent of instructor. Lab. fee \$2.25 per lab. cr. Staff.
121. DAIRY BACTERIOLOGY. II; 3 cr. The bacteriology of milk production and distribution and of dairy manufacturing. Prerequisite: Agr. Bact. 1, 2, or 4, or Medical Bact. 102. Lab. fee \$4.50. Mr. Hastings, Mr. Sagen.

123. SOIL BACTERIOLOGY. I; 3 cr. The relation of micro-organisms to soil fertility. Prerequisite: Agr. Bact. 1, 2, or 4, or Medical Bact. 102. Lab. fee \$4.50. Mr. Fred.
125. FOOD BACTERIOLOGY. I; 3 cr. The microbiology of foods and of industrial fermentations. Prerequisite: Agr. Bact. 1, 2 or 4 or Medical Bacteriology 102. Lab. fee \$4.50. Miss McCoy.
126. PHYSIOLOGY OF BACTERIA. II; 3 cr. The chemistry and physics of bacterial processes. Prerequisite: Agr. Bact. 1, 2, or 4, or Medical Bact. 102. Lab. fee \$4.50. Mr. Baldwin.
130. DETERMINATIVE BACTERIOLOGY. Yr; 2-5 cr. Training in the common methods of the bacteriological laboratory. Prerequisite: Agr. Bact. 1, 2, or 4, or Medical Bact. 102. Lab. fee \$2.25 per lab. cr. Mr. Frost, Miss Engelbrecht.
200. RESEARCH. Yr; 2-5 cr. A detailed study of a definite problem in the field of agricultural bacteriology. Prerequisites: Agr. Bact. 121, 123, 124, 125, 126, or 130. Lab. fee \$2.25 per lab, cr. Staff.
231. SEMINARY. Yr; 1 cr. Discussion of the research work of the department and of current problems in the fields covered by the department. Staff.



STUDENTS ENJOY WATER SPORTS

AGRICULTURAL CHEMISTRY

EDWIN BRET HART, BS., *Professor of Agricultural Chemistry, Chairman*
KARL PAUL LINK, Ph.D., *Professor of Bio-Chemistry*
WILLIAM HAROLD PETERSON, Ph.D., *Professor of Agricultural Chemistry*
HARRY STEENBOCK, Ph.D., *Professor of Agricultural Chemistry*
CONRAD ARNOLD ELVEHJEM, Ph.D., *Associate Professor of Agricultural Chemistry*
WILLIAM EDWARD TOTTINGHAM, Ph.D., *Associate Professor of Agricultural Chemistry*
BLANCHE MARYE RIISING, M.S., *Instructor in Agricultural Chemistry*

The courses offered in this department are intended to give a broad view of biological 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 110 and 120 are for 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 and bacteriology are desired prerequisites. All other advanced courses in this department are open to undergraduates and graduates who have had the necessary preliminary training.

1. ELEMENTARY BIOCHEMISTRY. II; 3 or 5 cr. Introduction to the chemistry of living matter. Laboratory work includes chemical analysis of agricultural materials. Prerequisite: Chemistry 1b or concurrent registration. Lab. fee \$2.25 per lab. cr. Mr. Elvehjem.
3. FOOD BIOCHEMISTRY. I; 4 cr. Lectures and laboratory work on the chemistry and metabolism of the essential food constituents; carbohydrates, fats, proteins, etc. Required of all home economics students. Prerequisite: Chemistry 1b. Lab. fee \$4.50. Mr. Peterson.
100. THESIS. Yr; 2 cr. May be taken in plant, animal, fermentation, or dairy chemistry. Lab. fee \$2.25 per lab. cr. Staff.
110. PRINCIPLES OF BIOCHEMISTRY. I; 3 or 5 cr. The biochemistry of lipids, carbohydrates, proteins, inorganic elements, water, enzymes, and other constituents of the cell. Three lectures, 3 cr.; two laboratory periods, 2 cr. Prerequisite: Quantitative and Organic Chemistry. Laboratory fee \$4.50. Mr. Elvehjem. Mr. Hart, Mr. Link, Mr. Peterson, Mr. Steenbock, Mr. Tottingham.
120. PLANT BIOCHEMISTRY. II; 2 or 5 cr. The mechanism and course of chemical processes in the growth of plants, including the effect of environmental factors. Selected methods for the determination of plant constituents. Prerequisites: Chemistry 1b and 120. Lab. fee \$2.25 per lab. cr. Mr. Tottingham.
121. DAIRY CHEMISTRY. I, 2 or 5 cr. The chemistry of milk and its products, including the chemistry of fermentation and detection of adulterants. Prerequisites: Chemistry 1, 12, and 120. Lab. fee \$2.25 per lab. cr. Mr. Hart.
125. ANIMAL METABOLISM AND VITAMINS. II; 4 cr. Caloric relations; the chemistry of urine, blood, bone, and other tissues and vitamins, with feeding ex-

- periments on animals. Two lectures and two laboratory periods. Prerequisites: Agricultural chemistry 122 or its equivalent. Laboratory fee \$4.50. Mr. Steenbock.
126. MODERN VIEWS OF ANIMAL NUTRITION AND THEIR APPLICATION. II; 2 cr. A course of lectures and conferences on the newer knowledge of nutrition applied to man, poultry, dairy cattle, swine, etc. Prerequisite: Agr. Chem. 122, or its equivalent. Mr. Hart.
127. FERMENTATION BIOCHEMISTRY. II; 2 cr. Lectures on the chemical composition of microorganisms and the mechanism of fermentation processes. Prerequisite: Agr. Bac. 1 or 2 desirable, Organic Chemistry 120 required. Mr. Peterson.
128. CARBOHYDRATE CHEMISTRY. I; 2 cr. Lectures on the structural and biochemical relationship of the simple sugars and sugar derivatives. II; 1 cr. The chemistry and biochemistry of the polysaccharides Prerequisite: 1 year of Organic Chemistry or consent of instructor. Mr. Link.
200. RESEARCH. Yr. *cr. Carbohydrate and plant chemistry, Mr. Link. Plant nutrition and plant metabolism, Mr. Tottingham. Fermentation bio-chemistry, Mr. Peterson. Animal chemistry and animal nutrition, Mr. Hart, Mr. Steenbock, Mr. Elvehjem. Dairy chemistry, Mr. Hart. Lab. fee \$2.25 per lab. cr.
233. SEMINARY. Yr; 1 cr. Original articles of importance are studied in detail, to broaden and deepen the understanding and to act as a stimulus to further research. Mr. Hart and staff.



THE MEMORIAL UNION
A center of student activities and social life.

AGRICULTURAL ECONOMICS

- ASHER HOBSON, Ph.D., *Professor of Agricultural Economics, Chairman*
 CHRISTIAN LAURITHS CHRISTENSEN, B.S., *Professor of Agricultural Economics*
 BENJAMIN HORACE HIBBARD, Ph.D., *Professor of Agricultural Economics*
 ALDO LEOPOLD, M.F., *Professor of Game Management*
 PRESTON ESSEX MCNALL, Ph.D., *Professor of Agricultural Economics*
 GEORGE SIMON WEHRWEIN, Ph.D., *Professor of Agricultural Economics*
 HENRY HARRISON BAKKEN, M.A., *Associate Professor of Agricultural Economics*
 RUDOLPH KNUGAARD FROKER, M.A., *Associate Professor of Agricultural Economics*
 WALTER AUGUSTUS ROWLANDS, B.S., *Associate Professor and Extension Specialist in Land Economics*
 DON S. ANDERSON, B.S., *Assistant Professor of Agricultural Economics*
 ISAAC FULTS HALL, Ph.D., *Assistant Professor of Agricultural Economics*
 AUSTIN CLAIR HOFFMAN, M.S., *Assistant Professor of Agricultural Economics*
 WILLIAM PETER MORTENSON, Ph.D., *Assistant Professor of Agricultural Economics*
 MARVIN ARNOLD SCHAARS, Ph.D., *Assistant Professor of Agricultural Economics*
 DONALD RICHARDS MITCHELL, M.S., *Instructor in Agricultural Economics*
 CARL FREDERICK WEHRWEIN, Ph.D., *Instructor in Agricultural Economics*
 JOHN L. BERGSTRESSER, B.A., *Lecturer in Land Economics*
 MILES CHARLES RILEY, LL.B., *Lecturer in Agricultural Economics*

The courses in agricultural economics are intended to give the students a knowledge of the economic principles which relate to the production and marketing of farm products, and to the economic conditions of the agricultural classes. As such, it is a field of general interest to all concerned with farmers and their welfare.

There are two methods of taking agricultural economics. First, it may be taken as a joint major along with work in one or more other departments, economics being recognized as a phase of farming coordinate with many other lines of inquiry; second, agricultural economics may be taken as a full major by those who decide to make it a main line of study preparatory to teaching, research, or work of an economic character.

Students are advised to take Economics 1a and 1b, Agricultural Economics 1 and 8 in the Sophomore year; Agricultural Economics 14, 117, 128, 155 and 179 in the Junior year; and Agricultural Economics 10, 107, 126, 127, and 152 in the Senior year. This sequence gives the desired background for graduate work.

A curriculum in Agricultural Commerce gives a background in agricultural science as well as a training in economics and business practice.

1. PRINCIPLES OF AGRICULTURAL ECONOMICS. II; 3 cr. Application of economics to agriculture. Required of all agricultural students. Prerequisite: Economics 1a. Mr. Hibbard.
8. FARM RECORDS AND ACCOUNTS. I; 2 cr. Inventories, bookkeeping, and accounting principles as applied to farm operations. Mr. Mitchell.
10. FARM ORGANIZATION AND MANAGEMENT. II; 3 cr. Farm methods and practices as applied to business management on the farm. Prerequisite: Junior standing. Mr. Mitchell.

