

The short course in agriculture: 1922-23. 1922

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Serial No. 1156, General Series No. 939

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COLLEGE OF AGRICULTURE OF THE UNIVERSITY OF WISCONSIN

SHORT COURSE CAL	ENDAR 1922-192	23	
Registration days	MonTues.	Nov.	13-14
Recitations begin	Wed.	Nov.	15
Thanksgiving Day-legal holiday	Thurs.	Nov.	30
Make-up examinations	Sat.	Dec.	16
First term closes	Wed. (12 m.)	Dec.	20
Christmas recess begins 1923	Wed. (12 m.)	Dec.	20
Registration of new students	Wed.	Jan.	3
Recitations of second term begin	Thurs. (8 a. m.)	Jan.	4
Make-up examinations	Sat.	Feb.	3
Second term closes	Wed.	Feb.	7
Third term begins	Thurs.	Feb.	8
Livestock trip—required of second- year students	ThursFri.	Feb.	22-23
Washington's Birthday-legal holiday	Thurs.	Feb.	22
Make-up examinations	Sat.	Mar.	10
Third term closes	Fri.	Mar.	16
Closing Day exercises	Fri.	Mar.	16

THE SHORT COURSE IN AGRICULTURE

The Short Course in Agriculture was established in 1885 and has been since that time an important factor in the agricultural development of the state. Among its graduates are many of Wisconsin's most successful farmers. These men recognize today the value of the course in giving technical knowledge, a broadened vision of agriculture, and an inspiration for the future. They are boosters for the course at all times. See page 36.

Since it was established, 6,130 students have attended the Short Course in Agriculture. Every county in the state has been represented in the course at some time. Not only has Wisconsin profited by the course, but in many parts of the United States and in several foreign countries are found successful farmers who attended the Short Course. One graduate, now on a western ranch, recently sent four of his men to Wisconsin to profit by the course which had prepared him for a career as a successful farmer. A few students have returned to pursue advanced studies and are now in agricultural colleges and experiment station work.

The equipment of the College of Agriculture is thoroughly modern and practical. The buildings stand for the best types of farm architecture and the ideas represented in their construction can be readily adapted to the average farm. For years attention has been given to obtaining breeds of livestock that will be representative and true to type. The instruction in the short course is given by the regular members of the staff of the university, and the students have every advantage offered to the students in the other courses.

Purpose of the Short Course

Most of the young men who take the course realize that the two winters of training, fifteen weeks each winter, offer them the supreme opportunity of their lives; and they are taking advantage of that opportunity, as have those who have graduated before them, to become the seedsmen, the breeders of better livestock, and above all, the home-builders of the state. The purposes of the Short Course are:

THE UNIVERSITY OF WISCONSIN

Technical agriculture. To teach the fundamental scientific facts necessary to understand the reasons for the common farm practices, and to give a thorough training in practical agriculture.

Winter school. To give this information at the season of the year when the work on the farm is the least pressing, to permit the students to complete the course in the shortest possible time, and to offer the advantages of the College of Agriculture to those who are unable to complete a longer course.

Farm management problems. To study the problems involved in successful farm management, including the cooperative buying of supplies and marketing of farm crops, the employment of labor and the organization of the farm as a business enterprise.

Rural development. To create an interest in rural life, to bring the student to realize the possibilities and opportunities of the farm as a social factor and his relations to the community and society, and to train young men to make an intelligent study of the problems affecting the agricultural interests of the state and to become better farmers and more intelligent and useful citizens.

Acquaintanceship and inspiration. To enable young men from the various sections of the state to come to know one another and to form acquaintances which will last through life, and to meet and listen to lectures by men prominent in the agricultural world from this and other states and from foreign countries.

Preparation for responsible positions. To help young men to secure desirable positions for which they have been fitted by training and experience and where they can increase their store of practical farm knowledge.

Opportunities for Graduates

During the past year the employment bureau of the College of Agriculture has been unable to meet the rapidly increasing demand for students to work on farms in this and other states. Many of the students have returned to the home farms.



SHORT COURSE MEN HAVE THEIR OWN ORGANIZATIONS Each class has its own basketball team and many exciting contests take place.

The nature of the positions which are open to Short Course students is shown by the following:

General farm laborer. The opportunity for farm positions on general farms, other than the home farm, is exceptionally good. These positions pay experienced men from \$35 to \$75 a month with board.

Herdsman, foreman. Many enterprising and successful farmers need trained men to assume the responsibility of the management of the herds. This is a responsible position that pays from \$70 to \$85 and sometimes \$100 or more a month with board. This type of position serves as a stepping stone for something better; it frequently leads to a managerial job.

Some farms with a large amount of business require the services of a foreman who looks after certain parts of the work of the farm under the direction of a manager. These positions are not as common as those of herdsmen, but the pay is about the same or perhaps a little better.

Farm managers. The demand for men to manage farms is on the increase. The compensation offered for such positions varies according to the experience and training of the man.

Share renters. Young men with some capital in addition to their training and experience may find opportunities for renting farms on a share basis. This may serve as a stepping stone to farm ownership.

Return to the home farm. Most of the students who take the Short Course find it to their advantage to return to the home farm. Many of them enter into partnership with their parents or brothers and soon become real farm managers.

The real value of the Short Course is well demonstrated in the results that the boys have been able to get after leaving the college. Figures by the Agricultural Experiment Association (composed of former agricultural students) show that the yield of corn obtained for a 5-year period by 1,550 former students averaged 62 bushels an acre, while the best corn in the same community for the same period of time averaged 49 bushels an acre. This is a difference of 13 bushels an acre a year in favor of the improved varieties of corn and the improved methods introduced and practiced by these former students.

Cow testing work. This type of work offers good opportunities for students, in this and other states. The work pays from \$60 to \$100 a month and includes living expenses.

The Plan of the Short Course

The Short Course consists of three terms of five weeks each. Students may enter at the beginning of any term. The course is so planned that a definite unit of work is completed during each five-week period. The course will start the middle of November and the studies for the first term (five weeks) will be completed at the time of the Christmas holidays. The second term will start after the vacation and the work of this term will close at the end of the first week in February. The third term will begin the second week in February and close the middle of March. The course will be completed in good time to permit the student to return to the farm to begin the spring work.

