

# CORNELL UNIVERSITY OFFICIAL PUBLICATION

Volume XXIII

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## New York State College of Agriculture Announcement of the Two-Year Courses for 1932-33

Ithaca, New York  
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# THE CALENDAR FOR 1932-33

## FIRST TERM

1932		
Sept.	19 Monday	University entrance examinations begin.
Sept.	26 Monday	Academic year begins. Registration of new students.
Sept.	27 Tuesday	
	9-12 a.m.	Registration of new students.
	1-5 p.m.	Registration of old students.
Sept.	28 Wednesday	Registration of old students.
Sept.	29 Thurs. 8 a.m.	Instruction begins.
Oct.	21 Friday	Last day for payment of tuition.
Nov.	24-27	Thanksgiving recess.
Dec.	17 Sat. 12.50 p.m.	Instruction ends.
	1933	
Jan.	2 Mon. 8 a.m.	Instruction resumed.
Jan.	11 Wednesday	Birthday of Ezra Cornell. Founder's Day.
Jan.	30 Monday	Term examinations begin.

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Christmas recess.

## SECOND TERM

Feb.	10 Friday	Registration of all students.
Feb.	11 Saturday	
Feb.	13 Mon. 8 a.m.	Instruction begins in regular courses.
Feb.	13-18	Farm and Home Week.
Mar.	6 Monday	Last day for payment of second-term tuition.
Apr.	1 Sat. 12.50 p.m.	Instruction ends.
Apr.	10 Mon. 8 a.m.	Instruction resumed.
June	5 Monday	Term examinations begin.
June	19 Monday	Sixty-fifth Annual Commencement.

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Spring recess.

# NEW YORK STATE COLLEGE OF AGRICULTURE

## STAFF OF ADMINISTRATION AND INSTRUCTION IN THE TWO-YEAR COURSES

- Livingston Farrand, A.B., M.D., L.H.D., LL.D., President of the University.  
Albert Russell Mann, B.S.A., A.M., D.Sc., D.Agr., LL.D., Provost of the University.  
Cornelius Betten, Ph.D., D.Sc., Director of Resident Instruction, and Acting Dean of the College of Agriculture and Director of Experiment Stations.  
Carl Edwin Ladd, Ph.D., Director of Extension.  
Olin Whitney Smith, B.S., Secretary.  
Anson Wright Gibson, M.S., Associate Secretary, Former Student Relations.  
Willard Waldo Ellis, A.B., LL.B., Librarian.  
George Wilson Parker, Bursar.
- Margaret Almstedt, A.B., Assistant in Botany.  
Walfred Albin Anderson, Ph.D., Assistant Professor of Rural Social Organization and Rural Sociologist in the Experiment Station.  
Winifred Enos Ayres, Assistant Professor of Dairy Industry.  
Lindsay McLeod Black, B.S.A., Assistant in Plant Pathology.  
Harold Eugene Botsford, B.S., Extension Professor of Poultry Husbandry.  
Jacob Herbert Bruckner, B.S., Instructor in Poultry Husbandry and Assistant in Poultry Husbandry (Brooding) in the Experiment Station.  
Harry Oliver Buckman, Ph.D., Professor of Soil Technology.  
Doak Bain Carrick, Ph.D., Professor of Pomology and Pomologist in the Experiment Station.  
Martin Paul Catherwood, Ph.D., Assistant Professor of Business Management and Investigator in Business Management in the Experiment Station.  
Daniel Grover Clark, B.S., Assistant in Botany.  
Charles Hughes Crawford, M.S., Assistant in Animal Husbandry and Assistant in Animal Husbandry in the Experiment Station.  
Harriet Creighton, A.B., Assistant in Botany.  
Otis Freeman Curtis, Ph.D., Professor of Botany and Plant Physiologist in the Experiment Station.  
Benjamin Harold Davis, A.B., Instructor in Plant Pathology.  
Bruce Raymond Davisson, B.S.A., Instructor in Poultry Husbandry and Assistant in Poultry Husbandry (Incubation) in the Experiment Station (second term).  
Wesley Eastman, M.A., Instructor in Agricultural Engineering.  
George Abram Everett, A.B., LL.B., Professor of Extension Teaching.  
Walter Eugene Fleischer, B.S., Assistant in Botany.  
Thomas Homer Goodding, M.S., Instructor in Field Crops.  
Edward Sewall Guthrie, Ph.D., Professor of Dairy Industry and Dairy Technologist in the Experiment Station.  
Goldan Orlando Hall, Ph.D., Assistant Professor of Poultry Husbandry and Assistant Poultry Husbandman (Genetics) in the Experiment Station.  
Earle Volcart Hardenburg, Ph.D., Professor of Vegetable Crops and Investigator in Vegetable Crops in the Experiment Station.  
Merritt Wesley Harper, M.S., Professor of Animal Husbandry and Animal Husbandman in the Experiment Station.  
John Frederick Harriott, Ph.D., Assistant Professor of Farm Management and Investigator in Farm Management in the Experiment Station.  
Edwin Shepherd Harrison, Ph.D., Instructor in Animal Husbandry and Assistant in Animal Husbandry in the Experiment Station.  
Arthur John Heinicke, Ph.D., Professor of Pomology and Pomologist in the Experiment Station.

- Glenn Washington Herrick, B.S.A., Professor of Economic Entomology and Entomologist in the Experiment Station.
- Barbour Lawson Herrington, B.S., Instructor in Dairy Industry.
- Gustave Frederick Heuser, Ph.D., Professor of Poultry Husbandry and Poultry Husbandman (Nutrition) in the Experiment Station.
- Robert Byron Hinman, Ph.D., Assistant Professor of Animal Husbandry and Assistant Animal Husbandman in the Experiment Station.
- Edwin Fraser Hopkins, Ph.D., Assistant Professor of Botany and Assistant Botanist in the Experiment Station.†
- William Robert Horsfall, M.S., Assistant in Entomology.
- Lewis Knudson, Ph.D., Professor of Botany and Plant Physiologist in the Experiment Station.
- Richard August Laubengayer, B.S., Instructor in Botany.
- Samuel Ralph Levering, B.S., Assistant in Pomology.
- John Clarence McCurdy, B.S., C.E., Professor of Agricultural Engineering.
- Laurence Howland MacDaniels, Ph.D., Professor of Pomology and Pomologist in the Experiment Station.
- Herbert John Metzger, D.V.M., Assistant in Animal Husbandry and Assistant in Animal Husbandry in the Experiment Station.
- Lua Alice Minns, M.S. in Agr., Instructor in Floriculture.
- Frank Barron Morrison, B.S., Professor of Animal Husbandry and Animal Husbandman in the Experiment Station.
- Clyde Hadley Myers, Ph.D., Professor of Plant Breeding and Plant Breeder in the Experiment Station.
- William Irving Myers, Ph.D., Professor of Farm Finance and Agricultural Economist in the Experiment Station.
- Leo Chandler Norris, Ph.D., Research Assistant Professor of Poultry Husbandry and Assistant Poultry Husbandman (Nutrition) in the Experiment Station.
- Edward Marshall Palmquist, B.S., Assistant in Botany.
- George Eric Peabody, M.S., Assistant Professor of Extension Teaching.
- Frank Ashmore Pearson, Ph.D., Professor of Prices and Statistics and Statistician in the Experiment Station.
- Loren Clifford Petry, Ph.D., Professor of Botany.
- Kenneth Post, M.S., Instructor in Floriculture.
- Myers Peter Rasmussen, Ph.D., Professor of Marketing and Investigator in Marketing in the Experiment Station.†
- James Edward Rice, B.S.A., Professor of Poultry Husbandry and Poultry Husbandman in the Experiment Station.
- Howard Wait Riley, M.E., Professor of Agricultural Engineering and Agricultural Engineer in the Experiment Station.
- Louis Michael Roehl, B.S., Assistant Professor of Farm Shop.
- Harold Ellis Ross, M.S.A., Professor of Dairy Industry.
- Elmer Seth Savage, Ph.D., Professor of Animal Husbandry and Animal Husbandman in the Experiment Station.
- Newell Allen Schappelle, B.S., Assistant in Botany.
- Robert S. Snell, M.S., Assistant in Botany.
- Menalco Solis, B.S., Instructor in Dairy Chemistry.
- Leland Spencer, Ph.D., Professor of Marketing and Investigator in Marketing in the Experiment Station.\*
- Clifford Nicks Stark, Ph.D., Assistant Professor of Bacteriology and Assistant Bacteriologist in the Experiment Station.
- Dale Edmund Thomas, M.S., Assistant in Botany.
- George Edward Thompson, M.A., Assistant in Plant Pathology.
- Allan Hosie Treman, A.B., LL.B., Lecturer in Business Law (first term).