14. FARM BUSINESS AND LEGAL PRACTICE. II; 3 cr. Mr. Riley.
100. THESIS. Yr; 2 cr. Staff.
117. OUTLINES OF LAND ECONOMICS. I; 3 cr. Principles underlying land classification, characteristics of land, relation to population and policies. Prerequisite: Economics 1a. Mr. Wehrwein.
118. GAME MANAGEMENT. II; 1 cr. An orientation course for advanced biological students working in other fields, but wanting a general picture of the history, principles and techniques of game cropping. Not open to freshmen and sophomores. Mr. Leopold.
126. INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS. I; 3 cr. Review of theories of international trade and foreign exchange; history of foreign trade in agricultural products; analysis of agricultural imports and exports; agricultural price supporting measures; current international trade problems in their relation to American agriculture. Prerequisite: Economics 1a. Mr. Schaars.
127. COOPERATIVE MARKETING. II; 3 cr. An analysis of marketing organizations, methods and theory underlying cooperative and private enterprises. Current agricultural marketing problems together with a consideration of the economic, legal and social aspects of cooperative marketing. Governmental relations and selected phases of the cooperative movement will be considered. Prerequisite: a course in marketing or concurrent registration. Mr. Bakken.
128. MARKETING AGRICULTURAL PRODUCTS. I; 3 cr. Development of agricultural marketing, services, agencies, methods; emphasis on principles and practices; price factors; commodity exchanges; current marketing problems; governmental relations; marketing costs. Prerequisite: Economics 1a. Mr. Schaars.
129. COOPERATIVE MANAGEMENT PROBLEMS. II; 2 cr. A consideration of the business structure of cooperative associations engaged in commercial activities; problems involving membership relations, pooling, financing, internal control, directors' responsibilities, trade and sales practice, and administrative policies. Prerequisite: Agr. Economics 127 or consent of instructor. Mr. Hobson.
152. FARMER MOVEMENTS. I; 2 cr. History of the efforts of farmers to better their economic condition by forming general, even nation-wide, organizations designed to control markets and influence legislation in the interest of fairness. Prerequisite: Econ. 1a., concurrent registration, or consent of instructor. Mr. Hibbard.
155. PRICES OF AGRICULTURAL PRODUCTS. II; 3 cr. An analysis and interpretation of the factors affecting the prices of agricultural products, together with a study of price movements, trends, cycles and minor fluctuations. The interrelationship of price, demand and supply of various types of agricultural products. Attention given to the interpretation of materials contained in public and private outlook reports. Prerequisite: Agricultural Economics 1. Mr. Mortenson.
179. URBAN LAND ECONOMICS. II; 3 cr. Urbanization, location, and structure of cities, urban land utilization, home ownership and tenancy, housing and credit,

- zoning, city and regional planning. Prerequisite: Economics 1b. Mr. Bergstresser.
180. TOPICAL WORK. Yr; *cr. Staff.
192. RURAL-REGIONAL PLANNING. II; 2-3 cr. A seminary approach to the field of rural-regional planning. Analysis of actual case studies of land classification, land utilization, and rural ecology as these apply to the creation of rural development plans and zoning ordinances for any given region. The extra credit is based upon topical and drafting room work. Prerequisites: Graduate standing or seniors with consent of instructors. Mr. Wehrwein, Mr. Aust, Mr. Kolb.
200. RESEARCH. Yr; *cr. Cooperation and marketing, Mr. Bakken and Mr. Schaars. Farm surveys and financial accounts in their relation to farm management, Mr. McNall. Cost accounting and its relation to farm management, Mr. McNall. History of agricultural production, Mr. Hibbard. Farmer movements, taxation and farm credit, Mr. Hibbard. Land economics and land problems, Mr. Wehrwein. Agricultural prices and statistics, Mr. Mortenson. International agricultural relations, Mr. Hobson.
221. LAND INCOME. II; 3 cr. The characteristics of land as a factor of production, spatial element of land, economics of land utilization, theories of rent, principles of land valuation and taxation. Prerequisite: graduate standing. Mr. Wehrwein.
226. SEMINARY: LAND PROBLEMS. Yr; 2 cr. Land tenure and utilization in the principal countries studied in a two year cycle; the new countries including the United States (1934-35); the countries with a feudal heritage (1935-36). Prerequisite: Agricultural Economics 117, 229 or concurrent registration. Mr. Hibbard, Mr. Wehrwein.
228. SEMINARY: THEORY OF MARKETS AND MARKETING. II; 2 cr. A study of the historical development of markets from early continental fairs; the practices customs of auctions, clearing houses, exchanges, and boards of trade; the emergence of modern sales agencies operating under cooperative, private, and governmental initiative. Prerequisite: graduate standing. (Given in 1934-35 and in alternate years). Mr. Bakken.
229. ADVANCED AGRICULTURAL ECONOMICS. Yr; 2 cr. The field of agricultural economics with respects to its origin and the main issues around which the thinking of those interested in agriculture revolves. Prerequisite: graduate standing. Mr. Hibbard.
252. SEMINARY: INTERNATIONAL AGRICULTURAL RELATIONS. II; 2 cr. An examination of international agricultural organizations and institutions, and their activities, together with an analysis of national agricultural measures and their influences in the international sphere. Prerequisite: Graduate standing or consent of instructor. Mr. Hobson.
255. SEMINARY: PRICE ANALYSIS. II; 3 cr. The application of statistical and other methods involved in isolating and analyzing agricultural price problems. Stress will be placed on proper interpretations. Prerequisite: Economics 130 or equivalent. Mr. Mortenson.

AGRICULTURAL EDUCATION

JOHN AMBROSE JAMES, B.S., *Professor of Agricultural Education, Chairman*

THOMAS LYMAN BEWICK, M.S., *Professor of Agricultural Extension*

KIRK LESTER HATCH, B.S., *Professor of Agricultural Extension*

WARREN WILLIAM CLARK, M.S., *Associate Professor of Agricultural Extension*

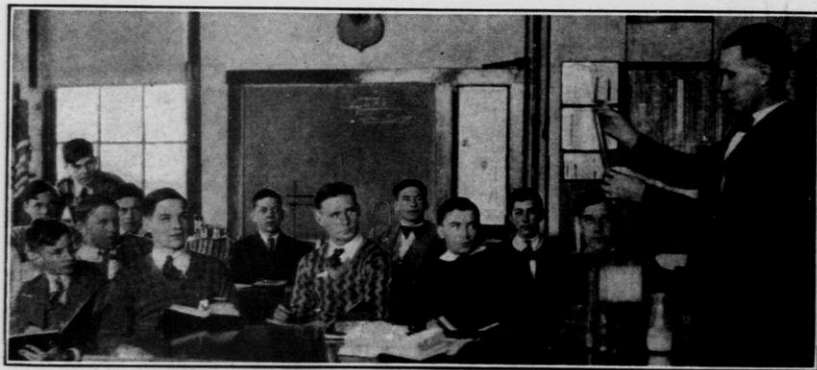
VINCENT EARL KIVLIN, M.S., *Associate Professor of Agricultural Education*

Students in the College of Agriculture who wish to prepare for the teaching of agriculture in secondary schools must complete a major and certain elective courses in animal husbandry, poultry, dairying, agronomy, horticulture, soils, agricultural engineering, agricultural economics, and agricultural journalism as a background of agriculture and also the fifteen credits in education required for the University Teachers' Certificate as outlined below. The major consists of a minimum of fifteen elective credits in any department in the College of Agriculture but preferably in Agricultural Education where twelve of the credits for the Teachers' Certificate are a portion of the major, thus allowing for greater choice of electives.

Students completing the requirements for graduation in Agriculture as suggested above and qualifying for a University Teachers' Certificate will receive the degree Bachelor of Science (Agriculture and Education) and a license to teach issued by the State Superintendent of Public Instruction. Such students must (a) register for the certificate in the School of Education at the beginning of the junior year, (b) receive the recommendation of the teacher training committee of the College of Agriculture, (c) complete the following courses:

| | Credits |
|---|---------|
| Educ. 31—Principles of Secondary education | 3 |
| Educ. 75—Psychology and practice of teaching | 5 |
| Agr. Educ. 1—Rural education | 2 |
| Agr. Educ. 128—Program building in vocational agriculture | 2 |
| Agr. Educ. 50—Teaching of agriculture | 3 |

Students beginning work for a certificate may arrange their courses most satisfactorily by starting the requirements during the second semester of the sophomore



A WISCONSIN "GRAD" TEACHING FARMERS OF THE FUTURE
Student in agricultural education do practice work with classes of high school age.

year or the first semester of the Junior year. Education 31 and 75 should definitely be completed before the beginning of the senior year. During the senior year the three courses in agricultural education are prescribed. This provides the best sequence and one which interferes least with technical subjects. Each senior spends a week in a high school vocational agricultural department each semester. Students should secure a list of the desirable technical agricultural elective courses from the chairman of the Department of Agricultural Education, and discuss with him the requirements for the certificate. Credit in Education 75 may be counted toward graduation only by those students who complete the requirements for the university teachers' certificate.

Graduates of the professional courses of the state teachers' colleges who are majoring in agriculture and who wish to qualify for the University Teachers' Certificate should elect 8 credits as follows:

| | Credits |
|--|---------|
| Education (advanced) | 3-4 |
| Agricultural Education (advanced; or 50) | 3 |
| Agricultural Education 128 | 2 |

Candidates may be excused from the departmental teachers' course with the approval of the chairman of the Department of Agricultural Education.

MAJOR. Not more than 5 credits in education taken in the School of Education may count on the major in agricultural education. These 5 credits shall in no way be counted as a partion of the 50 credits required in the strictly agricultural subjects.

1. **RURAL EDUCATION. II;** 2 cr. Origin and development of vocational education for rural communities. Problems, principles, and practices of rural education. For future leaders, farmers, and teachers. Open to sophomores. Mr. James.
5. **JUNIOR EXTENSION. I;** 2 cr. Place of boys' and girls' clubs in rural education. Educational values, methods of organization, leadership meetings, demonstrations, follow-up materials, exhibits and reports. For prospective extension workers and teachers. Lectures and demonstrations. Mr. Bewick.
25. **RURAL LIFE. (Rural Sociology 25). I;** 3 cr. Counts as part of agricultural education major. Mr. Kolb.
50. **TEACHING OF AGRICULTURE. I, II;** 3 cr. Directed teaching based upon participation in agricultural activities of the Wisconsin High School, problems of subject matter and methods of teaching. Open only to seniors registered for a teachers' certificate. Mr. Kivlin.
100. **THESIS. Yr;** 2 cr. Original work on problems of agricultural extension or teaching. Staff.
103. **SEMINARY. I, II;** *cr. Special problems in rural education and educational problems of county agent, demonstrator, extension workers, teachers, and rural leaders. Mr. James, Mr. Kivlin.