Under this plan Short Course students will concentrate upon a few subjects for each term and complete them before taking up other subjects. Instruction is given by means of lectures, recitations, laboratory practice, demonstrations and conferences. Opportunity is given for students to secure answers to individual questions, which makes the work practical and helpful to them.

The course of study is so arranged as to give the students an idea of the fundamental sciences which underlie successful agriculture. The principles and approved practices of profitable farming based upon these fundamental sciences are explained.

The lectures proper occupy two or three hours a day and the rest of the time is devoted to laboratory practice and demonstration work.

Text books are used as an aid to understanding the lectures and laboratory exercises. In the laboratories, students are given practice in such subjects as stock and grain judging, grafting, budding and pruning fruit trees, testing seeds, laying tile drains, operating farm engines and machines, mixing rations for animals, examining of horses for soundness. Classes begin at 8 a. m., continuing until 4:30 with a noon intermission from 12 to 1:30 p.m. No classes are held on Saturday afternoon. If a subject is elected by a student it cannot be dropped unless permission is secured from the Short Course committee.

A standing of 60 or over in every subject is required for a Short Course certificate.

Make-up examinations shall be held on the last Saturday afternoon of the term.

On the last Tuesday afternoon of the third term candidates for certificates may take examinations for the removal of any failure.



INTERESTED IN DAIRYING Short course first year students work in the dairy laboratory in milk testing, separator work, and butter making.

A candidate for a certificate having three or fewer failures on closing day may, after a lapse of three months, be granted his certificate on passing an examination arranged by the Assistant Dean.

Students having more than three failures upon closing day can remove them only by repeating in class the work in which such failures were incurred.

8

Requirements for Admission

General requirements. No entrance examination is required. Students should be at least 16 years old and should have a common school education to pursue the studies of the Short Course to the best advantage. Persons who have not completed a common school education, but who are by age and experience fitted for the work may be admitted to the course by special permission. Experience has shown that the young men at least 20 years of age who have a general knowledge of farming are able to secure the greatest benefit from the course.



GAS ENGINES INTEREST SHORT COURSE MEN Different types of engines are studied in farm engineering.

THE UNIVERSITY OF WISCONSIN

From county short course. The county agricultural representatives gives courses to boys in their counties. Graduates of these county short courses are admitted to the second year of the Short Course upon their diploma and evidence of having done sufficient supplementary work on their own farm problems, but all are required to take in class at least chemistry and library practice of the first year schedule, omitting elective work of the second year conflicting therewith. Those not having completed sufficient supplementary work are required by the Short Course committee to take several of the first year studies in class. This may prevent the completion of their second year studies in one year.

From colleges, normals, high schools, county agricultural schools. Students will be given credit for work which corresponds with required work of the Short Course.

Persons intending to enter the second year of the Short Course should make application and present qualifications to the chairman of the Short Course committee not later than September 1, so that there will be time to investigate each application.

EXPENSES

The chief expenses are for room and board. The executive office will have lists of rooms on registration day and assist students in finding desirable locations. The following are estimates for the fifteen week period:

Room\$	30	to	\$ 50
Board	80	to	120
Books, supplies, etc	15	to	30
Miscellaneous	10	to	20
-			
\$	135	to	\$220

College Fees

Students enrolling the first term pay for the entire course. Students enrolling at the beginning of the second or third term pay approximately two-thirds or one-third respectively, of the total fees. The following shows the amounts paid:

Total fees for 15 weeks for those entering the FIRST TERM.	For Residents of Wisconsin Incidental	Not Residents of Wisconsin \$51.67 10.00 2.50 10.50 2.00 1.50
	\$26.50	\$78.17
Total fees for 10 weeks for those entering the SECOND TERM	Tuition 6.67 Infirmary 2.00 Laboratory fee 7.00 Laboratory deposit 2.00 Gymnasium fee 1.00	34.45 6.67 2.00 7.00 2.00 1.00
	\$18.67	53.12
Total fees for 5 weeks for those entering the THIRD TERM.	Tuition 3.34 Infirmary 1.00 Laboratory fee 3.50 Laboratory deposit 2.00 Gymnasium fee .50	$17.22 \\ 3.34 \\ 1.00 \\ 3.50 \\ 2.00 \\ .50$
	\$10.34	\$27.56

Students who pay for the entire course, but who drop out at the end of the first or second term, are refunded two-thirds or one-third, respectively, of the entire fee. Students must notify the Director of the Short Course on the day of withdrawal in order to secure refund.

Students who drop out during one of the five week terms are refunded the entire fee for each whole term remaining and on the following basis for the partial term remaining according to time of withdrawal: 75 per cent if during the first week of the term, and 50 per cent if during the second week of the term. After the second week, no refund is issued for that term.

Students should not carry large sums of money in currency or checks, but should place their surplus money in a bank and draw upon it from time to time by check or certificate. Bring post-office money orders instead of checks or drafts to avoid the necessary identification at the bank.

Someone will be in attendance at the registration counter to answer inquiries at any time.

Books Required for Short Course

A number of books will be needed by Short Course students. It is impossible to state in advance what books will be re-

THE UNIVERSITY OF WISCONSIN

quired and we would, therefore, advise prospective students not to attempt to buy any textbooks until they are instructed to do so in the various classes.

Articles to Bring from Home

Each student should come equipped with overalls and jacket. As all students take gymnasium work, it would be advisable to bring tennis shoes. A light gymnasium suit is required, but this and a regulation gymnasium towel may be purchased in Madison. Laundry for gymnasium suits and towels is provided by the gymnasium fee.

Medical Supervision

Special attention is given to the health of the student-body. The health of the students will be cared for by the clinical department of the School of Medicine. The students will be given a medical examination on entrance, and any student feeling indisposed will be at liberty to consult the physicians in charge of the university clinic free of cost at any time. The university puts forth every effort to safeguard the health of the student-body.

The infirmary fee provides for care without extra charge in the university infirmary in case of sickness, but students requiring special care—major surgery, treatment of the eye, ear, and so forth, are referred to specialists.