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\*On leave first term.

†On leave second term.

- Kenneth Leroy Turk, B.S., Assistant in Animal Husbandry and Assistant in Animal Husbandry in the Experiment Station.
- Alfred Van Wagenen, B.S., Instructor in Poultry Husbandry and Assistant in Poultry Husbandry (Marketing) in the Experiment Station (first term).
- Donald Stuart Welch, Ph.D., Assistant Professor of Plant Pathology and Assistant Forest Pathologist in the Experiment Station.
- Herbert Hice Whetzel, M.A., D.Sc., Professor of Plant Pathology and Plant Pathologist in the Experiment Station.
- Edward Albert White, B.Sc., Professor of Floriculture and Ornamental Horticulture and Floriculturist in the Experiment Station.
- John Peter Willman, M.S., Instructor in Animal Husbandry and Assistant in Animal Husbandry in the Experiment Station.
- Andrew Leon Winsor, Ph.D., Assistant Professor of Rural Education.
- Roger Winters, A.B., Assistant in Plant Pathology.
- Paul Work, Ph.D., Professor of Vegetable Crops and Investigator in Vegetable Crops in the Experiment Station†
- Samuel Healea Work, B.S., Assistant in Animal Husbandry and Assistant in Animal Husbandry in the Experiment Station.
- Forrest Blythe Wright, M.S., Instructor in Agricultural Engineering.

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†On leave second term.

# NEW YORK STATE COLLEGE OF AGRICULTURE

The New York State College of Agriculture is maintained by the State as one of three state colleges within Cornell University. It is equipped with a staff and facilities for teaching resident students of various types, for making investigations in all phases of agriculture and the underlying sciences, and for disseminating its teachings to the people of the State. The support of the State towards these ends is supplemented by substantial appropriations from the Federal Government, and by the land and other large facilities and services freely placed at the disposal of the College by Cornell University.

## COURSES AVAILABLE

The information contained in this announcement relates to the two-year courses first offered in 1929-30. These are designed for young men who expect to go into farming or into business closely allied thereto, and who desire agricultural training of college grade, but cannot devote more than two years to it. The College offers, in addition, a winter course beginning in November and running through twelve weeks; a summer session of six weeks; a four-year course, leading to the degree of bachelor of science; and graduate courses, leading to higher degrees. These offerings give preparation for different kinds and different levels of agricultural vocations and call for different prerequisites for admission. A separate printed announcement of each of these courses is available on application to the Secretary of the College of Agriculture, Roberts Hall, Ithaca, New York.

## REQUIREMENTS FOR ADMISSION

For admission to the two-year courses, candidates must offer fifteen units acceptable by the University of the State of New York toward a state diploma, or the equivalent by school certificates. Candidates will also be required to furnish certificates of good moral character.

All students matriculating in the University must present a satisfactory certificate of vaccination against smallpox. This certificate is considered satisfactory only if it certifies to a successful vaccination within five years, or certifies that at least three unsuccessful attempts have been made within the same period.

Applicants are advised not to enter these courses unless they have had considerable farm experience.

## THE APPLICATION FOR ADMISSION

Candidates for admission should address Dr. E. F. Bradford, Director of Admissions, Morrill Hall, Ithaca, New York, stating that they desire to enter one of the two-year courses in the College of

Agriculture. This should be done as early as possible, since the procuring of the necessary credentials often takes considerable time.

Every candidate for admission must make a deposit of \$25 with the Treasurer at the time of sending in the application blank. A check, draft, or money order should be made payable to Cornell University and sent to the Office of Admissions, Morrill Hall, Ithaca, New York.

If the candidate matriculates, the deposit will be credited to his account, \$10 for the matriculation fee and \$15 as a guaranty fund, which every two-year student is required to maintain, and which is to be refunded to him upon his permanent withdrawal, less any indebtedness to the University.

If admission is denied a candidate who has complied with these rules, the deposit is refunded in full at any time.

### CERTIFICATE ON COMPLETION OF COURSE

Students who satisfactorily complete the work of an approved two-year course with credit for at least sixty hours, will be granted an appropriate certificate.

### EXPENSES

#### TUITION

Tuition is free to two-year students in the New York State College of Agriculture, who at the beginning of the college year are, and for at least twelve months prior thereto have been, bona-fide residents of the State of New York. A student transferring from one college or course in the University to another, must pay for the hours credit he receives in the latter college or course an amount corresponding to the difference in tuition; and no such transfer is allowed or credit given until such payment has been made.

Students in Agriculture who are not exempt under these provisions are required to pay \$200 for the full college year. This amount is payable in installments of \$110 at the beginning of the first term and \$90 at the beginning of the second term, but a student registered only for the second term of the academic year is required to pay at the rate of the first term.

Tuition and other fees become due when the student registers. The University allows twenty days of grace after the last registration day of each term of the regular session. The last day of grace is generally printed on the registration coupon which the student is required to present at the Treasurer's office. Any student who fails to pay his tuition charges, other fees, and other indebtedness to the University, or who, if entitled to free tuition, fails to claim it at the Treasurer's office and to pay his fees and other indebtedness, within the prescribed period of grace, is thereby dropped from the University unless the Treasurer has granted him an extension of time to complete payment. The Treasurer is permitted to grant such an extension when, in his judgment, the circumstances of a particular case warrant

his doing so. For any such extension the student is assessed a fee of \$5 for the first week and \$2 additional for each subsequent week in which the whole or any part of the debt remains unpaid, but the assessment in any case is not more than \$15. The assessment may be waived in any instance for reasons satisfactory to the Comptroller and the Registrar, when such reasons are set forth in a written statement.