110. TRAINING COURSE FOR COUNTY AGENTS. II; 2 cr. Development and administration of the county agent system. The agent's responsibilities to the federal and state governments and the community. Projects, plans for work, and county organization; relation of college specialists and local organizations. Open only to seniors and graduate students. Given 1934-35 and alternate years. Mr. Clark.
128. PROGRAM BUILDING IN VOCATIONAL AGRICULTURE. I, II; 2 cr. Factors determining the program of work, directed practice, part-time and evening schools, etc., adapted to teaching agriculture in secondary schools. Prerequisites: Agr. Educ. 1 and senior standing. Mr. James.
- 142S. ADMINISTRATION AND SUPERVISION ON EXTENSION. Summer Session, 2 cr. Mr. Clark.
- 175S. ORGANIZATION AND PLANNING OF EXTENSION. Summer Session, 2 cr. Mr. Clark.
200. RESEARCH. Yr; *cr. Topical work relative to problems of elementary, vocational, or college agricultural education; extension, county agent, or demonstration work. Mr. James, Mr. Clark.



GOING TO THE MARSH

Practical work in drainage is done by students in the course, Agricultural Engineering I.

AGRICULTURAL ENGINEERING

EDWARD RICHARD JONES, M.S., *Professor of Agricultural Engineering, Chairman*

FLOYD WALDO DUFFEE, B.S., *Professor of Agricultural Engineering*

OTTO REINHART ZEASMAN, B.S., *Associate Professor of Soils and Agricultural Engineering*

FRED BENJAMIN TRENK, M.S., *Instructor in Forestry*

HJALMER DIEHL BRUHN, B.S.A., B.S.M.E., *Instructor in Agricultural Engineering*

STANLEY ARTHUR WITZEL, C.E., *Instructor in Agricultural Engineering*

The undergraduate courses in this department are service courses for students majoring in other departments, as well as the basis for advanced work of majors in agricultural engineering, both the non-technical and the technical.

The laboratories are well-equipped with farm machinery, engines and tractors for the study of general mechanical principles. Some of the laboratory work is given in the fields of the University farms. The University Marsh of 100 acres of tile-drained land is an excellent drainage laboratory.

Students inclined toward engineering and desiring to return to their farms or to take positions as agricultural agents or farm managers or to enter the farm equipment business, are advised to major in non-technical engineering, which has no special requirement in mathematics. They are advised to take, in addition to their major studies liberal electives in soils, agronomy, agricultural economics, and business methods. A major in non-technical agricultural engineering may be combined with a University Teachers' Certificate giving the legal qualifications to teach in the high schools.

Those desiring to enter the more technical fields of mechanical, electrical, civil, or structural engineering as applied to agriculture, are referred to page 11.

Throughout the year the majors in both technical and non-technical agricultural engineering function as a student branch of the American Society of Agricultural Engineers, and during the first semester of either the junior or senior years they take Agricultural Engineering 121.

1. SURVEYS AND STRUCTURES. II; 4 cr. Surveys, plans and specifications for buildings, drainage, sewage disposal and erosion control structures. Leveling, chaining, sub-division of land, plane table mapping, planning fields and farmsteads. general design of farm buildings and concrete construction. Three lectures and one field or drafting period. Optional subject for all agricultural sophomores. Lab. fee \$2.25. Mr. Jones.
5. POWER AND MACHINERY. I; 5 cr. Construction, operation, care, adjustment of gasoline engines, farm field machinery, light plants and water systems. Power transmission. Selection and management of machinery. Optional subject for all agricultural sophomores. Three lectures and two laboratory periods per week. Lab. fee \$4.50. Mr. Duffee.
100. THESIS. Yr; 2 cr Lab. fee \$2.25 per lab. cr. Staff.
101. DRAINAGE DESIGN. I; 2 cr. Preliminary and final surveys and designs for farm and community drainage systems near Madison and other convenient places.

- Optional work is provided for those specializing in erosion control or irrigation. Field work and conferences by appointment. Prerequisite: Agr. Engr. 1 or Top. Engr. 1 and 2. Mr. Jones.
103. FARM TRACTORS. II; 3 cr. Laboratory tests of gas engines and field practice with farm tractors. Prerequisite: Agr. Engr. 3. Lab. fee \$4.50. Mr. Duffee.
105. BELT AND TRACTOR MACHINERY. II; 2 cr. Threshers, silo fillers, and other belt-driven farm machines, large and small; tractor plow; machinery calibration tests. Lectures, laboratory studies, and field demonstrations. Prerequisites: Agr. Engr. 5 and 103 or concurrent registration. Offered 1933-34 and in alternate years. Lab. fee \$2.25. Mr. Duffee.
121. SEMINARY. I; 1 cr. Review of current literature and studies of agricultural engineering problems. For juniors, seniors and graduate students. Mr. Jones and staff.
180. SPECIAL PROBLEMS. I and II; *cr. Open to technical majors who have had prerequisite training for advanced work in farm machinery, farm power, farm structures, land clearing, drainage or forestry. Lab. fee \$2.25 per lab. cr. Staff.
200. RESEARCH. Yr.; *cr. Agricultural Engineering problems for students qualifying for advanced degrees. Lab. fee \$2.25 per lab. cr. Mr. Jones, Mr. Duffee, Mr. Witzel.

ELECTIVES IN THE COLLEGE OF ENGINEERING

- SHOP 2. BENCH WORK, FORGE, AND WELDING. I, II; 1 cr. Forge and bench work in iron and steel. The processes involved in forging, welding, and brazing of iron and steel. The use of the chisel, file, and drill in finishing and fitting. Lab. fee \$3.00. Mr. Schumann, Mr. Peters.
- SHOP 15. GENERAL FARM CARPENTRY. I, II; 1 or 2 cr. The use and care of tools and principles involved in the construction of such structures as concrete forms and farm buildings; framing of doors and windows, and interior finishing. Lab. fee \$3.00. Mr. Cluley.

ELECTIVES GIVEN BY FOREST PRODUCTS STAFF

1. GENERAL FORESTRY. I; 2 cr. An outdoor study of trees and their identification. Lectures on the natural forest conditions and the development of forest policy in the United States and elsewhere. No Prerequisite. Mr. Tiemann.
102. WOOD TECHNOLOGY. II; 2 cr. Open to all students. Microscopic structure of wood, and its formation by the living tree. Distinction between species. Its properties, uses and products. No prerequisite. Mr. Tiemann.

AGRICULTURAL JOURNALISM

ANDREW WINKLE HOPKINS, B.L., *Professor of Agricultural Journalism, Chairman*
WILLIAM ALLISON SUMNER, Ph.M., *Associate Professor of Agricultural Journalism*
KENNETH GAPEN, M.S., *Assistant in Agricultural Journalism*

Agriculture must be made more articulate. To render the greatest service the technically trained worker must use the printed page. The ability to write simply and understandably is invaluable to the teacher, the extension worker, and the farmer.

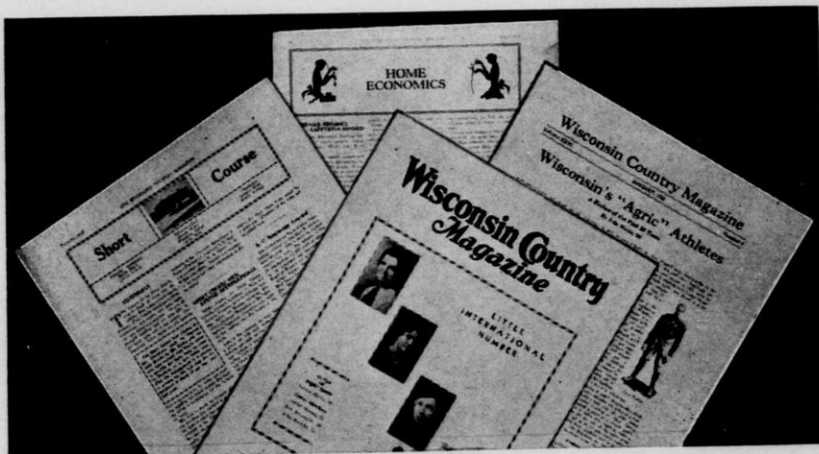
Selling and advertising are important in the neglected half of farming—the business side. More and more farmers are coming to appreciate the need for salesmanship, sales letter writing, effective classified and display advertisement, and systematic sales campaigns.

For students returning to the farm, Agricultural Journalism 1 and 3 are suggested. For prospective teachers and extension workers, course 1, 3 and 103 are recommended. For research workers and future college staff workers Agricultural Journalism 1 and 103 are advised.

Majors in the department will be expected to take Agricultural Journalism 1, 2, 3, 100, 103, 111 and 150. Courses in the Department of Journalism in the College of Letters and Science should be taken in addition and not to exceed 5 credits from the following courses may count on the major: Journalism 2, Newspaper reporting and correspondence; Journalism 3, Copy reading; and Journalism 7, Community newspaper.

Home Economics students majoring in the department will be expected to take Agricultural Journalism 8, 103, 106, 111, and 150. Courses 2, newspaper reporting; 3, copy reading; and 123, women's departments in newspapers and magazines, in the School of Journalism should be taken and count toward the major.

A special curriculum for home economics journalism is presented in the home economics circular.



"THE COUNTRY MAGAZINE"
This student publication offers practical training.