Student Activities

The Literary Society is conducted every Friday night by the students in the Short Course. At the weekly meetings members of the society participate in parliamentary drill, debating and public speaking. These meetings are frequently addressed by prominent agriculturists and members of the faculty. Social features are often included.

A special feature in the nature of an oratorical contest or class debate is introduced each year. Contestants from both classes enter this contest.

The Short Course students have also a glee club and orchestra under faculty direction, and furnish music for Farmers' Course meetings and other meetings during the winter, as well as for the Literary Society. Each class is represented in athletics by a basketball and a track team. All stu-

12

dents in the Short Course are eligible to compete for places in these organizations.



MUSIC HAS A PLACE

The Agricultural Experiment Association. The association is an organization of former students of the College of Agriculture who are interested in introducing improved methods and practices upon their farms. The work includes field tests in the study of soils, crops, livestock, and the business management of the farm.

This association has been especially helpful in conducting field tests with grain and forage crops and the growing and disseminating of purebred seeds.

The annual meeting of this association occurs during the second term of the Short Course and the students are given an opportunity to attend the meetings and to become members. The membership is now about 1,550. R. A. Moore is secretary of the association.

Short Course Y. M. C. A. The students have their own or-

The short course orchestra and the glee club are in demand for all agricultural programs.

ganization and are assisted by the university organization. A series of Sunday morning meetings for the Short Course students was held during the last winter and a number of interesting excursions were made to various points of interest in and about the city, under the charge of a Y. M. C. A. representative.

Closing Day Exercises

Students who complete the studies of the Short Course in a satisfactory manner will be granted Short Course certificates duly signed by the Dean of the College of Agriculture. Certificates were first granted in 1895, sixteen in number.

For the last seven years the certificates have been presented at the Closing Day exercises held on the last day of the course. Some prominent speaker is procured to give the address and special music is furn. shed for this occasion.

Short Course for Manufacture of Dairy Products

Two special courses of instruction in the manufacture of dairy products are given each year. One of the courses begins early in November and continues until February 1. The course is planned to accommodate men who have had at least six months of work in a creamery, cheese factory or ice cream plant. The other course is more elementary and is designed for beginners. Students may enter this course at any time between March first and November first.

The dairy department receives milk from 100 or more farmers each day, and is equipped with all the modern appliances and machines used in the manufacture of creamery butter, cheddar, Swiss, brick, and other kinds of cheese, ice cream and bottled milk. The instruction in all work is both theoretical and practical.

For further information write to E. H. Farrington, Dairy Department, University of Wisconsin, Madison, Wisconsin.

Beekeepers' Short Course

A special short course in beekeeping is given each year during the third term of the short course. This course is planned primarily for commercial beekeepers. Write for further information to H. F. Wilson, College of Agriculture, Madison.

HOUR	FIRST TERM Nov. 13-Dec. 20	Jan 3-Feb 7	THIRD TERM	
8-10	Sec. 1. Agronomy A Sec. 2. Agr. Engineering A Sec. 3. Soils A	Sec. 1 Soils A Sec. 2 Agronomy A	Sec. 1 Agr. Engineering A Sec. 2 Soils A Sec. 3 Agronomy A	
	Sec. 5. Solis A	Sec. 3 Agr. Engineering A		
10-11	Plant Life	Poultry A	Vet. Science A	
11-12	Chemistry A	Feeds and Feeding B	Horticulture A	
12-1:30		Intermission	-	
1 :30-3 :30	Sec. 1 Stock Judging A Sec. 2 Dairying A	Sec. 1 Dairying A	Sec. 2 Stock Judging B	
1 :30-4 :30	Sec. 3 First Half Term Div. A Gas Engines B Div. B Shop Work A or B Last Half Term Div. A Shop Work A or B Div. B Gas Engines B	Sec. 3 Stock Judging B First Half Term Div. A Gas Engines B Div. B Shop Work A or B Last Half Term Div. A Shop Work A or B Div. B Gas Engines B	Sec. 3 Dairying A First Half Term Div. A Gas Engines B Div. B Shop Work A or B Last Half Term Div. A Shop Work A or B	
W.F. 3:30-4:30	Sec. 2 Bookkeeping	Sec. 1 Bookkeeping	Sec. 3 Bookkeeping	
3:30-4:30 M. W. F.	Sec. 1 Library	Sec. 3 Library	Sec. 2 Library	
3 :30-5 :30 Tu. Th.	Physical Education	Physical Education	Physical Education	
4:30-5:30 W.	Parliamentary Practice	Parliamentary Practice	Parliamentary Practice	

SHORT COURSE SCHEDULE-FIRST YEAR

15

SHORT COURSE SCHEDULE-SECOND YEAR

HOUR	FIRST TERM Nov. 13-Dec. 20	SECOND TERM Jan. 3-Feb. 7	THIRD TERM Feb. 8-Mch. 16
8-9	Stock Feeding C	Bacteriology	Farm Management
9-10	Vet Science B	Agr. Economics C	Breeding and Management D
10-12 Lab. Select one each term Stock Judging E Shop, A, B, C, or D		Stock Judging F Agr. Engineering D Shop, A, B, C, or D	Agr. Engineering D Shop, A, B, C, or D Plant Diseases
12:00-1:30		Intermission	
1:30-2:30	Agronomy B	Livestock Management G	Soil Management B
2:30-4:30 Lab. Horticulture B Select one Land Drainage C Poultry B		Agronomy C Entomology A Poultry C Farm Advertising	Rural Institutions Adv. Farm Dairying B Poultry D Farm Woodlot and Grounds
4 :30-5 :30 W. F.	Physical Education	Physical Education	Physical Education
4 :30-5 :30 M.	Parliamentary Practice	Parliamentary Practice	Parliamentary Practice

DEPARTMENT OF INSTRUCTION

AGRICULTURAL BACTERIOLOGY

ASSISTANT PROFESSOR W. H. WRIGHT

Agricultural bacteriology deals with the relation of bacteria to agriculture. The main purpose is to acquaint the student with those phases of bacteriology which he should take into account in his daily life. Especial attention is devoted to such subjects as nitrification, nitrogen fixation, and the inoculation of legumes; the contamination of milk and the influence of its bacterial content on its value as food and for butter and cheese making; the preservation of foods and fodders. In the case of the transmissible diseases of animals, those that are of greatest importance to the livestock industry of the state are studied, especially as to their prevention. The relation of bacteria to the health of the farm home is considered in a discussion of farm water supply and sewage disposal. Mr. Wright.