Any tuition or other fee may be changed by the Board of Trustees to take effect at any time without previous notice.

#### OTHER FEES

*A matriculation fee* of \$10 is required of every student upon entrance into the University. This fee must be paid at the time of registration. A new two-year student who has made the required deposit of \$25 with the Treasurer does not make an additional payment of the matriculation fee, because the Treasurer draws on the deposit for this fee.

*A health and infirmary fee* of \$6 a term is required at the beginning of each term of every student. In return, a student, in case of illness, is, upon his physician's certificate, admitted to the University infirmary and receives, without charge, a bed in a ward, board, and ordinary nursing for a period not exceeding two weeks in any academic year. For such service beyond the period of two weeks, a charge of \$2 a day is made. Extra charges are made for private rooms, special food, and special nurses.

*A Willard Straight Hall membership fee* of \$5 is required at the beginning of each term. Its payment entitles the student to a share in the common privileges afforded by the operation of Willard Straight Hall, subject to the regulations made by the Board of Managers.

*A physical recreation fee* of \$2, required at the beginning of each term, entitles the student to the use of a locker, bathing facilities, and towels, in the gymnasium, the New York State Drill Hall, or the Schoellkopf Memorial Building.

*Laboratory fees* are charged to cover the cost of materials used in certain courses that require laboratory and field work. A few of the courses involve out-of-town trips for the purpose of studying marketing and field conditions. Every student must pay his own travel and living expenses on these trips. The approximate total amount of the laboratory fees and trip expenses for each of the courses for two years is as follows:

	Laboratory fees	Trip expenses
Dairy Farming .....	\$59.00	\$ 7.00
Poultry Farming .....	46.00	35.00
Fruit Growing .....	57.00	1.00
Vegetable Growing .....	62.00	15.00
Marketing of Fruits and Vegetables .....	60.00	46.00
Manufacture and Marketing of Dairy Products .....	77.00	
Commercial Floriculture .....	69.00	



## BOARD AND LODGING

The University is gradually adding to the number of residential halls for men; at present there are accommodations for about 597 students. For particulars, address the Manager of Residential Halls, Morrill Hall, Ithaca, New York.

Many private lodging houses near the University offer furnished rooms, with heat and light, at rates ranging from \$3 to \$6 a week for a single room. Before he rents a room in a private house, a student should make sure, by a personal inspection, that the sanitary arrangements of the house are good, and he should especially insist on a good fire escape. The University publishes a list of lodging houses that have been inspected and found to be satisfactory in the above respects; the list is ready for distribution on August 15. New students, if they have not already engaged rooms, are advised to come to Ithaca and do so a few days before the day set for registration. The Freshman Advisory Committee offers its help to new students, and sends them a circular letter of suggestions about September 1.

The number of private houses that offer both rooms and board is small, and many students get their meals outside the houses where they live. The University conducts a cafeteria in Willard Straight Hall, and the College of Home Economics also has a public cafeteria. There are other good cafeterias that are patronized mainly by students. In the comparatively few boarding houses, the rates for table board range upward from \$9 a week.

It is possible to obtain satisfactory board and lodging for the full college year for a total of \$500. Those with limited means will be able to save \$1 or \$2 a week from this amount by living at a somewhat greater distance from the campus.

The total necessary college expenses for the two years, exclusive of clothes and travel, may average \$600 a year. The additional amount spent for clothes and incidentals will vary with the tastes and means of the student.

## RELATION TO THE FOUR-YEAR DEGREE COURSE

Except in respect of the items of administration and curriculum specifically covered in this announcement, students in the two-year course are governed by exactly the same conditions as are students of the four-year course. They should, therefore, consult the fuller announcement of the latter course for further details of information and for the description of courses open to their election but not here listed or described.

Transfer to the degree course will be possible if all conditions of entrance are fully met and if, in addition, the record made in the first two years gives evidence of ability to carry advanced work. Students transferring will thus take most of their work in the basic sciences

between the elementary and the advanced courses in agriculture. In some cases a loss of time may result from taking the work required for the degree in this sequence, but there are compensating advantages. Full credit toward the degree will be given for work satisfactorily passed in the two-year course.

## THE TWO-YEAR CURRICULA

The two-year course has organized within it seven curricula giving preparation for the major types of farming in New York State and for certain allied businesses. Changes from these suggested curricula may be made with the consent of the Director of Resident Instruction and the department chiefly concerned. These matters may be taken up with the faculty adviser to whom the student will be assigned when he registers.

Requests for further information regarding these curricula should be addressed to the Secretary of the College of Agriculture, Roberts Hall, Ithaca, New York.

### CURRICULUM IN DAIRY FARMING

#### FIRST YEAR

First term	<i>Hours credit</i>	Second term	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression) .....	3	Extension Teaching 2 (Oral and Written Expression) .....	3
Animal Husbandry 1 (Livestock Production) .....	3	Animal Husbandry 10 (Livestock Feeding) .....	3
Agricultural Engineering 1 (Farm Mechanics) .....	3	Vegetable Crops 2 .....	3
Agricultural Engineering 40 (Farm Shop Work) .....	2	Chemistry 101 (Introductory Inorganic, Lectures) .....	3
Agricultural Economics and Farm Management 101 (Farm Records and Accounts) .....	3	Chemistry 105 (Introductory Inorganic, Laboratory) .....	3

#### SECOND YEAR

Animal Husbandry 20 (Animal Breeding) .....	3	Agricultural Economics and Farm Management 102 (Farm Management) .....	5
Animal Husbandry 30 (Health and Diseases of Animals) ....	3	Animal Husbandry 50 (Dairy Cattle) .....	3
Agricultural Economics and Farm Management 131 (Cooperative Marketing) .....	2	Agronomy 6 (Soils) .....	3
Agronomy 11 (Production of Field Crops) .....	4	Dairy Industry 2 (Testing and Inspection) .....	3
Rural Social Organization 11 (Organization and Problems of Rural Society) .....	3	Elective .....	2

## TWO-YEAR COURSES

11

### CURRICULUM IN POULTRY FARMING

#### FIRST YEAR

First term	<i>Hours credit</i>	Second term	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression) .....	3	Extension Teaching 2 (Oral and Written Expression) .....	3
Animal Husbandry 1 (Livestock Production) .....	3	Poultry Husbandry 10 (Nutrition) .....	3
Agricultural Engineering 1 (Farm Mechanics) .....	3	Pomology 1 (Fruit Growing) ..	3
Agricultural Engineering 40 (Farm Shop Work) .....	2	Chemistry 101 (Introductory Inorganic, Lectures) .....	3
Agricultural Economics and Farm Management 101 (Farm Records and Accounts) .....	3	Chemistry 105 (Introductory Inorganic, Laboratory) .....	3
Agricultural Engineering 24 (Farm concrete).....	2		