1. **WRITING FARM NEWS. I;** 3 cr. An elementary course to help students who expect to write farm news articles for publication in the weekly or daily papers or the various farm papers. Mr. Sumner.
2. **PRACTICE IN EDITING. I, II;** 1 cr. The editorial, business, and circulation problems of the Wisconsin Country Magazine are analyzed and actual practice given on the magazine. Mr. Sumner.
3. **AGRICULTURAL ADVERTISING. II;** 3 cr. How to write "want ads," advertisements to sell livestock, dairy products, fruit, berries, truck, food products; how to write the business letters of the farmer; the preparation of booklets, posters, sales bills, and other mediums. Lectures and assignments for practice. Mr. Sumner.
8. **WRITING HOME ECONOMICS NEWS. I;** 3 cr. A course in the fundamentals of writing home economics material. Designed to aid teachers and extension workers in publicity and to give training to students who plan to major in home economics journalism. Mr. Sumner.
100. **THESIS. Yr;** 2 cr. Original studies of a journalistic or advertising nature. Practical problems are investigated. Mr. Hopkins, Mr. Sumner.
103. **AGRICULTURAL PUBLICITY METHODS. II;** 2 cr. Outlining and finding effective methods of publicity. This course takes up the publicity campaign, the different mediums as to their advantage and uses, publicity copy, exhibits, and charts. Prerequisite: Agr. Journ. 1 or 8. Mr. Hopkins.
111. **WRITING FARM AND HOME FEATURES. II;** 2 cr. A course to follow the elementary courses in writing farm and home stories. The technique of writing the longer feature stories for the farm papers and women's magazines is given primary consideration. Prerequisite: Agr. Journ. 1 or 8. Mr. Sumner.
150. **SEMINARY I, II;** 2 cr. Mr. Sumner.
180. **METHODS AND PROBLEMS. I;** *cr. Mr. Hopkins, Mr. Gapen.
200. **RESEARCH. II;** *cr. A practice problem such as confronts the county agent, scientist, publicity man, extension worker, or editor is analyzed and an effort made for a constructive solution. Advertising problems and policies such as confront the breeder or seed grower may be studied. Prerequisite: Agr. Journ. 1, 3, or 8. Mr. Hopkins, Mr. Sumner.

AGRONOMY

RANSOM ASA MOORE, M.A., *Professor of Agronomy, Chairman*
EDMOND JOSEPH DELWICHE, M.S., *Professor of Agronomy*
LAURENCE FREDERICK GRABER, Ph.D., *Professor of Agronomy*
BENJAMIN DONALD LEITH, B.S., *Professor of Agronomy*
GEORGE BYRON MORTIMER, B.S., *Professor of Agronomy*
ANDREW HAMILTON WRIGHT, M.S., *Professor of Agronomy*
GEORGE MCSPADDEN BRIGGS, B.S., *Associate Professor of Agronomy*
ALDEN LESCOMBE STONE, *Associate Professor of Agronomy*
EUGENE DAVENPORT HOLDEN, M.S., *Assistant Professor of Agronomy*
RUEBUSH GEORGE SHANDS, Ph.D., *Assistant Professor of Agronomy*

Not to exceed five credits from the following courses may be counted as a portion of the major requirement in Agronomy; Soils 120, Soil management; Soils 127, Soil science and plant nutrition; Plant Pathology 101, Diseases of Plants; Plant Pathology 116, Diseases of field crops; Botany 117, Structure of economic plants; and Botany 129, Classification of cultivated plants.

1. PRINCIPLES AND PRACTICES IN CROP PRODUCTION. I, II; 3 cr. Includes a study of farm crop seeds, growth requirements, crop varieties and types, botanical relations, adaptations, cultural practices, crop improvement and studies of individual crops. Required of all agricultural students. Lab. fee \$4.50. Mr. Mortimer.
100. THESIS. Yr; 2 cr. Lab. fee 2.25 per lab. cr. Staff.
102. PASTURES AND PASTURE PROBLEMS. I; 2 cr. Pasture studies based on kinds; best methods of establishing, maintaining and improving them; and the crops best suited to this use. Prerequisite: Agronomy 1. Mr. Mortimer.



THE NEW AGRONOMY BUILDING

103. CROP IDENTIFICATION AND STANDARDS. I; 2 cr. A consideration of the classification, identification and standard of excellence of field, orchard and garden crops. Laboratory exercises in identification, judging and exhibiting crops. Lab. fee \$2.25. Mr. Holden, Mr. J. G. Moore.
104. GRAIN CROPS. I; 2 cr. Small grain and corn varieties, types and botanical relationships, geographical distribution, quality as affected by environment, uses and culture. A one day trip to Milwaukee to visit the grain and stock exchange and cereal industries. Given 1935-36 and alternate years. Lab. fee \$2.25. Mr. Leith.
106. FORAGE CROPS. II; 3 cr. Growing and handling forage crops, with emphasis on recent developments in relation to livestock farming. Prerequisite: Agronomy 1. Mr. Moore, Mr. Graber.
107. FORAGE PROBLEMS. II; 2 cr. Physiological, anatomical, and morphological aspects of forage plants in relation to field practices, with emphasis on food reserves, winter injury and other agronomic problems. For seniors and graduate students. Lab. fee \$4.50. Mr. Graber.
120. SEED AND WEED CONTROL. I; 3 cr. A study of the economic relations of farm seeds and weeds to profitable agriculture. Prerequisite: Agronomy 1. Lab fee \$4.50. Mr. Stone.
130. CROP IMPROVEMENT. II; 3 cr. Methods and principles involved in the improvement of crops. Prerequisites: Agronomy 1 and Botany 1. Offered 1934-35 and alternate years. Mr. Leith.
131. SEMINARY. Yr; 1 cr. A review of current literature and studies of agronomic problems. For seniors and graduate students. Prerequisites: Agronomy 1 and Botany 1. Staff.
180. SPECIAL CROP PROBLEMS. Yr; *cr. Offered at Madison and the branch experiment stations. Lab. fee \$2.25 per lab. cr. Staff.
200. RESEARCH. Yr; *cr. Agronomic problems for students qualifying for advanced degrees. Given in connection with thesis or graduate study. Lab. fee \$2.25 per lab. cr Staff.

ANIMAL HUSBANDRY

GEORGE COLVIN HUMPHREY, B.S., *Professor of Animal Husbandry, Chairman*
GUSTAV BOHSTEDT, Ph.D., *Professor of Animal Husbandry*
JAMES GARFIELD FULLER, M.S., *Professor of Animal Husbandry*
ARLIE MAX MUCKS, B.S., *Associate Professor of Animal Husbandry*
JOHN MERRILL FARGO, M.S., *Assistant Professor of Animal Husbandry*
JAMES JEROME LACEY, B.S., *Assistant Professor of Animal Husbandry*
BENJAMIN HAMILTON ROCHE, M.S., *Assistant Professor of Animal Husbandry*
ISAAC WALKER RUPEL, Ph.D., *Assistant Professor of Animal Husbandry*
ALBERT JULIUS CRAMER, B.S., *Instructor in Animal Husbandry*
ROY THEODORE HARRIS, *Instructor in Animal Husbandry*
WILLIAM MALCOLM BEESON, B.S., *Assistant in Animal Husbandry*

Two majors are offered students in animal husbandry. The practical major is intended primarily for students who intend to return to the farm as farm managers or herdsmen, or who intend to qualify as vocational agricultural teachers or county agricultural agents. Students taking this major should elect Agricultural Chemistry 1 and 2 and Physiology 3, Animal physiology, in their sophomore year. In the junior and senior years they should elect animal husbandry courses in feeding, judging, breeding and production. Students who wish to qualify for a teacher's certificate should elect teachers' courses not later than the beginning of the junior year. Agricultural Journalism 3, Advertising; Agricultural Economics 10, Farm Organization and Management; Dairy Husbandry 5, City milk supply; and Agricultural Bacteriology 121, Dairy bacteriology; and practical courses in other departments are suggested.

The animal science major is planned for men desiring to go into college or experiment station work and is suggested for those intending to do extension work. For training in this field students should elect Chemistry 11, Veterinary Science 1, and Dairy Industry 1 in the sophomore year. Organic chemistry should be taken in the junior year in addition to courses suggested in the practical major. In the senior year desirable electives, in addition to some production courses, are Agr. Chem. 121,



A CLASS IN ANIMAL HUSBANDRY

Dairy Chemistry; Agr. Chem. 125, Animal Metabolism & Vitamins; and Genetics 101, 102 and 105.

Not to exceed five credits from the following courses may be counted as a portion of the major requirement in animal husbandry: Agr. Chem. 121, Genetics 101 and 102, Veterinary Science 2 and 3.

1. LIVESTOCK PRODUCTION. I, II; 3 cr. Livestock survey, breed history, judging, market classification; practical problems, lectures, and laboratory exercises. Required of all agricultural students. Lab. fee \$4.50. Mr. Fuller.
2. LIVESTOCK MANAGEMENT. II; 3 cr. A study of fundamental principles of practice underlying the successful management of useful farm animals. Lectures and laboratory demonstrations. Prerequisite: An. Husb. 1 or consent of instructor. Lab. fee \$2.25. Mr. Fuller and staff.
3. TYPES AND BREEDS OF LIVESTOCK II; 2 cr. An advanced study of types and breeds; standards of excellence for market, showyard and breeding animals, respectively; judging and selection Prerequisite: An. Husb. 1 Lab. fee \$2.25. Mr. Fargo, Mr. Rupel.
100. THESIS. Yr; 2 cr. Lab. fee \$2.25 per cr. Mr. Humphrey and staff.
126. LIVESTOCK FEEDING. I; 4 cr. A study of the principles of feeding and the composition of feeds; practice in formulating rations for the various classes of livestock; evaluation of feeds and feeding practices from a study of experiments and customs Prerequisite: An. Husb. 1. Mr. Bohstedt, Mr. Rupel.
130. SWINE AND SHEEP PRODUCTION. I; 3 cr. History of the hog and sheep industries and of the leading herds and flocks in America; systems and costs of production; methods of marketing; the breeding of high class purebred foundation stock. Prerequisite: An. Husb. 1. Lab fee \$2.25. Mr. Fargo.
131. HORSE AND BEEF CATTLE PRODUCTION I; 3 cr. Developments and present status of the horse and beef cattle industries; leading stud and herd owners in America; practices in breeding, production and marketing; fundamentals in the successful use of horses. Prerequisite: An. Husb. 1. Lab. fee \$2.25. Mr. Fuller.
133. DAIRY CATTLE AND MILK PRODUCTION. II; 3 cr. Selection of animals for milk production and for breeding purposes. Present day types and breed characteristics. Herd management, advanced registry testing, calf raising, selling of surplus breeding stock. Control measures relating to quality in commercial and special grades of milk. A one day tour to visit leading pure-bred herds, dairy equipment plants, and farms producing certified milk is conducted; the cost is from \$4 to \$5. Prerequisite: An. Husb. 1. Lab. fee \$4.50. Mr. Rupel.
135. SEMINARY. I, II. Yr; 1 cr. Studies and discussions of research work in animal husbandry and related fields; reports on articles of interest. For advanced and graduate students. Mr. Bohstedt.
180. SPECIAL PROBLEMS. Yr; *cr. Special problems on feeding, management, or breeding of livestock, including laboratory, library, or field work with conferences and reports. These problems will be assigned by respective members of the staff. Consent of instructor required. Staff.
200. RESEARCH. Yr; *cr. A detailed study of a definite research problem in animal husbandry. Conference on experimental methods. Mr. Bohstedt and staff.