AGRICULTURAL CHEMISTRY

ASSOCIATE PROFESSOR TOTTINGHAM

It is the purpose of this course to show how the principles of chemistry operate on the farm. Among the subjects discussed in the lectures are the following: The chemical elements in the air and soil and their relations to plant growth; processes of growth of crops and their relation to animal feeding; the composition of domestic animals and the processes involved in their use of the nutrients of feeding materials.

Special attention is given to the composition and conservation of farm manure. The sources, composition and use of commercial fertilizers are discussed and also the chemistry of common insecticides and fungicides. Attention is given to the commercially important constituents of milk and their relation to dairy by-products.

Experiments and demonstrations are presented to show the properties of common chemical elements and compounds of THE UNIVERSITY OF WISCONSIN



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plants and animals, with the aim of interpreting agricultural chemistry in the language of farm practice.

AGRICULTURAL ECONOMICS

PROFESSORS HIBBARD, MACKLIN; ASSOCIATE PROFESSOR MCNALL; ASSISTANT PROFESSOR KOLB; ASSISTANT KELLER

The work given by this department is designed to improve the business ability of the farmer by teaching methods of keeping accounts, managing farms, selling the produce, and to point out means of improving the conditions of living in the country.

A. Methods of Farm Bookkeeping. The elements of bookkeeping applied to the farm. Methods of taking farm inventories and the keeping of cash accounts, and accounts with livestock, farm crops, etc. Mr. Keller.

B. Methods of Farm Management The aim is to show the student how the various farm operations may be organized and correlated so that the entire farm may be handled successfully and economically. The location and size of the farm and its adaptability to the raising of crops and livestock, the



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lay-out of the farm, the capital and equipment necessary for the various types of farming and the problem of farm help. Mr. McNall.

C. Agricultural Economics. The conditions and forces which determine the prices of farm products, method of marketing, co-operative and independent, and methods of renting farms and securing farm loans. Mr. Hibbard, Mr. Macklin.

D. Rural Institutions. The peculiar problems of country life. Methods of improving the conditions of life in the farm home and in the farmer's community. Mr. Kolb.

AGRONOMY

PROFESSORS MOORE, GRABER; ASSOCIATE PROFESSOR LEITH, ASSISTANT PROFESSOR STONE;

INSTRUCTORS ALBERTZ AND HOLDEN; ASSISTANT ZERBEL

The work in agronomy will include studies of the culture, management, methods of improvement, rotations, and best varieties of all farm crops most suitable for Wisconsin conditions. A. General Survey. This is a general course in farm crops, especially adapted to the needs of the first year students. Its aim is to give the students a thorough understanding of the best varieties of field crops for Wisconsin conditions and how best to handle them through all phases of culture and harvest. Special emphasis is laid upon identification of varieties, both in seed and plant forms, through the application of the principles and practices of judging show samples. Mr. Holden and Albertz.

B. Forage Crops. This course covering a series of lectures on forage crops is especially adapted to second year students. The work covers a discussion of the best methods and practices in sowing, handling, testing, selection and improvement of all the leading forage crops. Mr. Moore, Graber and Albertz.

C. Seed and Weed Control. May be elected in the second term. A study of the ways and means of solving one of the most serious problems confronting the Wisconsin farmers today. The student will be taught how to tell when crop seeds are of good quality and free from noxious weed seeds, and what happens when impure seeds are used. Every short course man should know the noxious weeds and their seeds. The work given in this course will enable him to do so. Mr. Stone.

AGRICULTURAL ENGINEERING

PROFESSOR E. R. JONES; ASSISTANT PROFESSOR DUFFEE; INSTRUCTOR FISH

The Department of Agricultural Engineering has unusual facilities for giving practical instruction to students. Thousands of dollars' worth of tractors, engines, machinery, tools and farm-building equipment are loaned to the department by manufacturers each year for the use of students in the lecture room and laboratory.

A. Farm Buildings and Equipment. Lectures and laboratory work in the planning and arrangement of farm buildings. The lectures include a discussion of silos, concrete construction, ventilating systems. The laboratory work will be practical instruction in useful farm practices, such as soldering, rope tying and splicing, belt lacing, babbitting and concrete construction. Mr. Fish and assistants.

B. Gas Engines. Demonstrational lectures supplemented by laboratory work. Construction and operation of gas engines. Fuel consumption tests. General study of the farm tractor. Mr. Duffee and assistants.

C. Land Drainage. Exercises both in and out-of-doors with the surveyor's level, plane-table, drain tile and tiling tools. Planning drainage systems from topographic maps of typical areas and from sketches of particular areas furnished by students. Superintending the installation of farm drainage systems. Mr. Jones.

D. Farm Tractors and Machinery. Engine and tractor troubles. Practice with different types of tractors. Construction and operation of the different types of farm implements such as plows, binders, corn-planters, cultivators, etc. Mr. Duffee and assistants.

ANIMAL HUSBANDRY

PROFESSORS HUMPHREY, FULLER, MORRISON; ASSOCIATE PRO-FESSOR HULCE; ASSISTANT PROFESSOR KLEINHEINZ; IN-STRUCTOR FARGO; ASSISTANTS O. J. DELWICHE, KIRST

The courses in animal husbandry given in the Short Course include livestock breeding, judging, feeding, care and management. The extensive herds and flocks of the University farm are supplemented by prize winning animals loaned by breeders of the state.

A. Elementary Stock Judging. Score card practice and textbook work in the study of market classes and breeds of livestock. Department.

B. Feeds and Feeding. The study of feeding stuffs, principles of feeding and rations. Mr. Fargo.

C. Advanced Feeds and Feeding. A continuation of the study of feeds and feeding begun the first year with special application to practical problems. Mr. Fargo.