#### SECOND YEAR

Poultry Husbandry 20 (Breeds and Judging) .....	2	Agricultural Economics and Farm Management 102 (Farm Management) .....	5
Poultry Husbandry 50 (Marketing Poultry Products) .....	3	Agronomy 6 (Soils) .....	3
Agricultural Economics and Farm Management 131 (Cooperative Marketing) .....	2	Poultry Husbandry 30 (Incubation and Brooding) .....	3
Agronomy 11 (Production of Field Crops) .....	4	Poultry Husbandry 160 (Farm Management) .....	3
Rural Social Organization 11 (Organization and Problems of Rural Society) .....	3		
Poultry Husbandry 2 (Field of Poultry Husbandry) .....	1		

### CURRICULUM IN FRUIT GROWING

#### FIRST YEAR

First term	<i>Hours credit</i>	Second term	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression) .....	3	Extension Teaching 2 (Oral and Written Expression) .....	3
Botany 1 .....	3	Pomology 1 (Fruit Growing) ...	3
Agricultural Engineering 1 (Farm Mechanics) .....	3	Entomology 42 (Insect Pests)...	3
Animal Husbandry 1 (Livestock Production) .....	3	Chemistry 101 (Introductory Inorganic, Lectures) .....	3
Agricultural Economics and Farm Management 101 (Farm Records and Accounts) .....	3	Chemistry 105 (Introductory Inorganic, Laboratory) .....	3

## SECOND YEAR

Pomology 2 (Fruit Varieties) . . . . .	2	Agricultural Economics and Farm Management 102 (Farm Management) . . . . .	5
Pomology 111 (Packing and Storage for Market) . . . . .	2	Agronomy 6 (Soils) . . . . .	3
Plant Pathology 1 (Plant Diseases) . . . . .	3	Pomology 112 (Advanced Laboratory Course) . . . . .	2
Agricultural Economics and Farm Management 131 (Cooperative Marketing) . . . . .	2	Vegetable Crops 2 . . . . .	3
Agricultural Engineering 21 (Farm Engineering) . . . . .	3	Elective . . . . .	2
Elective . . . . .	3		

## CURRICULUM IN VEGETABLE GROWING

## FIRST YEAR

First term	Hours credit	Second term	Hours credit
Extension Teaching 1 (Oral and Written Expression) . . . . .	3	Extension Teaching 2 (Oral and Written Expression) . . . . .	3
Botany 1 . . . . .	3	Vegetable Crops 1 . . . . .	3
Vegetable Crops 12 (Grading and Handling) . . . . .	3	Entomology 42 (Insect Pests) . . . . .	3
Agricultural Engineering 1 (Farm Mechanics) . . . . .	3	Chemistry 101 (Introductory Inorganic, Lectures) . . . . .	3
Agricultural Economics and Farm Management 101 (Farm Records and Accounts) . . . . .	3	Chemistry 105 (Introductory Inorganic, Laboratory) . . . . .	3

## SECOND YEAR

Vegetable Crops 13 (Types and Varieties) . . . . .	3	Agricultural Economics and Farm Management 102 (Farm Management) . . . . .	5
Plant Pathology 1 (Plant Diseases) . . . . .	3	Vegetable Crops 2 . . . . .	3
Agricultural Economics and Farm Management 131 (Cooperative Marketing) . . . . .	2	Agronomy 6 (Soils) . . . . .	3
Agronomy 11 (Production of Field Crops) . . . . .	4	Poultry Husbandry 1 (Farm Poultry) . . . . .	4
Elective . . . . .	3		

## CURRICULUM IN THE MARKETING OF FRUITS AND VEGETABLES\*

## FIRST YEAR

First term	Hours credit	Second term	Hours credit
Extension Teaching 1 (Oral and Written Expression) . . . . .	3	Extension Teaching 2 (Oral and Written Expression) . . . . .	3
Botany 1 . . . . .	3	Entomology 42 (Insect Pests) . . . . .	3
Vegetable Crops 12 (Grading and Handling) . . . . .	3	Chemistry 101 (Introductory Inorganic, Lectures) . . . . .	3
Poultry Husbandry 50 (Marketing Poultry Products) . . . . .	3	Chemistry 105 (Introductory Inorganic, Laboratory) . . . . .	3
Agricultural Economics and Farm Management 121 (Accounting) . . . . .	3	Pomology 1 (Fruit Growing) or Vegetable Crops 1 . . . . .	3

\*A minimum of one additional hour must be elected during the course to fulfill the requirement of sixty hours for a certificate.

## SECOND YEAR

Vegetable Crops 13 (Types and Varieties) .....	3	Vegetable Crops 2 .....	3
Pomology 2 (Fruit Varieties)..	2	Agricultural Economics and Farm Management 102 (Farm Management) .....	5
Pomology 111 (Packing and Storage for Market) .....	2	Agronomy 6 (Soils) .....	3
Agricultural Economics and Farm Management 142 (Marketing Fruits and Vegetables) .....	3	Plant Pathology 1 (Plant Diseases) .....	3
Agricultural Economics and Farm Management 131 (Cooperative Marketing) .....	2		
Agricultural Economics and Farm Management 125 (Business Organization and Management)..	3		

CURRICULUM IN THE MANUFACTURE AND THE MARKETING OF  
DAIRY PRODUCTS\*

## FIRST YEAR

First term	<i>Hours credit</i>	Second term	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression) .....	3	Extension Teaching 2 (Oral and Written Expression) .....	3
Animal Husbandry 1 (Livestock Production) .....	3	Dairy Industry 102 (Market Milk and Milk Inspection) .....	5
Agricultural Engineering 1 (Farm Mechanics) .....	3	Dairy Industry 1 (Testing) .....	3
Chemistry 101 (Introductory Inorganic, Lectures) .....	3	Bacteriology 3 (Agricultural) ..	3
Chemistry 105 (Introductory Inorganic, Laboratory) .....	3		

## SECOND YEAR

Agricultural Economics and Farm Management 121 (Accounting) .....	3	Agricultural Economics and Farm Management 102 (Farm Management) .....	5
Dairy Industry 103 (Manufacturing) .....	5	Animal Husbandry 10 (Livestock Feeding) .....	3
Agricultural Economics and Farm Management 125 (Business Organization and Management) .	3	Dairy Industry 104 (Manufacturing) .....	5
Rural Education 110 (Introductory Psychology) .....	3	Agricultural Economics and Farm Management 143 (Marketing Dairy Products) .....	3

\*A minimum of one additional hour must be elected during the course to fulfill the requirement of sixty hours for a certificate.