DAIRY INDUSTRY

HOWARD CAMPBELL JACKSON, Ph.D., *Professor of Dairy Industry, Chairman*
WALTER VAN PRICE, Ph.D., *Professor of Dairy Industry*
HUGO HENRY SOMMER, Ph.D., *Professor of Dairy Industry*
JOHN LANGLEY SAMMIS, Ph.D., *Associate Professor of Dairy Industry*
LOUIS CHARLES THOMSEN, B.S., *Assistant Professor of Dairy Industry*
CHARLES ALFRED BUCK, B.S., *Instructor in Dairy Industry*
HANS TJELLESEN SONDERGAARD, *Instructor in Dairy Industry*

The department offers instruction in the science 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, city milk, ice cream plants, and condenseries.

Students majoring in dairy manufacturing should elect Physics 61, 5 cr., Chemistry 20 or 120, 5 cr., Agricultural Chemistry 1 and 2, 5 cr., and Dairy Industry 1, 3 cr., in the sophomore year. Agr. Chem. 121, Dairy chemistry, 5 cr., and Agr. Bact. 121, Dairy bacteriology, 3 cr., should be taken in the junior year; and Dairy Industry 103, 105 and 108, 3 cr. each, Dairy Industry 104, 4 cr. and Dairy Industry 123, 2 cr. should be taken in the senior year as a minimum.

Dairy Industry is intimately connected with the Departments of Animal Husbandry, Agricultural Bacteriology, and Agricultural Chemistry, and with marketing given in the Department of Agricultural Economics. Students preparing for dairy manufacturing should consider courses in these departments when selecting electives related to the major.

1. INTRODUCTION TO DAIRYING. II; 3 cr. A general survey course designed to give the student an understanding of the relationship of dairy manufacturing to general farm problems. Emphasis is given to methods of quality control, judging, and elementary analysis of dairy products. Lab. fee \$4.50. Mr. Jackson, Mr. Thomsen.
100. THESIS. Yr; 2 cr. Lab. fee \$2.25 per lab. cr. Staff.
103. CREAMERY OPERATION AND MANAGEMENT. I; 3 cr. The theory and practice of cream separation, the pasteurization and handling of dairy products under commercial conditions, composition and flavor control of butter, and the management and operation of creameries. Lab. fee \$4.50. Mr. Jackson, Mr. Thomsen.
104. CHEESE FACTORY OPERATION AND MANAGEMENT. II; 4 cr. A combined lecture and laboratory course to study the manufacture of cheese. Several types of cheese are made by the students in the laboratory to acquaint them with commercial practices and to illustrate the importance of certain physical, chemical, and biological factors which influence curd-making and cheese-ripening. Lab. fee \$4.50. Mr. Price.
105. MARKET MILK. I; 3 cr. The production and commercial handling, processing, and distribution of market milk and related products. Quality factors and de-

- fects in these products. Milk ordinances and board of health regulations. Lab. fee \$4.50. Mr. Sommer.
106. ICE CREAM AND CONDENSED MILK PRODUCTS II; 3 cr. The theory and practice of ice cream making. The manufacture of milk powder, malted milk, condensed milk, and evaporated milk. Quality factors and defects in these products. Offered in 1934-35 and in alternate years. Lab. fee \$4.50. Mr. Sommer.
108. DAIRY MECHANICS. II; 3 cr. Dairy plant construction, heating, ventilation, sewage disposal, refrigeration, installation, testing, and operation of dairy machinery. A two day field trip to well known dairy plant is usually included in the course. Lab. fee \$2.25. Mr. Thomsen.
123. SEMINARY. Yr; 1 cr. For advanced and graduate students. Mr. Sommer and staff.
124. PHYSICAL CHEMISTRY OF DAIRY PRODUCTS. II; 3 cr. Physical chemistry of dairy products, laboratory exercises on hydrogen ion concentration, oxidation-reduction potentials, surface tension, absorption, viscosity and plasticity, isoelectric point of proteins, colloidal properties of milk constituents. Offered 1933-34 and in alternate years. Lab. fee \$4.50. Mr. Sommer.
180. ADVANCED DAIRY MANUFACTURING PROBLEMS. Yr; 1-3 cr. Problems relating to dairy manufacturing. Open to seniors or by special permission. Lab. fee \$2.25 per lab. cr. Staff.
200. RESEARCH. Yr; *cr. Experimental study of problems in dairy manufacturing. Lab. fee \$2.25 per lab. cr. Staff.

ECONOMIC ENTOMOLOGY

HARLEY FROST WILSON, M.S., *Professor of Economic Entomology, Chairman*
 CHARLES LEWIS FLUKE, JR., Ph.D., *Associate Professor of Economic Entomology*
 EDWARD MARLBOROUGH SEARLS, M.S., *Assistant Professor of Economic Entomology*
 ERWIN CARL ALFONSUS, M.S., *Instructor in Economic Entomology*
 THOMAS CORT ALLEN, Ph.D., *Instructor in Economic Entomology*

Those interested in the opportunities for graduate work in entomology and beekeeping should write to the Department of Economic Entomology for a special circular of information.

1. FARM INSECTS. II; 3 cr. A study of the insect groups, especially those in relation to the farm and home. Each student makes a collection of at least one hundred specimens, which he classifies. Optional subject for all agricultural students. Lab. fee \$4.50. Mr. Fluke.
10. ELEMENTARY BEEKEEPING. I; 3 cr. Elementary principles of beekeeping with lectures and practical laboratory work. A general survey of the subject is taken up, with the fall and winter care in the apiary being stressed. Lab. fee \$2.25. Mr. Alfonsus.
100. THESIS. Yr; 2 cr Lab. fee \$2.25 per lab. cr. Mr. Wilson and staff.
102. INSECT MORPHOLOGY AND TAXONOMY I; 3 cr. A detailed study of the external morphology of insects and a determinative survey of the important Orders, Families, and Genera. Discussion and laboratory. Lab. fee \$4.50. Mr. Fluke.
103. ORCHARD INSECTS. II; 2 cr. A laboratory study of the life histories and controls of the principal insect pests of the orchard and bush fruits. Prerequisite: Economic Entomology 1 or 102, or a course in Zoology. Offered 1934-35 and in alternate years. Lab. fee \$2.25. Mr. Fluke.
105. FIELD CROP AND GARDEN INSECTS. II; 2 cr. A laboratory study of the principal insect pests of field, garden, and truck crops; their life histories and controls. Prerequisite: Economic Entomology 1 or 102, or a course in Zoology. Offered 1933-34 and in alternate years. Lab. fee \$2.25. Mr. Searls.
120. INSECT ECOLOGY. II; 3 cr. Insects in relation to their environment. A survey and study of insect communities and successions with special reference to the insects of Wisconsin. Lectures, laboratory, and frequent field trips. Prerequisite: Econ. Ent. 102. Offered 1934-35 and in alternate years. Lab. fee \$2.25. Mr. Alfonsus.
123. TAXONOMY OF INSECT LARVAE. I; 3 cr. A study of the identification and morphology of immature insects. Lecture and laboratory. Prerequisites: Economic Entomology 102 or consent of instructor. Offered 1933-34 and in alternate years. Lab. fee \$4.50. Mr. Searls.
125. INSECTS IN RELATION TO PLANT DISEASES. I; 2 cr. A study of the principal insect carriers and their habits; types of insect injuries affecting health of plants; modes of insect transmission and dissemination of plant diseases; and the methods of rearing and handling the carriers. Arranged to meet the needs of students in entomology, plant pathology, horticulture, and agronomy. Prerequisite: A course in entomology and plant pathology or consent of instructor. Offered 1934-35 and in alternate years. Lab. fee \$2.25. Mr. Searls.
130. SEMINARY. I, II; 1 cr. For advanced and graduate students. Mr. Wilson.
180. TOPICAL WORK. I, II; *cr. Senior standing. Lab. fee \$2.25 per lab. cr. Staff.
200. RESEARCH. Yr; *cr. Lab. fee \$2.25 per lab. cr. Mr. Wilson and staff.

GENETICS

LEON JACOB COLE, Ph.D., *Professor of Genetics, Chairman*

ROYAL ALEXANDER BRINK, D.Sc., *Professor of Genetics.*

MALCOLM ROBERT IRWIN, Ph.D., *Assistant Professor of Agricultural Bacteriology and Genetics*

DELMER CLAIRE COOPER, Ph.D., *Research Associate in Genetics*

The following courses are designed for those 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.