D. Breeding and Management. Lectures on the general principles of breeding, farm animals and the care and management of swine and dairy cattle. Mr. Humphrey, Mr. Hulce, Mr. Fargo.

E. Judging Swine and Dairy Cattle. Mr. Fargo, Mr. Hulce.

F. Judging Beef Cattle, Sheep and Horses. Mr. Fuller, Mr. Kleinheinz.

G. Livestock Management. Lectures on the breeding and production of beef cattle, sheep and horses. Mr. Fuller, Mr. Kleinheinz.

AGRICULTURAL JOURNALISM

ASSISTANT PROFESSOR SUMNER

Farm Advertising. Modern methods of salesmanship are needed on the progressive farm. The farm name, the farm letterhead, the classified advertisement, display and sales advertisements, sales letters, and auction posters are some of the mediums which will be studied.

ECONOMIC ENTOMOLOGY

PROFESSOR WILSON; ASSISTANT PROFESSOR FLUKE

The importance of insect control on the farm is always recognized by the farmer, but his opportunities for study are limited, and the occasional information which he picks up is usually gone from his mind before he has an opportunity to apply it.

A. Farm Insects and Methods of Control. This course is planned to meet that need and the more important insect pests of farm, garden and orchard crops will be considered in sufficient detail to admit of ready recognition and treatment where known. The principles of insect control will be studied and applied to individual insects according to the best known methods. Five two-hour periods each week during the second term of the second year. Mr. Fluke.

B. Beekeeping. A course of lectures on practical beekeeping for those students who desire to study the elementary principles of this subject. Lectures and demonstrations in modern beekeeping will be given and each student will have an opportunity to familiarize himself with up-to-date methods and equipment for the handling of bees, and the production of comb and extracted honey. Bee diseases, their recognition, and treatment will also be studied. Five two-hour periods each week during the first term of the second year. Mr. Wilson.

FARM DAIRYING

PROFESSOR FARRINGTON; INSTRUCTOR THOMSEN

In Farm Dairying, students receive instruction in the general principles which are involved in the production, testing, and handling of milk and cream for city markets, creameries and cheese factories, and the making of butter on the farm.

A. Farm Dairy Practice. The new Dairy Laboratory is equipped with the most approved apparatus for the testing of milk, the separation of cream and the manufacture of butter and other dairy products. Practical instruction in all branches of farm dairying, including the testing of milk and cream, the detection of the more common adulterants of these products and the operation of hand separators, churns, butter workers, and other appliances of the dairy. Mr. Thomsen.

B. Advanced Farm Dairying. A supplementary course to Dairy A. Designed for training men in cow-testing association work, the operation of milking machines, the commercial handling of milk and other advanced farm dairy operations. Mr. Thomsen.

HORTICULTURE

PROFESSORS MOORE, MILWARD; ASSOCIATE PROFESSORS AUST, BRANN; ASSISTANT PROFESSOR GIFFORD; INSTRUCTOR NIGHTINGALE

The horticultural work in the Short Course is designed to give the student a knowledge of the principles and practices underlying successful fruit and vegetable production.

A. Farm Orcharding and Gardening. Lectures on the selection of site, planting, soil management, pruning, spraying, varieties, and other orchard problems with special reference to the farm fruit plantation. The farm garden, and methods of making it of greatest service on the farm. Mr. Moore.

B. Horticultural Practice. An elective course designed for those desiring more detailed work in horticulture than is given in Horticulture A. Demonstration lectures and laboratory exercises on spraying, preparation of spray materials, grafting, pruning, fruit identification and judging, tree planting, hotbed construction, potato identification, judging and culture; propagation of plants by sexual and asexual means. Mr. Brann, Mr. Milward, Mr. Moore. C. Plant Life. The principles of plant reproduction and growth underlie the culture of all plants. One cannot grow plants most successfully and intelligently without knowing how they secure their food and the factors influencing its conversion into plant tissue. Lectures will be given on life processes of the structure of plants, plant processes, how plants reproduce, effects of external influences, methods of propagation, and ways of improving plants. Mr. Nightingale.

D. Farm Woodlot and Grounds. The work given is designed to show the relation of forestry to agriculture. The care of the woodlot, windbreaks, shelter belts, tree planting, selections of species for planting, and methods of propagation, planting, and protection. Mr. Aust.

LIBRARY WORK

ASSISTANT PROFESSOR HEAN

The aim of this course is to teach students to use books, papers, and bulletins as tools. Lectures will be given on classification and other library methods, and on the literature of agriculture, including books and serial publications. These lectures will be supplemented by practical work in the library. Special attention will be given to the best ways in which to read and study newspapers, farm papers and bulletins, methods of keeping files and records of valuable articles read, how to get government as well as state bulletins and reports, how these may be filed so as to be a ready and valuable reference for the busy farmer. Mr. Hean.

PARLIAMENTARY PRACTICE

ASSOCIATE PROFESSOR BEWICK

This course is designed to give Short Course students training in parliamentary practice, handling of public meetings, debating and public speaking. Each class will be given one regular hour of work each week. Joint meetings of both classes will be held one evening every other week. At such meetings an interesting and instructive program will be given by students and outside talent. Mr. Bewick.

PHYSICAL EDUCATION

PROFESSOR LOWMAN AND ASSISTANTS

All Short Course students will be given a thorough physical and medical examination, and will be required to take two one-hour periods a week of development exercises, athletics and recreational games under capable direction. An opportunity for voluntary exercise and for the organization of basketball and other teams and the holding of athletic contests between classes, will be given. These activities are carried on in the Stock Pavilion which has been equipped with facilities for this purpose, including gymnastics and athletic apparatus, lockers and shower baths. The course is closed by an indoor track meet, with track contests between teams representing the first and second year classes.

PLANT PATHOLOGY

ASSOCIATE PROFESSOR VAUGHAN

Owing to the demand for instructional work in the control of diseases of farm crops, the following course is offered:

Plant Diseases and Their Control. A general introduction to the subject. This will include such an acquaintance with the symptoms of the common and more important plant diseases of Wisconsin crops that one may recognize them on sight. Special attention will be given to the diseases of field crops, grains, fruits, potatoes, and other horticultural crops. Control measures and their application will be emphasized.