## CURRICULUM IN COMMERCIAL FLORICULTURE

## FIRST YEAR

First term	<i>Hours credit</i>	Second term	<i>Hours credit</i>
Extension Teaching 1 (Oral and Written Expression) .....	3	Extension Teaching 2 (Oral and Written Expression) .....	3
Botany 1 .....	3	Botany 1 .....	3
Floriculture and Ornamental Horticulture 1 (Greenhouse Crops) .....	4	Agronomy 6 (Soils) .....	3
Chemistry 101 (Introductory Inorganic, Lectures) .....	3	Floriculture and Ornamental Horticulture 3 (Garden Flowers) .....	3
Chemistry 105 (Introductory Inorganic, Laboratory) .....	3	Agricultural Engineering 1 (Farm Mechanics) .....	3

## SECOND YEAR

Floriculture and Ornamental Horticulture 101 (Commercial)....	4	Floriculture and Ornamental Horticulture 102 (Commercial)...	4
Floriculture and Ornamental Horticulture 104 (Conservatory Plants) .....	3	Floriculture and Ornamental Horticulture 103 (Wholesaling and Retailing Flowers) .....	3
Plant Pathology 1 (Plant Diseases) .....	3	Botany 31 (Plant Physiology)..	4
Agricultural Economics and Farm Management 121 (Accounting) .....	3	Plant Breeding 103 .....	3
Agricultural Economics and Farm Management 127 (Business Law) .....	2	Elective .....	2

## DESCRIPTION OF COURSES

The courses described in the following pages are those required in one or more of the preceding curricula. With the exception of two courses in chemistry and one in veterinary science, they are all given by members of the staff of the College of Agriculture.

The administrative units of the College in charge of the various subject-matter fields are called *departments*. There are several departments whose work is not required in the two-year curricula now organized, but the courses offered by them may be elected as time permits and if the prerequisites are met. For the description of these offerings, reference should be made to the announcement of the four-year courses.

## AGRICULTURAL ECONOMICS AND FARM MANAGEMENT

**101. Farm Records and Accounts.** First term. Credit three hours. Lectures, T Th 8. Caldwell 100. Laboratory: M or T 1.40-4, East Roberts 232. Assistant Professor HARRIOTT.

Farm inventories; cash accounts; income-tax reports; single-enterprise cost accounts; complete farm cost accounts; farm maps; other farm records; interpretation of the results of cost accounts and their application in the organization and management of farms. Fee for materials furnished, \$3.

102. **Farm Management.** Second term. Credit five hours. Lectures, M W F 10. Farm Management Building 102. Laboratory, Th or F 2-4. Farm Management Building 102. On days when farms are visited, laboratory work may last longer than two and one-half hours. Professor W. I. MYERS.

Farming as a business; types of farming; balance of business; size of business; rates of production; farm layout; building arrangement; labor management; machinery; marketing; ways of starting to farm; forms of tenure and leases, choosing and buying a farm; use of capital and credit; planning, organization, and management of specific farms. Four half-day field trips are taken during April and May to visit farms in near-by regions. Fee for materials furnished, \$3.

121. **Accounting.** First term. Credit three hours. Lectures, T Th 9. Caldwell 100. Laboratory: T 1.40-4, Farm Management Building 102; or W 1.40-4, East Roberts 223. Assistant Professor CATHERWOOD.

The fundamentals of accounting; the analysis and recording of ordinary business transactions; the preparation of financial statements; the interpretation and use of accounting information. These are developed mainly in terms of the merchandising business. Fee for materials furnished, \$3.

125. **Business Organization and Management.** First term. Credit three hours. Lectures, M W F 11. Caldwell 100. Assistant Professor CATHERWOOD.

An introduction to business principles and practices. Forms of ownership; methods of organization; incorporation; financing; internal organization; problems met by each of the important departments of a business; sales management; measuring the efficiency of the business. Fee for materials furnished, \$2.

127. **Business Law.** First term. Credit two hours. Lectures, T Th 12. Farm Management Building 102. Mr. ALLAN H. TREMAN.

Consideration is given chiefly to legal problems of particular interest to persons who expect to engage in business, including contracts, liens, mortgages, and negotiable instruments; ownership and leasing of property; wills, estates; inheritance taxation; and other practical problems.

131. **Cooperative Marketing.** First term. Credit two hours. Lecture, Th 11. Laboratory, Th 1.40-4. East Roberts 232. Professor W. I. MYERS.

Business management of cooperative organizations. The cooperative corporation; legal basis of cooperative business; types of cooperative organizations; contracts; relations to members. Primary consideration is given to a study of some of the important factors affecting the efficiency of cooperative business. Fee for materials furnished, \$2.

142. **Marketing (Fruits and Vegetables).** First term. Credit three hours. Lectures, M W 9. Farm Management Building 102. Laboratory, W 1.40-4. Farm Management Building 102. Professor RASMUSSEN.

A study of the economic factors involved in the marketing of fruits and vegetables. Regional and seasonal competition; areas of distribution; methods of handling; costs of marketing; types of marketing organizations; sales methods; transportation and carrier services; produce law and methods of credit rating; terminal problems. Fee for materials furnished, \$3.

143. **Marketing (Dairy Products).** Second term. Credit three hours. Lectures, T Th 10. Laboratory, T 1.40-4. Farm Management Building 102. Professor SPENCER.

Economic aspects of the distribution of the more important dairy products from producer to consumer, with special emphasis on market milk. One all-day trip will be arranged. Fee for materials furnished, \$3.

## AGRICULTURAL ENGINEERING

1. **Farm Mechanics.** First or second term. Credit three hours. Planned to give basic training for understanding the farm applications of mechanical and

electrical methods and appliances. Lectures: first term, T Th 9, second term, T Th 10. Dairy Building 119. Practice, M T or W 1.40-4. Agricultural Engineering Laboratories. Professor RILEY and Messrs. WRIGHT and EASTMAN.

A course intended to develop ability to think and to reason in terms of mechanical and electrical devices. The machines used are the following: single-cylinder gas engine, grain binder, pumps, spray machinery, domestic water-supply systems, and electrical equipment. Laboratory fee, \$2.

21. **Farm Engineering.** First or second term. Credit three hours. Lectures: first term, M W 9; second term, M W 10. Dairy Building 119. Practice, M or T 1.40-4. Dairy Building, Fourth Floor, and field. Professor McCURDY.

A study of the practical solution of the elementary problems involved in connection with surveying and mapping the farm; leveling for farm drainage and water supply; laying out building foundations. Farm drainage, concrete, and sewage disposal are studied. Laboratory fee, \$2.

24. **Farm Concrete.** First term. Credit two hours. Lecture, T 11. Dairy Building 119. Practice, Th or F 1.40-4. Agricultural Engineering Laboratories. Professor McCURDY.

A study of the selection, testing, and proportioning of the materials used in making concrete; building forms; mixing, placing, finishing, and curing concrete; waterproofing; inspection of local sand and gravel banks and some local concrete structures. Laboratory fee, \$1.

40. **Farm Shop Work.** First and second terms. Credit two hours. First term, any four hours, M T Th 1.40-4; second term, T Th 1.40-4. Agricultural Engineering Laboratories. Assistant Professor ROEHL.

This course includes woodworking, with special jobs in carpentry, cabinet making, and fitting tool handles; metal working, with special jobs in saw fitting, tool grinding, cold-metal working, sheet-metal working, selecting and attaching builders' hardware; forge work, with special jobs in shaping and tempering tools; painting, with special jobs in repairing and refinishing furniture; harness repairing; problems in the use of rope. Mechanical drawing and free-hand sketching are done as they supplement the work. Laboratory fee, \$3.

## AGRONOMY

6. **Soils.** Second term. Credit three hours. Lectures and recitations, M T Th 11. Caldwell 143. One laboratory practice. Caldwell 49. Professor BUCKMAN.