100. THESIS. Yr; 2 cr. Lab. fee \$2.25 per lab. cr. Mr. Cole, Mr. Brink.
101. PRINCIPLES OF BREEDING. I; 3 cr. Elementary principles of heredity in their application to plant and animal breeding. Additional prescribed reading and written reports for graduate credit. Prerequisite: A course in biology. Mr. Cole.
102. ELEMENTARY LABORATORY. I; 1-2 cr. Breeding experiments illustrating the principles of heredity. Prerequisite: Genetics 101 or concurrent registration. Lab. fee \$2.25 per lab. cr. Mr. Brink and staff.
104. PLANT GENETICS. II; 3 cr. Variation and inheritance in plants, including genetics of sterility and disease resistance, and principles of plant improvement. Prerequisite: Genetics 101 or equivalent in zoology or botany. Mr. Brink.
105. ANIMAL GENETICS. II; 3 cr. Inheritance of economic characters in domesticated animals; study of animal breeding methods; evaluation and analysis of pedigrees; application of genetics to the problems of livestock production. Prerequisite: Same as for Genetics 104. Mr. Cole.
106. BIOMETRIC METHODS. I; 2 cr. Lectures and laboratory work in calculation of statistical measures of variability and correlation and their practical application. Determination and usage of probable errors of such measures and for Mendelian data. Prerequisite: Same as for Genetics 104 or graduate standing. Lab. fee \$2.25. Mr. Brink.
120. SEMINARY. Yr; 1 cr. Consent of instructor required before election. Mr. Cole.
180. TOPICAL WORK. Yr; *cr. Either (a) assigned topics in laboratory or field work with reading, conference, and report, or (b) practice work, including practical experience in the various lines of research carried on in the department; problems, technique, and methods of record keeping. For those not prepared to elect Course 200. May be taken in connection with, or subsequent to, Genetics 101; consent of instructor required. Lab. fee \$2.25 per lab. cr. Mr. Cole, Mr. Brink.
200. RESEARCH. Yr; *cr. For students qualified by preliminary training. Work may be based on the analysis of available data, or upon new data acquired by experiment. The summer season offers exceptional opportunity for breeding work with both animals and plants. Opportunity is offered to a limited number of properly qualified students for research under direction during the summer. Such work may extend through the whole season and is applicable toward advanced degrees. Lab. fee \$2.25 per lab. cr. Mr. Cole, Mr. Brink.

HORTICULTURE

JAMES GARFIELD MOORE, M.S.,* *Professor of Horticulture, Chairman*
 JAMES JOHNSON, Ph.D., *Professor of Horticulture*
 JAMES GARFIELD MILWARD, M.S., *Professor of Horticulture*
 RAY HARLAND ROBERTS, Ph.D., *Professor of Horticulture*
 FRANZ AUGUST AUST, M.S., M.L.D., *Associate Professor of Horticulture*
 JOHN WILLIAM BRANN, M.S., *Assistant Professor of Horticulture and Plant Pathology*
 CONRAD LOUIS KUEHNER, B.S., *Assistant Professor of Horticulture*
 GEORGE WILLIAM LONGENECKER, B.S., *Assistant Professor of Horticulture*
 ISME HOGGAN, Ph.D., *Instructor in Horticulture*
 NORMAN ARTHUR MORRIS, B.S., *Instructor in Horticulture*
 WILLIAM BUTLER OGDEN, B.S., *Instructor in Horticulture*

The courses offered in horticulture permit the student to specialize in fruit growing, landscape design, or vegetable production.

Majors in horticulture may count a maximum of five credits towards the major requirement by electing Economic Entomology 103 or 105 and Plant Pathology 5 or 101. Landscape majors may substitute Art Education 50 for Animal Husbandry 1 and Topographical Engineering 107 for Mathematics 71 in the freshman year. Such students are also referred to courses in city planning offered by the College of Engineering.

1. PRINCIPLES OF FRUIT GROWING. I; 3 cr. The principles of fruit growing and their application to our common tree fruits. Optional subject for all agricultural students. Lab. fee \$2.25. Mr. Moore.
3. VEGETABLE GARDENING. II; 3 cr. The growing of vegetables out-of-doors. Practical work in the gardens. Optional subject for all agricultural students. Lab. fee \$4.50. Mr. Moore.
5. SMALL FRUIT CULTURE. I; 2 cr. Culture of cane, bush and other small fruits. Offered in 1934-35 and alternate years. Mr. Moore.
6. PRINCIPLES OF LANDSCAPE DESIGN. I; 3 cr. Discussion of the principles of landscape art. Field and laboratory work in the study of landscape plants and the making of planting plans. A trip will be taken to a nursery for the purpose of studying plant materials and nursery practice. Lab. fee \$2.25. Mr. Aust, Mr. Longenecker.
7. PLANT PROPOGATION. II; 2 cr. Principles and practices involved in propagating horticultural plants. Lectures and laboratory. Lab. fee \$2.25. Mr. Moore.
8. HOME HORTICULTURE. II; 3 cr. A consideration of the growing and use of plants and flowers for home beautification and the production of vegetables and small fruits for home use. Designed primarily for women. Offered in 1933-34 and alternate years. Laboratory fee \$2.25. Mr. Moore and staff.
12. ELEMENTARY HOME GROUNDS DESIGN. II; 3 cr. A continuation of Horticulture 6 dealing specifically with the problems of grounds beautification. Prerequisite: Hort. 6 or consent of instructor. Lab. fee \$2.25. Mr. Aust, Mr. Longenecker.

13. LAWNS. I; 2 cr. A study of ground forms, terracing, grading, and estimating; assigned problems. Prerequisite: consent of instructor. Offered in 1934-35 and alternate years. Lab. fee \$2.25. Mr. Longenecker.
14. LANDSCAPE CONSTRUCTION PROBLEMS. Yr; 3 cr. I, Design and construction of walls, steps, ramps, drives, and walks. II, Design and construction of garden features such as pools, bird baths, arbors, and seats. Prerequisite: Hort. 6. Offered in 1933-34 and alternate years. Lab. fee \$4.50 per semester. Mr. Aust, Mr. Longenecker.
100. THESIS. Yr; 2 or more credits. Research work on horticultural subjects. Fees depend upon character of thesis work. Lab. fee \$2.25 per lab. credit. Mr. Aust, Mr. Johnson, Mr. Moore, Mr. Roberts.
101. ADVANCED HOME GROUNDS DESIGN. I; 3 cr. Design of estates, country home grounds, and related problems. Prerequisite: Hort. 6 and 12, or consent of instructor. Lab. fee \$4.50. Offered in 1933-34 and alternate years. Mr. Aust, Mr. Longenecker.
102. PUBLIC GROUNDS. II; 3 cr. Landscape problems in connection with public buildings. Park and cemetery design. Roadside planting. Lab. fee \$4.50. Offered in 1933-34 and in alternate years. Mr. Longenecker.
103. CROP IDENTIFICATION AND STANDARDS. I; 2 cr. A consideration of the classification, identification and standard of excellence of field, orchard and garden crops. Laboratory exercises in identification, judging and exhibiting crops. Lab. fee \$2.25. Mr. Moore, Mr. Holden.
104. LANDSCAPE PLANTS. Yr; 2 cr. I, A study of plant forms, color, and texture in landscape design. II, Advanced study of annuals and herbaceous perennials. Prerequisite: Hort. 6. Offered 1934-35 and alternate years. Lab. fee \$2.25. Mr. Longenecker.
110. SEMINARY. Yr; 1 cr. For advanced and graduate students. Mr. Aust, Mr. Roberts.
122. ADVANCED POMOLOGY. Yr; 2 cr. Recent theory, and practice regarding problems of commercial orcharding. Lectures, laboratory and field work on fruitfulness, cultural practices, thinning, harvesting, storing, marketing, classification, identification, and judging of fruits. First semester problems relating to fruit; second semester problems of orchard practice. Prerequisite: Hort. 1 or consent of instructor. Lab. fee \$2.25. Mr. Roberts.
180. HORTICULTURAL PROBLEMS. Yr; 1-3 cr. Assigned problems in the phase of horticulture in which the student is particularly interested. Lab. fee \$2.25 per cr. Mr. Aust, Mr. Longenecker, Mr. Moore, Mr. Roberts.
192. RURAL-REGIONAL PLANNING. II; 2-3 cr. A seminary approach to the field of rural regional planning. Analysis of actual case studies of land classification, land utilization, and rural ecology as these apply to the creation of rural de-

PLANT PATHOLOGY

GEORGE WANNAMAKER KEITT, Ph.D., *Professor of Plant Pathology, Chairman*

JAMES GEERE DICKSON, Ph.D., *Professor of Plant Pathology*

BENJAMIN MINGE DUGGAR, Ph.D., *Professor of Physiological and Applied Botany*

EDWARD MARTINUS GILBERT, Ph.D., *Professor of Botany and Plant Pathology*

LEWIS RALPH JONES, Ph.D., Sc.D., *Professor of Plant Pathology*

ALBERT JOYCE RIKER, Ph.D., *Professor of Plant Pathology*

RICHARD ENGLISH VAUGHAN, M.S., *Professor of Plant Pathology*

JOHN CHARLES WALKER, Ph.D., *Professor of Plant Pathology*

JOHN WILLIAM BRANN, M.S., *Assistant Professor of Horticulture and Plant Pathology*

JOHN JEFFERSON DAVIS, B.S., M.D., *Curator of the Herbarium*

CLARICE AUDREY RICHARDS, Ph.D., *Lecturer in Forest Products.*

Courses 104, 220, 221, 249 and 252 are offered in the Department of Botany, College of Letters and Science and do not count toward the 50 credits required in the College of Agriculture.