Lectures, demonstrations, and individual laboratory work aiming to give first hand acquaintance with the symptoms of the diseased plants and the characters of the parasitic fungi and bacteria causing the diseases, including methods of overwintering, spread and control. Six two-hour periods each week during the last term of the second year. Mr. Vaughan.

POULTRY HUSBANDRY

PROFESSOR HALPIN; ASSISTANT PROFESSOR REID; ASSISTANT O. N. JOHNSON

The Poultry Department is equipped with modern poultry buildings, colony houses, a very complete line of incubators, brooders, and other poultry apparatus, such as cramming machines and bone cutters. In addition, some twenty-six varieties of chickens, five of geese, and three of ducks, furnish ample material for poultry judging. These will be used to help the student to become familiar with general poultry raising. Several years of careful trapnesting and pedigree hatching have developed strains of heavy laying chickens that will be used. An extensive file of poultry journals and books is to be found in the Agricultural Library.

A. Poultry Raising. The breeding, feeding and management of poultry under farm conditions with special reference to the keeping of fowls for meat and eggs. Breeding and feeding for winter egg production, poultry house construction, incubating and brooding, both natural and artificial, killing and marketing dressed poultry, the common poultry diseases. Mr. Reid.

B. Poultry Judging. The judging of poultry for exhibition and culling for egg production. Mr. Halpin, Mr. Johnson.

C. Demonstration and laboratory work in feeding for egg production, packing and marketing eggs, killing and dressing market poultry, caponizing and house construction. Mr. Reid, Mr. Johnson.

D. Incubation and Brooding and a study of some of the common diseases of poultry. Mr. Reid.

WORKSHOP DEPARTMENTS

SUPERINTENDENT DABNEY; INSTRUCTORS SCHUMANN, MALONE, SULLIVAN

A. Elementary Carpertry. Instruction is given in the use of wood working tools, how to sharpen chisels, saws and planes and keep them in order. A choice is allowed of several articles that would be of use around the house or farm, but the articles chosen must involve the use of all tools and principles to be covered by the course. The list includes a mitre box, saw horse, feed trough, stool, stepladder, tool tray, hammer handle, or singletree. Several types of joints are made, and elementary instruction in the use of the steel square is given. Mr. Sullivan.

B. Elementary Forging. For first year students. Instruction in the essential operations of forging, such as drawing out, upsetting, pointing, bending and welding mild steel, leading to the applications of these operations in making useful articles such as bolts, chain links, rings, clevises of various forms, cold chisels, metal and stone drills, hammers, knives. Instruction in hardening, tempering, drilling, riveting and soldering. Mr. Schumann and Mr. Malone.

C. Advanced Carpentry. More advanced work to suit the needs of the individual student. The construction of stairs, window and door frames, cupboards, the making of models of houses, barns, and portable pens, silos and framing for concrete construction are among the subjects that may be selected. Special cabinet or cedar chest work may also be carried on if desired. Advanced instruction in the use of the steel square as applied to the cutting of rafters and other complex framing. Mr. Sullívan.

D. Advanced Forge Work. A continuation of first year work including more advanced practice. Welding steel of various grades, pointing and sharpening picks, plow shares, etc., brazing, welding, forging and tempering springs is included in practice work as time permits. Mr. Schumann and Mr. Malone.

SOILS

ASSISTANT PROFESSORS RICHARDS, STEWART; INSTRUCTOR ALBERT

The following courses in soils include lectures supplemented by laboratory exercises which demonstrate the principles taught in the lectures.

A. Soil Fertility. Twenty-eight lectures, quizzes, and lab oratory exercises, on the soil and its relation to crop production. The principal subjects studied are the soil, its origin and relation to plants and animals; conditions affecting plant growth; plant-food elements and crop needs; importance of water and tilth in agriculture; land drainage; liming; relation of manure and commercial fertilizers to crop yields and soil improvement. Mr. Stewart, Mr. Albert.

B. Soil Management. Lectures on the management of special soil, crop rotation in relation to farm management, systems of farming in relation to soil fertility, determining the needs of soils, profitable crop production, and soil erosion. Mr. Richards.

VETERINARY SCIENCE

PROFESSOR ALEXANDER

A. The Animal in Health. In this course first year students study the principles of anatomy and physiology to become acquainted with the normal structure and functions of the animal body. Mr. Alexander.

B. The Animal in Disease. In this course second year students study the causes, symptoms, and methods of preventing the common diseases of animals. Practical demonstrations also are given, as opportunity offers, the better to enable students to recognize diseases and unsoundness and give first aid treatment. Mr. Alexander.



SPORTS ON ICE Ice boating, skating and other winter amusements are popular.



THE SHORT COURSE FACULTY AND THE GRADUATING CLASS.