A course dealing with the composition, properties, and plant relations of soils, with particular reference to the practical use of lime, fertilizers, and other means of maintaining soil fertility. Laboratory fee, \$3.

11. **Production of Field Crops.** Second term. Credit four hours. Lectures, M W F 10. Caldwell 100. One laboratory practice. Caldwell 250. Mr. GOODING.

A course dealing with the principal field crops of the United States, special emphasis being placed upon those grown in the Northeastern States. Cultural methods, crop rotations, fertilizer practices, soil and climatic adaptation, and the better varieties of the important crops, are considered. Laboratory fee, \$3.

## ANIMAL HUSBANDRY

1. **Livestock Production.** First term. Credit three hours. Lectures, W F 10. Animal Husbandry Building A. One laboratory period, M 10-12.20, W 11-1, Th 1.40-4, or F 1.40-4. Judging Pavilion. Professors HARPER and SAVAGE, Assistant Professor HINMAN, and Mr. J. P. WILLMAN.

Introduction to types, breeds, judging, and management of livestock. Laboratory fee, \$2.



10. **Livestock Feeding.** Second term. Credit three hours. Prerequisite, course 1. Lectures, T Th 9. Animal Husbandry Building A. One laboratory period, M 1.40-4, T 10-12.20, W 11-1, or Th 1.40-4. Professor MORRISON and Messrs. TURK and \_\_\_\_\_.

The feeding of farm animals, including the general basic principles, feeding standards, the computation of rations, and the composition and nutritive value of livestock feeds.

20. **Animal Breeding.** First term. Credit three hours. Prerequisite, course 1. Lectures, M W 9. Recitation, demonstration, or laboratory, T or Th 1.40-4. Animal Husbandry Building B and Animal Breeding Laboratory. Assistant Professor HINMAN and Mr. METZGER.

A general outline of the principles of heredity as applied to the breeding of farm animals. Origin and formation of breeds. Inheritance as applied to animal production. Elementary genetics. Laboratory fee, \$2.

30. **Health and Diseases of Animals.** First term. Credit three hours. Not open to freshmen or to those who have had no courses in animal husbandry. Lectures, M W F 11. Veterinary College. Professor BIRCH.

The course is designed to give the student a clear conception of the causes and nature of the diseases of animals, with suggestions for their prevention. Special attention is given to the methods of preventing the spread of the infectious and epizootic diseases. Such information as is practicable is given for the treatment of slight injuries and for first aid in emergencies.

50. **Dairy Cattle.** Second term. Credit three hours. Prerequisite, course 1. Lectures, T Th 10. Animal Husbandry Building A. Practice, M or Th 1.40-4. Animal Husbandry Building A and Judging Pavilion. Professor SAVAGE, Dr. HARRISON, and Messrs. CRAWFORD and WORK.

Origin, history, and development of the breeds of dairy cattle; methods of breeding; economy of feeding; production of milk; care, management, and sanitation of the dairy herd. Practice in judging, scoring, tracing pedigrees, and keeping records. Laboratory fee, \$2.

## BACTERIOLOGY

3. **Agricultural Bacteriology.** Second term. Credit three hours. Prerequisite, Chemistry 101. Lectures, M W F 11. Dairy Building 119. Assistant Professor STARK.

The elements of bacteriology, with a survey of the relation of microorganisms to agriculture.

## BOTANY

1. **General Botany.** First and second terms. Credit three hours a term. Lectures, T Th 9 or 11. Plant Science 233. Laboratory, one period of two and one-half hours. Plant Science 240, 242, 262. Professor PETRY, Messrs. LAUBENGAYER, THOMAS, SCHAPPELLE, SNELL, and PALMQUIST, Misses CREIGHTON and ALMSTEDT, and others.

A survey of the fundamental facts and principles of plant life. The work of the first term deals with the structures and functions of the higher plants, with special emphasis on nutrition. The work of the second term traces the evolution of the plant kingdom, as illustrated by representatives of the principal groups, and concludes with a brief introduction to the principles of classification of the flowering plants. Laboratory fee, \$3.50 a term.

31. **Plant Physiology.** First or second term. Credit four hours. Prerequisite, course 1. Lectures, T Th 10. Plant Science 143. Laboratory, T Th 1.40-4 or W F 1.40-4. Plant Science 227. Professor KNUDSON or Professor O. F. CURTIS, Assistant Professor HOPKINS, and Messrs. CLARK and FLEISCHER.

This course is designed to acquaint the student with the general principles of plant physiology. Topics such as water relations, photosynthesis, translocation, digestion, respiration, mineral nutrition, growth, and reproduction are studied in detail. In both laboratory and recitations emphasis is placed on discussion of the principles taught and their applications. Laboratory fee, \$4; deposit, \$3.

### DAIRY INDUSTRY

1. **Introductory Dairy Science.** First or second term. Credit three hours. Prerequisite, Chemistry 101 and 105. Lectures, T Th 11. Dairy Building 218. Laboratory: first term, M 1.40-4.30 or S 9-12; second term, M or Th 1.40-4.30. Dairy Building 209. Messrs. HERRINGTON and SOLIS.

The scientific and practical aspects of milk, and a survey of the dairy industry. Especial attention is given to the composition of milk and its physical and chemical properties, quantitative tests for fat and other constituents, and qualitative tests for preservatives and adulterants. Laboratory fee, \$7.

2. **Dairy Testing and Inspection.** Second term. Credit three hours. Open only to students in the Veterinary College and non-degree students in Agriculture. Lecture and Laboratory practice, S 8-1. Dairy Building 218. Professors ROSS and GUTHRIE.

A special course in milk testing and dairy inspection adapted to the needs of students in veterinary science. Laboratory fee, \$7.

102. **Market Milk and Milk Inspection.** Second term. Credit five hours. Must be preceded or accompanied by course 1. Lecture and laboratory practice, T Th 1-6. Dairy Building 218 and 146. Professor ROSS and Assistant Professor AYRES.

Attention is given to the production and the control of market milk, with special reference to its improvement; milk as food; shipping stations; transportation and sale; pasteurizing; standardizing; clarification; certified milk; milk laws; commercial buttermilk; methods of cooling; harvesting and storage of ice; duties of milk inspectors; apparatus and buildings. The practice includes visits to dairies in the vicinity of Ithaca. A required two-day inspection trip in the neighboring counties may be arranged. Laboratory fee, \$10.

103. **Milk-Products Manufacturing.** First term. Credit five hours. Prerequisite, course 1. Lectures, recitations, and laboratory practice, T Th 1-6. Dairy Building 120. Professor GUTHRIE and Assistant Professor AYRES.

The principles and practice of making butter, cheese, and casein, including a study of the physical, chemical, and biological factors involved. Consideration is given also to commercial operations and dairy-plant management. Laboratory fee, \$10.

104. **Milk-Products Manufacturing.** Second term. Credit five hours. Prerequisite, course 1; should be preceded or accompanied by course 101. Lectures, recitations, and laboratory practice, F 1-6 and S 8-1. Dairy Building 120. Assistant Professor AYRES.