100. THESIS. Yr; 2 cr. Investigation of some problem in plant pathology. Subject should be chosen early, preferably the preceding spring, in order to take advantage of the summer season to secure material. Lab. fee \$2.25 per lab. cr. Staff.
101. DISEASES OF PLANTS. I; 3 cr. 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 Agr. Bact. 1. Lab. fee \$4.50. Mr. Walker, Mr. Gilbert.
102. METHODS IN PLANT PATHOLOGY. I; 3 cr. Isolation of parasites, technique of cultural methods, spore germination, and infection. Prerequisite: Plant Path. 101. Lab. fee \$4.50. Mr. Riker.
104. MORPHOLOGY OF FUNGI. I; 3 cr. Prerequisite: Botany 1. Lab. fee \$3.50. Mr. Gilbert.
116. DISEASES OF FIELD CROPS II; 2 cr. Arranged to meet the needs of students in plant pathology and agronomy. Prerequisite: Plant Path. 101. Not offered 1934-35. Lab. fee \$2.25. Mr. Dickson.
117. DISEASES OF ORCHARD FRUITS. II; 2 cr. A study of the more important diseases of deciduous orchard fruits. Prerequisite: Plant Path. 101. Not offered 1934-35. Lab. fee \$2.25. Mr. Keitt.
119. DISEASES OF TIMBER. I; 2 cr. A survey of fungi causing rot in living trees and structural timbers, and control measures. Prerequisite: Plant Path. 101. Not offered 1934-35. Lab. fee \$2.25. Miss Richards.
120. DISEASES OF VEGETABLE CROPS. II; 2 cr. A study of the more important field and storage diseases of vegetable crops. Prerequisite: Plant Path. 101. Offered 1934-35 and in alternate years. Lab. fee \$2.25. Mr. Walker.
122. FUNGICIDES IN RELATION TO HOST AND PARASITE. II; 1 cr. Advanced course, intended primarily for students in plant pathology, horticulture, and eco-

- onomic entomology. Prerequisite: Plant Path. 101. Offered 1934-35 and in alternate years. Mr. Keitt.
200. RESEARCH. Yr; *cr. Lab. fee \$2.25 per lab. cr. Staff.
220. ADVANCED MYCOLOGY. Yr; 2 cr. Prerequisite: Botany 104. Lab. fee \$2.00 per semester. Mr. Gilbert.
221. CLASSIFICATION OF PARASITIC FUNGI. Yr; 1 cr. Prerequisite: Botany 104 or Plant Path. 101. Mr. Davis.
223. SEMINARY IN PLANT PATHOLOGY. Yr; 1 cr. For advanced and graduate students. Mr. Keitt and staff.
249. SPECIAL PHYSIOLOGY OF PATHOGENIC FUNGI. II; 2 cr. Prerequisite: Botany 146. Mr. Duggar.
252. CYTOLOGY OF FUNGI. II; 2 cr. Prerequisite: At least one semester of general cytology. Lab. fee \$3.00 per cr. Mr. Gilbert.



STUDYING PLANT DISEASES

Farmers lose thousands of dollars each year through plant disease.
Most plant diseases can be controlled or prevented.

velopment plans and zoning ordinances for any given region. The extra credit is based upon topical and drafting room work. Prerequisites: Graduate standing or seniors with consent of instructors. Mr. Aust, Mr. Kolb, Mr. Wehrwein.

LIBRARY

CLARENCE SCOTT HEAN, B.A., *Librarian*

1. **LIBRARY PRACTICE. I;** 2 cr. The classification and arrangement of books, filing of bulletins, use of card catalogs, periodical indexes, abstract journals, public documents, standard reference works, including handbooks in the various fields of knowledge, and the compiling of bibliographies. Mr. Hean.



A CLASS IN VEGETABLE GARDENING

Each student propagates plants in his garden and actual practice is given in gardening.

POULTRY HUSBANDRY

JAMES GARFIELD HALPIN, B.S., *Professor of Poultry Husbandry, Chairman*

JOHN BARRY HAYES, B.S., *Associate Professor of Poultry Husbandry*

GERALD EVERETT ANNIN, B.S., *Instructor in Poultry Husbandry*

CLAYTON ERNEST HOLMES, M.S., *Instructor in Poultry Husbandry*

Students majoring in poultry husbandry may prepare for commercial poultry farming, for one of the various lines of commercial work with which poultry husbandry is related, or for educational work in extension, instruction, or research. Poultry majors should supplement their training by electing such courses as Animal Husbandry 126, Agr. Chem. 1 and 2, Agr. Econ. 127 and 128, and Genetics 101. Students preparing for educational work along the more scientific lines should elect Chemistry 120, Agr. Chem. 110, Zoology 105 and 109. Opportunities are provided for students majoring in poultry husbandry to become familiar with methods of poultry management by working at the University poultry plant, local hatcheries, etc. Not to exceed five credits from the following courses may be counted as a portion of the major requirement in poultry husbandry; Veterinary Science 125, Diseases of Poultry; Animal Husbandry 126, Livestock Feeding; Agricultural Chemistry 122, Animal Chemistry; Agricultural Economics 127, Cooperative Marketing; Agricultural Economics 128, Marketing Agricultural Products; and Genetics 105, Animal Genetics; Agricultural Engineering 2, Farm Structures.

1. **POULTRY RAISING. I;** 3 cr. A general survey course designed to give the student an understanding of the various problems concerned in poultry raising. Emphasis is given to the study of the various breeds and varieties, breeding and selection for egg production. Optional subject for all agricultural students. Lab. fee \$2.25. Mr. Holmes.
8. **MARKETING POULTRY PRODUCTS. I;** 3 cr. A consideration of those factors tending to produce quality in market poultry. Laboratory practice in fattening, dressing, grading, and packing various classes of market poultry; a consideration of those factors tending to produce quality in market eggs. Laboratory practice in candling, grading, and packing market eggs; methods of marketing poultry products. Lab. fee \$2.25. Mr. Holmes.
100. **THESIS. Yr;** 2 cr. Mr. Halpin, Mr. Holmes.
106. **POULTRY JUDGING. I;** 3 cr. Origin, history, and points of excellence of the various breeds and varieties of poultry as described in the American Standard of Perfection. A study of the inheritance of common characters in poultry. Prerequisites: Poultry Husbandry 1 or Genetics 101. Lab. fee \$2.25. Mr. Halpin, Mr. Annin.
107. **ADVANCED POULTRY MANAGEMENT. II;** 3 cr. Influence of recent investigations in poultry husbandry as they affect modern methods of feeding, housing, breeding, care and management of poultry. Special emphasis on rations and practices when poultry is kept on a large scale. Prerequisites: Poultry Husbandry 1 or Animal Husbandry 126. Mr. Halpin.
200. **RESEARCH PROBLEMS. Yr;** *cr. Lab. fee \$2.25 per lab. cr. Mr. Halpin, Mr. Holmes.

RURAL SOCIOLOGY

JOHN HARRISON KOLB, Ph.D., *Professor of Rural Sociology, Chairman*

ELLIS LORE KIRKPATRICK, Ph.D., *Associate Professor of Rural Sociology*

ARTHUR FREDERICK WILEDEN, M.S., *Assistant Professor of Rural Sociology*

There are at least two ways in which students may work in the field of Rural Sociology. First, a program leading to a full major and looking toward teaching, research, or extension work may be arranged. In such a plan 10 credits shall be taken in the department and 5 credits selected in any one of the following departments: Agricultural Economics, Agricultural Education, Agricultural Journalism, Horticulture, Home Economics, or Sociology in the College of Letters and Science. Credits thus chosen in Letters and Science may count on the major, but shall not be counted as a portion of the 50 credits required in agricultural subjects.

Second, courses in the department may be selected as electives by students majoring in other departments, who wish to gain a wider perspective concerning the social arrangements of present-day rural society.

25. RURAL LIFE. I; 3 cr. The study of Rural Society: Its organization and relations, such as families, neighborhoods, villages, interest groups, town-country and rural-urban relations; its people, such as their changing characteristics and mobility; its social institutions, such as those for education, religion, standards of living, sociability, recreation, health, social welfare, local government. Prerequisite: Sophomore standing. Mr. Kolb.
100. THESIS. Yr; 2 cr. Original work on problems pertaining to rural communities. Staff.
125. RURAL SOCIAL TRENDS. I; 2 cr. An advanced course in a systematic study of Rural Society, giving emphasis to the point of view of leading authorities and to the important findings of research including recent studies in rural social trends. Teaching and extension methods will be given attention. Prerequisite: Sociology 25 or equivalent, or senior or graduate standing. Mr. Kolb.
126. RURAL STANDARDS OF LIVING. II; 2 cr. Development of standards of living in rural communities. Consideration of all elements composing the standard of living; food, housing, transportation, education, religion, art and recreation, in relation to income, trading centers, social institutions, and local groupings. Prerequisite: Junior standing. Mr. Kirkpatrick.
192. RURAL-REGIONAL PLANNING. II; 2-3 cr. A seminary approach to the field of rural-regional planning. Analysis of actual case studies of land classification, land utilization, and rural ecology as these apply to the creation of rural development plans and zoning ordinances for any given region. The extra credit is based upon topical and drafting room work. Prerequisites: Graduate standing or seniors with consent of instructors. Mr. Kolb, Mr. Wehrwein, Mr. Aust.
200. RESEARCH. Yr; *cr. Rural social organization and rural life. Mr. Kolb. Rural standards of living. Mr. Kirkpatrick. Community organization and leadership and extension methods. Mr. Wileden.
225. SEMINARY IN RURAL SOCIAL RESEARCH. I; 2 cr. Emphasis upon the scope and method of research in this field. Case studies of current research projects with particular attention to those concerned with various phases of community organization, standards of living, rural population, farmers' organizations, social institutions, rural government, social psychology and social trends. Mr. Kolb.

SOILS

- ANDREW ROBINSON WHITSON, B.S., *Professor of Soils, Chairman*
 CLINTON JOSEPH CHAPMAN, B.S., *Professor of Soils*
 FRED LUDWIG MUSBACH, B. S., *Professor of Soils*
 EMIL TRUOG, M.S., *Professor of Soils*
 EDWARD JOHN GRAUL, M.S., *Associate Professor of Soils*
 OTTO REINHART ZEASMAN, B.S., *Associate Professor of Soils and Agricultural Engineering*
 ARTHUR ROBERT ALBERT, B.S., *Assistant Professor of Soils*
 HAROLD HAIGHT HULL, Ph.D., *Instructor in Soils*
 HENRY LAWRENCE AHLGREN, M.S., *Assistant in Soils*

Soils 1 is prerequisite to all other courses in soils. Soils 122 and 126 may be elected by middle course sophomores. Soils 1 and 120 are general in character and are adapted to the needs of all students of agriculture. Advanced students specializing in this subject are advised to elect courses in chemistry, soils bacteriology, plant physiology, agronomy, or geology, according to their special needs, during their senior and graduate years. The summer period is particularly suited to advanced work in soil fertility; for courses offered see summer session bulletin.

GENERAL MAJOR. Students majoring in soils and preparing for practical farming, positions as farm manager, teacher of agriculture or county agricultural agent, should take Physics 61, 5 cr., Botany 146, 4 cr., and science or mathematics, 5 cr.; and select the courses in soils in the following order: For the sophomore year, 1, 5 cr., 122 or 126, 2 or 3 cr.; for the junior year, 120, 2 cr.; for the senior year, 127, 2 cr., 128, 2 cr., and thesis, 4 cr., or 121, 4 cr. In addition to these suggestions, students are urged to elect courses in the Departments of Agronomy, Botany, Agricultural Economics, Agricultural Engineering, Animal Husbandry, Agricultural Bacteriology, and Geology to supplement the required work in soils. General majors desiring to teach should consult the chairman of the Department of Agricultural Education concerning requirements not later than the beginning of the junior year.