SHORT COURSE ENROLLMENT 1921-22

Y	r. Name Address	v	r Name Address
2	Ahler, Bernard H., Lyons	0	Dewees William E
2	Ahler, John A Lyons	-	Martinsville Ind
1	Albrecht, Arthur, Stratford	1	Dodte Bernard A Neilleville
1	Albrecht, Glenn A., Ohio Ill	î	Doherty Theo E Lancester
1	Anderson, Henry C. Monroe	î	Durkin Edward P Madison
ī	Anderson Leonard A Cambridge	-	Durkin, Duwaru TMauison
ĩ	Anderson Louis E Sheboygan	1	Farll Harold Modine
2	Austin Stanley Waterloo	- 0	Ehrhardt Willard Fraudes
	interior interior	ĩ	Elbort Jock Medicon
1	Bailie Harold E Milwankee	î	Emperich Edwin Bradier
2	Baker James C. Spooner	1	Englemen Clevence Histor
ĩ	Balstad Christian Stoughton	10	Engleman, Clarence Hixton
î	Barikmo Otto C Northland	-	Lapesein, Lapin S
2	Barland Charles H Eau Claire		
2	Barnetzke Walter C Applaton	1	Fonondaal Theophile Lunemburg
ĩ	Barthel Arthur Bandom Lake	1	Fink Horbort P Encoment
î	Bauman Joseph A Marathon	1	Fink, Herbert K Freemont
2	Baumaistar Clarance Knowles	+	Finley, Watts Hoopeston, III.
ĩ	Baver John Plain	1	Fless, Clemens F Milwaukee
î	Belda Edmund E De Forest	5	Foreitan, Freu
2	Bender Edgar C Cambria	0	Frank, Lucius Calumet, Mich.
ĩ	Bentheimer Harold C	-	Fredrick, Hugo
-	Johnson Graak	1	Frei, AlbertGreen Lake
1	Bergh Herman Wosthy	4	Fried, Chillod EFountain City
î	Berkalew George D Milton		Call Andrew T Calashan
î	Bezold Clarence I	1	Gall, Andrew J Gedarburg
*	So Cormantown	4	Gerbach, Earl L Lancaster
1	Rislozynski Stanhan Pulaski	-	Gerber, victor S. Chippewa Falls
î	Bille Honry A Woundas	1	Gere, Joseph ABeloit
2	Bird Sidney H Ir So Byron	1	Golden, DickSo. Kaukauma
ĩ	Blaney W Edwin Medicon	1	Good, Fred PMonroe
5	Bliss Douglas F Rockford	1	Goss, florace L Naperville, III.
ĩ	Bohl Bernard A Beauer Dam	2	Grady, Thomas Oregon
2	Bolander Wilher A Ambarg	2	Gysbers, BertBrandon
2	Boyce Van		There a start
ĩ	Brevfegle Charles W	1	Haase, Clarence C Neenah
*	Dullman TI	1	Haeniger, Emil Iron Kidge
1	Brinkerhoff Neil F Branden	2	Hall, Harold GEdgerton
1	Brune Corl F Milmular	1	Halladay, Irving JSalem
î	Bryant Howard M Dingarida III	1	Hanks, Amos U N. Milwaukee
0	Bubola Edward M. Riverside, III.	1	Hansen, Otto WJanesville
1	Bushholz, Edmund A Seymour	1	Hansen, Willard DFlorence
0	Buchnolz, Ronald M Melvin, III.	1	Hanson, Arthur B Chetek
1	Buol, Floyd West Salem	1	Hanson, Ray NOshkosh
0	Burdalow, Harry E Monroe	1	Hartford, Wendell Hancock
5	Burley Cleatton K Barron	+	Heineck, Warren L Melrose
ĩ	Budde Mach	1	Heisig, Morton Morrisonville
*	Duule, Mack	1	Heltz, Kalph J
1	Case Loonard Ontania	-	Heimenstine, Myrle L. Barneveld
î.	Chalfant Louria Chalden	1	Henderson, Paul C. Center, Colo.
1	Claridge Albert T Beedshung	T	HICKCOX, Edward M
î.	Colline Julia Creeksburg	0	Hacking Green
î	Cornelison Vernon Snooner	1	Hocking, Unas. H Dodgeville
2	Coster Elbert H Annone III	1	Honly, Arnold
ĩ	Covle, Thomas L. Klevenville	9	Horswill Forl F
î	Coyle, T. Raymond Klevenville	4	Plack Direct Della
î	Craigmile, Howard H Ora Ind	1	Hubbard Doul Et Athe
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2	Damerau, Henry, Fair Water	1	Humphrov Noil North Cold
1	Davis, Henry L Poy Sinni	1	rumphrey, NenNorthheid
2	Deerwester, Richard F., Bruce	1	Indermuchle Carl Hartford
1000		-	andermuenie, Cari Hartford

 Jackmann, Herman. Sturgeon Bay
Parfrey, William Richland Center
Jaeger, Hugo A.....Cleveland
Paulson, Clarence E. Northland
Jensen, George W...Albertville
Pelzer, Otto W. New London
Jessen, Carl E., Jr....Withee
Penzenstadler, Aloysius. Oshkosh
Johnson, Carl M... DeKalb, Ill.
Perry, Clifford Gratiot
Johnson, Herman...Bloomer
Philibeck, John Algoma
Johnson, Lewis.....Rice Lake
Pinn, Floyd A. Superior
Jongensen, Melvin...Poy Sippi
Jungbluth, Fredric....Madian
Kassera, Robert...Maiden Rock
Powell, Leslie A. Randall 2 Powell, Leslie A.Randall 2 Kaste, Reuben C...... Alma 1 Keehn, Lester...... Muscoda 2 Kies, Horace A...... Platteville 1 Reel, Leo New London 1 Reichert, Joseph W. Milwaukee 2 Reppen, Arthur C. ... Dane 1 Rhiner, Alton Riley 2 Rhiner, Otto Riley 2 Rich, John A. .. Prairie du Sac 2 Richter, Henry ... Union Grove 8 Robbins, Willis T. Ft. Atkinson 1 Roberts, Warren H. .Lancaster 1 Robertson, Arnold.... Stoughton 2 Roebtke, Harry ... Green Leaf 2 Kimura, Bensaburo..... 2 Kimura, Bensaburo...., Japan Sapporo, Japan 1 Koelsch, Norman W.... Jackson 1 Kopp, Edmond W.... Alma 1 Korbel, Harry G....Milwaukee 1 Kraus, Alois J.... Two Rivers 1 Kroll, John...... Highland 1 Kunze, Charles H..... Barron 1 Lambie, Stuart Appleton 2 Langenegger, Paul H. .. Alma 2 Langhoff, Frederick .. Hamburg 1 Larson, Theodore Mason 1 Lehmann, Otto ... Watertown 1 Lehr, Allie L. Madison 1 Lintner, Wilbert L. ...Arlington 1 Logerquist, Arnold M...... Bailoya Harbor 1 Sahlie, Alfred ...Hamar, Norway 1 Salm, Hugo N.Neenah 1 Sanderson, Wallace ...Cambria 1 Santoskey, Arthur ... Almond 1 Schmit, Raymond C. Greenville 1 Schmith, Harold H. ...Markesan 1 Schreiner, Fred ...Glen Haven 2 Schroeder, Otto F.Wilton 2 Schroeder, George M... Madison 1 Schultz, Elmer Neenah 1 Schumann, Myron W. Dodgeville 1 Schwefel, William S. ...Oakfield 1 Sell. George W.Oshkosh 2 Lord, Denzil P. Superior 1 Lorfeld, Arthur W. ... Cleveland 2 McCormick, Donald J. Lancaster 1 McLean, Wallace W. . . Arlington 2 Madison, Raymond A... Poy Sippi 1 Mandt, Matthew C..... Madison 1 Marty, Fred Monroe 1 Masche, Leland Hortonville Schwefel, William S. ...Oakheld
Sell, George W. Oshkosh
Sheldon, Lawrence ... Arkansaw
Siggelkow, Earl G. ...McFarland
Simmons, Walter ...Chicago, Ill
Slotness, Ingdon E. Dallas
Snyder, John J. ...Pensaukee
Spaulding, Willard M. ...Hancock
Stefanus, Philip Polonia
Stevens, Curtiss R. Stillman Valley Masche, Leiand Hortonville
Mehltretter, Louis..... Oconto
Mell, John De Forest
Miller, Scott S. Polo, III
Milton, Benjamin ... Chicago, III
Moeller, Adolph R. Sturgeon Bay
Moorgan, Lester A. Oakwood Farm Steward, Lewis R. Stillman Val-ley, Ill.
Stransky, JosephColoma Straub, Herbert J......Edgar
Strutt, Clifford Ridgeway
Stuessy, Melvin W. Ridge
Sullivan, Joseph F. Chicago, Ill.
Swalheim, Edlen W. ... Arlington Nagel, Raymond Sheboygan
Naumann, H. Ernest .Lancaster
Nelson, Edwin G. ... Oregon
Nelson, Walter L. ... Prentice
Ness, Joseph D. ... Morrisonville
Nieman, Arnold F. ... Cedarburg
Nieman, Herbert A. ... Cedarburg
Nye, Roy F. Durand, Ill 2 Taylor, Fred B. Madison 1 Tennis, Sylvester Unity 1 Thannum, James O. ...Hayward 1 Odberg, Andreas Merrill 1 Olson, Clarence E. .. Albertville 1 Orth, Lambert R. Muscoda