The principles and practice of making condensed and evaporated milks, milk powders, ice cream, and by-products, including a study of the physical, chemical, and biological factors involved. Laboratory fee, \$10.

### ENTOMOLOGY

42. **Elementary Economic Entomology.** Second term. Credit three hours. Lectures, T Th 9. Roberts 392. Practical exercise, T 1.40-4. Roberts 392. Professor HERRICK and Mr. HORSFALL.

The course includes lectures, conferences, and discussions, on the life histories and habits of injurious insects, together with methods of control. The practical exercises include a study of the more important insecticides and of as many of the common pests as time permits. Laboratory fee, \$2.

## EXTENSION TEACHING

1. **Oral and Written Expression.** First term. Credit three hours. Lectures and practice, M W F 9. Roberts 131. Criticism, by appointment, daily 8-1. Professor EVERETT and Assistant Professor PEABODY.

Practice in oral and written presentation of topics in agriculture, with criticism and individual appointments on the technic of public speech. Designed to encourage interest in public affairs, and, through demonstrations and the use of graphic material and other forms, to train for effective self-expression in public. Special training is given to competitors for the Eastman Prizes for Public Speaking and the Farm Life Challenge contest. In addition, some study is made of representative works in English literature.

2. **Oral and Written Expression.** Second term. Credit three hours. Continuation of course 1. M W F 9. Roberts 131. Professor EVERETT and Assistant Professor PEABODY.

Part of the work of this course is a study of parliamentary practice.

## FLORICULTURE AND ORNAMENTAL HORTICULTURE

1. **Principles and Methods of the Propagation and Management of Greenhouse Crops.** First term. Credit four hours. Lectures, M W F 10. Plant Science 37. Practice, T 1.40-4. Plant Science 15 and greenhouses. Professor WHITE.

An elementary course in commercial flower growing intended to acquaint students with the scientific principles and floricultural methods governing the propagation and culture of flowers under glass. The construction, heating, and equipment of greenhouses is also studied. Laboratory fee, \$2.50.

3. **Garden Flowers.** Second term. Credit three hours. Prerequisite, course 11. Lectures, T Th 8. Registration limited to fifteen students. Plant Science 37. Lectures, discussions, and practice, F 1.40-4. Plant Science 15, greenhouses, and gardens. Miss MINNS.

A study of the identification and culture of annuals, herbaceous perennials, and garden roses. The aim is to give the student an intimate knowledge of those forms of annual and herbaceous plants that may be used in garden planting, either on home grounds or in public parks. An excellent collection of plant material is available for demonstration work in this course. All members of the class are required to participate in an excursion to the Thompson estate at Canandaigua, on May 27. Laboratory fee, \$2.

101. **Commercial Floriculture.** First term. Credit four hours. No student will be admitted to the course who has not had at least a half year of practical experience in a greenhouse. Lectures and recitations, M W F 10. Plant Science 22. Practice, F 1.40-4. Greenhouses. Mr. Post.

Studies in the culture of commercial florists' crops. Methods of packing, shipping, and marketing are considered. The class will participate in a required excursion to Utica and Rome on October 28. Laboratory fee, \$2.

102. **Commercial Floriculture.** Second term. Credit four hours. Lectures and recitations, M W F 10. Plant Science 37. Practice, F 1.40-4. Greenhouses. Mr. Post.

A continuation of course 101, with methods of culture of commercial crops not previously considered. Students taking these courses are expected to work on commercial ranges during one semester and vacations. The class will participate in a required excursion to Rochester on March 17. Laboratory fee, \$2.

103. **Wholesaling and Retailing Flowers.** Second term. Credit three hours. Lectures, T Th 9. Plant Science 37. Practice, M 1.40-4. Plant Science 22. Mr. Post.

This course is planned with the view of giving students a thorough knowledge of methods of retail-store management, store equipment, salesmanship, business methods, delivery, decorating for all functions, flower arrangement and the making of designs, methods of conducting cooperative flower exchanges, and wholesale markets. Other topics of a like nature are discussed. There will be a required trip to Rochester, to visit a wholesale establishment and retail stores, on May 3. Laboratory fee, \$5.

104. **Conservatory Plants.** First term. Credit three hours. Lectures, T Th 11. Plant Science 37. Laboratory, W 1.40-4. Plant Science 15. Mr. POST.

Designed for students interested in work on private estates or in parks. A study of such tropical and subtropical foliage and flowering plants as are used for the ornamentation of glasshouses of decorative type. Laboratory fee, \$1.

### PLANT BREEDING

103. **Plant Breeding.** Second term. Credit three hours. Lectures, T Th 8. Plant Science 143. Lecture and practice, S 8-10. Plant Science 146. Professor C. H. MYERS.

A discussion of the principles primarily concerned in plant breeding and the development of methods of breeding for different types of plants. Lectures are supplemented by periods in the laboratory, greenhouses, and experimental fields to acquaint the student with the technic of hybridization, selection, seed production, and distribution. The course is intended to be of value to those interested in plant production, to seed growers, to county agents, and to teachers of agriculture in secondary schools.

### PLANT PATHOLOGY

1. **General Plant Pathology.** First or second term. Credit three hours. Lecture, W 8. Plant Science 336. Practice, first term, any two periods, W Th F 1.40-4 or S 10.30-12.50; second term, W F 1.40-4. Plant Science 341 and 343. Professor WHETZEL, Assistant Professor WELCH, and Messrs. DAVIS, BLACK, WINTERS, and THOMPSON.

A fundamental course treating of the nature, cause, and control of plant diseases, illustrated by studies of the commoner diseases of cultivated crops. Laboratory fee, \$4.50; breakage deposit, \$3.

### POMOLOGY

1. **General Pomology.** Second term. Credit three hours. Lectures, T Th 8. Plant Science 233. Laboratory, M T Th or F 1.40-4. Plant Science 114. Professor CARRICK and Mr. LEVERING.

A study of the general principles and practices in pomology; propagation and care of orchard trees and small fruits; harvesting, storing, and marketing fruit; practical work in budding, grafting, pruning, and planting; study of varieties, growth, and fruiting habits.

2. **Fruit Varieties.** First term. Credit two hours. Lecture or laboratory, T Th 8-10. Plant Science 107. Professor MACDANIELS.

A study of the most important varieties of apples, pears, peaches, plums, grapes, and small fruits from the standpoint of their identification, growth, characters, regional adaptation, season of ripening, storage quality, and other matters of a similar nature. A part of the time is given to the judging of exhibition fruit, and the Farm and Home Week fruit exhibit is set up by the students in this course.

111. **Packing and Storage of Fruit for Market.** First term. Credit two hours. S 8-1. Plant Science 114 and the packing house. Professor CARRICK.

The important factors in harvesting and handling fruit that affect quality and marketability are studied. Particular emphasis is placed on packing apples, in barrels, baskets, boxes, and other retail packages, but the work covers also such fruits as peaches, plums, pears, and grapes, in so far as these are available. The effect of grades and packages on distribution and marketing is fully discussed, and consideration is given to some of the problems of market inspection. The principles and practices of common, cold, and freezing storage are considered.