TECHNICAL MAJOR. Students desiring to prepare for the work of soil surveying, land classification or field experimentation should follow the general suggestions given above for the general major, but choose supplementary electives from the following group: Agr. Engr. 5, 102; Agronomy 102, 106, 120; Botany 129; Chemistry 11 or 12; Geology 1, 11; Soils 121, 125.

Students preparing to become soil chemists or physicists should take Soils 1, 5 cr., and Soils 122, 3 cr., or 126, 2 cr., in the sophomore year; Soils 127, 2 cr., and Soils 121, 4 cr., in the junior year; and Soils 120, 2 cr., Soils 125, 3 cr., Soils 100, 4 cr., and Soils 128, 2 cr. in the senior year. In addition, Chemistry 12, 3 cr., Geology 17, 3 cr., Agronomy 106, 3 cr., should be elected in the sophomore or junior year; Chemistry 120, 3 or 5 cr., a language, Agronomy 102, 2 cr., and Agr. Bact. 123, 3 cr., in the junior year; Chemistry 130, 5 cr., in the senior year.

Not to exceed 5 credits from the following courses may be counted as a portion of the undergraduate major requirement in Soils; Agr. Bact. 123, 3 cr., Geology 1, 5 cr., Geology 17, 3 cr., Agronomy 102, 2 cr., Agronomy 106, 3 cr.

Students are urged to consult a member of the department not later than the second semester of their sophomore year so that a logical sequence of courses may be arranged.

1. SOILS AND SOIL FERTILITY. I; 4 cr. Discussions and laboratory work on the formation, composition, properties, fertility, and management of soils in relation to the growth of plants. Prerequisite: Chemistry 1b or concurrent registration. Lab. fee \$4.50. Mr. Graul and staff.
100. THESIS. Yr; 2 cr. Lab. fee \$2.25 per lab. cr. Mr. Whitson and staff.
120. SOIL MANAGEMENT. I; 2 cr. Lectures and field work, maintenance of fertility, including principles of fertilizer practice, and adaptation of system of agriculture to type of soil and climate. Prerequisite: Soils 1. Offered in 1933-34 and in alternate years. Mr. Whitson.
121. SOIL ANALYSIS. II; 4 cr. Lectures and laboratory. Soil acidity methods, limestone analysis, determination of essential elements, availability methods, complete soil analysis The use of chemical analysis in soil diagnosis. Prerequisites: Soils 1, Chemistry 12. Lab. fee \$4.50. Mr. Truog.
122. SOIL PHYSICS. II; 2-4 cr. Lectures and laboratory. The physical properties of the soil constituents in relation to the growth of plants with practical applications to farm practice. Prerequisite: Soils 1. Lab. fee \$2.25 per lab. cr. Offered 1934-35 and alternate years. Mr. Graul.
125. SOIL AND LAND CLASSIFICATION; AGRICULTURAL CLIMATOLOGY. II; 3 cr. Lectures and field work in soil mapping. The principles of climatology and soil and land classification in relation to agriculture. Prerequisite: Soils 1 or graduate standing. Mr. Whitson.
126. FERTILIZERS. II; 2 cr. Lectures and discussions on the composition, manufacture, and characteristics of artificial fertilizers. Methods of application, deportment in the soil, and practical use with and without farm manure. Prerequisite: Soils 1. Alternates with course 122, Soil Physics and Tillage. Offered 1933-34 and alternate years. Mr. Graul.
127. SOIL SCIENCE AND PLANT NUTRITION. I; 2 cr. Lectures and discussions. The constitution of the soil, especially as a medium for plant growth. The newer application of scientific principles to such problems as soil acidity, use of fertilizers, soil amendments, and toxic agents. Prerequisite: Soils 1 or graduate standing. Mr. Truog.
128. SEMINARY IN SOILS. I; II; 1 cr. Mr. Whitson, Mr. Truog.
180. TOPICAL AND FIELD WORK. Yr; *cr. Mr. Whitson, Mr. Truog, Mr. Graul.
200. RESEARCH. I, II; *cr. Lab. fee \$2.25 per lab. cr. Mr. Whitson, Mr. Truog, Mr. Graul.

VETERINARY SCIENCE

FREDERICK BROWN HADLEY, D.V.M., *Professor of Veterinary Science, Chairman*
ALEXANDER SEPTIMUS ALEXANDER, F.H.A.S., M.D.C., *Professor of Veterinary Science,*
Emeritus

BURR ABRAHAM BEACH, D.V.M., *Associate Professor of Veterinary Science*

CHESTER ALBERN HERRICK, Sc.D., *Assistant Professor of Zoology and Veterinary*
Science

EDWIN REINHOLD CARLSON, D.V.M., M.S., *Instructor in Veterinary Science*

The subjects described below give students an appreciation of the various branches of veterinary science. They are taught largely by the laboratory method. Besides giving information needed for the intelligent care and management of sick animals, they aid advanced students to secure a knowledge of animal breeding, animal pathology, animal parasitology and Veterinary bacteriology.

1. THE ANIMAL BODY. I; 3 cr. The structure, functions, and derived products of the animal body. The student learns about the form, capacity and productivity of farm animals as well as the fundamentals relative to their feeding and breeding. Optional subject for all agricultural students. Lab. fee \$4.50. Mr. Hadley.
2. NON-INFECTIOUS DISEASES OF LIVESTOCK. I; 2 cr. Their causes, symptoms. and prevention, including conformation and soundness. Mr. Hadley.
100. THESIS. Yr; 2 cr. Mr. Hadley, Mr. Beach, Mr. Herrick.
120. PARASITES OF DOMESTIC ANIMALS. I; 3 cr. Structure, life history, diagnosis and prevention of parasites of the lower animals. Prerequisite: Zool. 1 or Vet. Science 1. Lab. fee \$5.00. Mr. Herrick.
123. INFECTIOUS DISEASES OF LIVESTOCK II; 2 cr. Their causes, control and eradication. Prerequisite: A course in veterinary science or bacteriology. Mr. Hadley.
125. DISEASES OF POULTRY. II; 2 cr. A study of the more common diseases of poultry. Prerequisite: Vet. Science 1 or Poultry Husb. 1. Offered 1933-34 and in alternate years. Mr. Beach.
126. INFECTION AND IMMUNITY. II; 3 cr. An experimental study of the principles of infection and immunity. Prerequisite: A course in bacteriology: Offered 1934-35 and in alternate years. Lab. fee \$4.50. Mr. Hadley and Staff.
180. TOPICAL WORK. Yr; *cr. Assigned work for advanced students. Mr. Hadley and staff.
200. RESEARCH. Yr; 2 cr. Lab. fee \$2.25 per lab. cr. Mr. Hadley, Mr. Beach, Mr. Herrick.

THE REGENTS OF THE UNIVERSITY

GLENN FRANK—President of the University, *ex officio*

JOHN CALLAHAN—State Superintendent of Public Instruction, *ex officio*

| | Term Expires |
|---|-----------------|
| State-at-Large—GUNNAR GUNDERSEN, La Crosse | 1937 |
| State-at-Large—ARTHUR H. SHOLTS, Oregon | 1935 |
| State-at-Large—CARL DREXLER, Menasha | 1936 |
| State-at-Large—DANIEL H. GRADY, Portage | 1938 |
| First District—ROBERT V. BAKER, JR., First Wisconsin National Bank Building, Kenosha | 1937 |
| Second District—FREDERICK H. CLAUSEN, Horicon | 1936 |
| Second District—HAROLD M. WELKE, 111 South Hamilton Street, Madison | 1937 |
| Third District—MRS. CLARA T. RUNGE, 433 Fourth Street, Baraboo | 1938 |
| Fourth District—MRS. META BERGER, 2129 Kenwood Boulevard, Milwaukee | 1934 |
| Fifth District—A. C. BACKUS, 539 North 21st Street, Milwaukee | 1933 |
| Sixth District—MRS. JESSIE C. COMBS, Oshkosh | 1939 |
| Seventh District—GEORGE W. MEAD, Wisconsin Rapids | 1934 |
| Eighth District—HERMAN W. ULLSPERGER, Sturgeon Bay | 1936 |
| Ninth District—REV. E. M. CHRISTOPHERSON, Pigeon Falls | 1938 |
| Tenth District—PETER ELMON, Superior | 1935 |

OFFICERS OF THE REGENTS

FREDERICK H. CLAUSEN, President

HAROLD M. WILKIE, Vice-President

ROBERT HENRY, State Treasurer, *ex officio* Treasurer

J. D. PHILLIPS, Business Manager

M. E. MCCAFFERY, Secretary

THE BOARD OF VISITORS

Regent Appointments

| | Term Expires |
|---|-----------------|
| MRS. CHAS. R. CARPENTER, 50 Cambridge Road, Madison | 1934 |
| GEORGE P. HAMBRECHT, 515 E. Corham St., Madison | 1935 |
| LOYAL DURAND, 202 Wells Bldg., Milwaukee | 1936 |
| ALFRED C. KINGSFORD, Baraboo | 1937 |
| BEN A. KIEKHOEER, c-o Union Refrigerator Transit Co., Milwaukee | 1934 |
| FRED H. DORNER, 1107 East Knapp Street, Milwaukee | 1936 |
| MRS. CARL A. JOHNSON, Fuller's Woods, Madison | 1937 |
| DR. W. W. KELLY, Green Bay | 1934 |
| MRS. ANNETTE ROBERTS, 6226 North Lake Drive, Milwaukee | 1935 |
| DR. E. L. SCHROEDER, Shawano | 1936 |
| CARL J. HESGAED, Orfordville | 1937 |

THE COLLEGE OF AGRICULTURE

CHRIS L. CHRISTENSEN, Dean and Director

I. L. BALDWIN, Assistant Dean

K. L. HATCH, Associate Director of Extension

N. CLARK, Assistant Director of Experiment Station

A. J. HAAS, Executive Secretary

When you are through with this catalog
please pass it on to a friend