1	Thorp, Henry B Monroe	1	Wallis, Henry M., Jr Racine
2	Tiedeman, Erwin A Middleton	2	Waste, George Mondovi
2	Tippman, Bert C Caledonia	1	Weber, Louis A Adell
	Minn.	1	Wegner, Walter Elkhart Lake
2	Tobison, William Coleman	1	Wehrmann, Walter Elkhart Lake
2	Tourdot, August Reedshurg	2	Welch, Ray G Webster
1	Tschudy, Theodore Monroe	2	Wightman, Warren U. Plymouth
ī	Turner Harry Jr. Gillingham	ī	Wilson, Robert Northfield
2	Twist Roma L. Hancock	ĩ	Wohld Verona M Thorne
~	a whot, atomic in and took	ĩ	Wolf Adam Marengo Ill
1	Verkuilen Walter W Thorn	2	Woodruff Truman Chinnewa
î	Vial George Edmund La Grange	-	Falle
*	Till Till	1	Wrolstad Jaroma () Northland
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1	Vilas, George Calvin Evanston, Ill.	2	Wuethrich, Alfred Appleton
1	Voland, Roy H Kiel	1	Zeiss, Leonard Kewaunee
		1	Zillig Edward G. Sun Prairie
		1	Zuorn Frank Milwaykoo
		1	aucin, riankMilwaukee



STUDYING IN THE LIBRARY The library of the College of Agriculture contains 18,500 bound volumes and 15,000 pamphlets, agricultural in character.

GRADUATES ARE BOOSTERS

I think that the help and inspiration that I derived from a twelve weeks' Short Course in 1887 have been the foundation of any success that I may have made in agriculture.

> Charles L. Hill, Rosendale, Wis,

It is a little over twenty years ago that I took the Short Course. As I look back over that period of time and think what it meant to me by revealing to me the great possibilities along the different lines of agriculture, I must say that it was the one thing that gave me the insight and vision to undertake and accomplish what I have in building up Chippewa Stock Farm with its herds of Percherons, Guernseys and Poland Chinas.

> L. P. Martiny, Chippewa Stock Farm.

The Short Course in Agriculture offered by the Wisconsin University is one of the greatest assets to any boy or young man who expects to enter the farming profession.

R. H. Lang.

Lang Homestead Farm, Jefferson, Wis.

Every young man intending to farm should take the Short Course. It is not an expense, but an investment that will pay interest many fold on the time and money spent, which can never be taken from him.

> H. E. Kruger, S. C., 1907.

I can say without qualification that the days I spent in this Short Course, 1906-8, have been the most profitable of my life.

Henry Michels, Golden Glow Farm.

To the boy who intends to stay on the farm a Short Course education is one of the best assets that he can have. No other course to my knowledge will impart so much practical work as this course in so short a time.

> William F. Renk, Sun Prairie, Wis.

33

THE UNIVERSITY OF WISCONSIN

The Short Course in Agriculture stands out preeminently as one of the most practical and useful courses in America for the young farmer. The students going from that course in Wisconsin have set a pace in pure bred grains and livestock that has never been excelled by any other class of farmers. This prosperity has been the means of making Wisconsin known far and near as the state of fine farm homes.

Ransom A. Moore, University of Wisconsin.

POST CARD



THIS SPACE FOR ADDRESS ONLY

DIRECTOR OF SHORT COURSE College of Agriculture

Madison

Wisconsin

Application for Admission

To the Director of the Short Course,

University of Wisconsin, Madison.

I hereby apply for admission to the Short Course in Agri-

culture for the term beginning November 13, 1922. I have

had years experience on a farm.

Should I change my address before November 13, or should anything occur which will prevent my attendance, I will at once notify you, so that my place can be filled by some other applicant.

Name	Age
P	ost Office
C	ounty State
R	ural Route Noor Street and No
Dated	



WHERE THE SHORT COURSE MEN COME FROM Every county in the state is represented in the list of graduates