112. **Advanced Laboratory Course.** Second term. Credit two hours. S 8-1. Plant Science 107. Professors HEINICKE, CARRICK, and MACDANIELS.

This course is designed to give more extended practice in the various orchard operations than can be given in course 1. Special attention is given to problems of pruning, tree surgery, bracing, orchard soil selection and management, and pest control.

## POULTRY HUSBANDRY

1. **Farm Poultry.** Second term. Credit four hours. Lectures and recitations, M W F 9. Poultry Building 375. Laboratory, Th or F 1.40-4 or S 8-10.20. Poultry Building 300. Professors RICE and HEUSER, Assistant Professors HALL and BRUNETT, and Messrs. BRUCKNER, DAVISSON, and VAN WAGENEN.

A brief general course dealing with the practical application of the principles of poultry husbandry to general farm conditions, designed for students not intending to take the specialized poultry courses.

2. **The Field of Poultry Husbandry.** First term. Credit one hour. Lecture, W 9. Poultry Building 325. Professor RICE.

A study of the general field of poultry husbandry for students specializing in the department. About one-fourth of the term is devoted to a study of the industry, its growth, magnitude, and distribution, and factors tending to limit or expand its growth. One-fourth of the term is devoted to a study of the opportunities in the field of poultry husbandry, and the remainder to a consideration of the national poultry organizations and national poultry problems.

10. **Poultry Nutrition.** Second term. Credit three hours. Lectures, T Th 9. Practice, Th 1.40-4. Poultry Building 325. Professor HEUSER and Research Assistant Professor NORRIS.

The principles of poultry nutrition, including methods of feeding for egg production, rearing and fattening; the study of feeds suitable for poultry; the compounding of rations; and practice in poultry-feeding management.

20. **Breeds of Poultry, and Judging.** First term. Credit two hours. Lecture or recitation, F 11. Poultry Building 325. Laboratory, Th or F 1.40-4. Breed Observation House. Assistant Professor HALL.

The origin, history, and classification of breeds of domestic poultry; judging the principal breeds for fancy and production points by score-card and comparison methods; fitting fowls for exhibition. A required trip is made to one of the leading poultry shows the second or third week of January.

30. **Poultry Incubation and Brooding.** Second term. Credit three hours. Lecture, F 11. Laboratory, F 1.40-4; also practice, reporting three times daily, including Sunday, for approximately six weeks, hours to be arranged by appointment. Poultry Building 325. Mr. DAVISSON.

Principles and practice of incubation and brooding. Daily practice for three weeks in operating incubators and for three weeks in the management of a brooder and a flock of chickens.

50. **Marketing Poultry Products.** First term. Credit three hours. Lecture or recitation, M W 11. Poultry Building 325. Laboratory, M or T 1.40-4. Poultry Building 174. Mr. VAN WAGENEN.

Preparation of poultry and eggs for market and study of marketing problems. A weekly market news letter is prepared by students in the class. A class trip to New York City markets is required of all students. A three-day study of marketing in all its phases is made on this trip, which immediately follows the Christmas recess. The total necessary expense is about \$35.

**160. Poultry Farm Management.** Second term. Credit three hours. Lectures, T Th 10. Laboratory, W 140-4. Poultry Building 325. Professor RICE and Extension Professor BOTSFORD.

The principles of farm management as applied to poultry farming. Selection of the farm; the farm layout, a study of farm records, and factors influencing returns.

#### RURAL EDUCATION

**110. Psychology: An Introductory Course.** First or second term. Lectures, M W F 10. Assistant Professor WINSOR.

#### RURAL SOCIAL ORGANIZATION

**11. Organization and Problems of Rural Society.** First term. Credit three hours. Lectures, reports, and discussions. M W F 10. Fernow 308. Assistant Professor ANDERSON.

A study of the different groups and organizations characteristic of rural society, their relations to one another and to the individual, including such topics as public health, the school, the church, the family, recreation, the standard of living, local government, and community organization. Students make studies of their own communities and thus apply the work of the course to concrete local situations.

#### VEGETABLE CROPS

**1. Vegetable Crops.** Second term. Credit three hours. Lectures, W F 11. East Roberts 222. Laboratory, Th or F 1.40-4. Vegetable greenhouses and East Ithaca gardens. Professor WORK.

A general study of the principles of vegetable growing and handling, giving a comprehensive survey of the industry. Economic importance, geography, cultural requirements, and marketing, storage, and uses, of the important vegetables. A one-day trip is required; approximate expense, \$4. Laboratory fee, \$2.

**2. Special Vegetable Crops.** Second term. Credit three hours. Lectures, T Th 10. East Roberts 222. Laboratory, T or W 1.40-4. East Roberts. Professor HARDENBURG.

A study of those crops that are grown in New York principally as cash crops and for manufacture, including potatoes, field beans, field cabbage, and the important canning crops, peas, tomatoes, sweet corn, and snap beans. About one-third of the term's work is devoted to potatoes. A visit to near-by bean elevators is required; approximate expense, \$1. Laboratory fee, \$2.

**12. Grading and Handling Vegetable Crops.** First term. Credit three hours. Lectures, T Th 10. East Roberts 222. Laboratory, T or Th 1.40-4. East Roberts. Professor WORK.

Geography of vegetable production and distribution, factors of environment, culture, and handling as affecting quality, condition, and marketing of vegetable crops. Harvesting, grades and grading, packing, shipping-point and terminal-market inspection, transportation, refrigeration, and storage are discussed with reference to the various crops. A two-day trip is required; approximate cost, \$10. Laboratory fee, \$2.

**[113. Types and Varieties of Vegetables.** First term. Credit three hours.

Prerequisite course 1 or 2, or permission to register. Given in alternate years. Professor WORK.] Not given in 1932-33.

One week of laboratory work preceding the beginning of regular instruction is required. The department should be notified of intention to register in this course. This course deals with the taxonomy, origin, history, characteristics, adaptations, identification, classification, exhibition, and judging, of kinds and varieties of vegetables. Attention is given also to the characteristics, production, and handling of vegetable seeds. The leading varieties of the vegetable crops are grown each year. The value of the course depends to a great extent upon gaining an acquaintance with the plant material as it grows. For this reason, part of the laboratory work is done in the gardens prior to and during registration week. Laboratory fee, \$2.

#### COURSES IN OTHER COLLEGES

101. **Introductory Inorganic Chemistry.** First or second term. Credit three hours. Lectures: two sections, M W F 11 or T Th S 11. Baker. Main Lecture Room. Professor BROWNE with Assistant Professor LAUBENGAYER.

105. **Introductory Inorganic Chemistry.** First or second term. Credit three hours. Recitation, one hour a week, to be arranged. Laboratory sections, M W 8-10.20; M F 1.40-4; T Th 1.40-4; W 1.40-4; S 8-10.20. Baker 150. Professor BROWNE, Assistant Professor LAUBENGAYER, and assistants.

10. **The Physiology of the Nutrition and Secretion of the Domesticated Animals.** First or second term. Credit three hours. Lectures: first term, M W F 9; second term, M W F 10. Veterinary College. Professor HAYDEN.

