Faculty

ADMINISTRATION

Edmund Ezra Day, Ph.D., LL.D., President of the University.
William Irving Myers, Ph.D., Dean of the College of Agriculture and Professor of Farm Finance.
Anson Wright Gibson, M.S., Director of Resident Instruction and Professor in Personnel Administration.
Lloyd R. Simons, B.S., Director of Extension and Professor in Extension Service.
Carl Edward Frederick Guterman, Ph.D., Director of Research, Director of the Cornell University Agricultural Experiment Station, and Professor of Plant Pathology.
Arthur John Heinicke, Ph.D., Director of the New York State Agricultural Experiment Station at Geneva and Professor of Pomology.
John Parker Hertel, Ph.D., Professor in Personnel Administration and Secretary of the College.
Howard Styring Tyler, Ph.D., Professor in Personnel Administration in charge of vocational guidance and placement.
Leigh H. Harden, M.S., Associate Professor in Personnel Administration in charge of admissions.
Whiton Powell, Ph.D., Professor of Business Management, and Librarian.
Ralph Hicks Wheeler, B.S., Director of Finance, Assistant Treasurer of the University, and Professor in Extension Service.
Arthur Howard Peterson, M.A., Professor in Business Administration and Associate Director of Finance.

STAFF OF INSTRUCTION

Richard Conley Andreasen, B.S., Assistant in Floriculture.
Joseph Benoit Begin, B.S., Assistant in Ornamental Horticulture.
Damon Boynton, Ph.D., Professor of Pomology.
Nyle C. Brady, Ph.D., Assistant Professor of Agronomy.
Robert Webster Bratton, Ph.D., Associate Professor of Animal Husbandry.
Jacob Herbert Bruckner, Ph.D., Professor of Poultry Husbandry.
Max Edwin Brunk, Ph.D., Associate Professor of Marketing.
Daniel Grover Clark, Ph.D., Professor of Botany.*
John Farnsworth Cornman, Ph.D., Assistant Professor of Ornamental Horticulture.
Otis Freeman Curtis, Ph.D., Professor of Botany.
Lawrence Bryce Darrah, Ph.D., Associate Professor of Marketing.
Lloyd Howell Davis, M.S.A., Assistant Professor of Extension Teaching.
Herrell Franklin DeGraff, Ph.D., Professor of Land Economics.
Louis James Edgerton, Ph.D., Associate Professor of Pomology.
Raymond Thomas Fox, B.S., Assistant in Floriculture.
Chester Higby Freeman, M.S.A., Assistant Professor of Extension Teaching.

* On leave fall term.

Marvin David Glock, Ph.D., Professor of Rural Education.
Harold Ellsworth Gray, Ph.D., Assistant Professor of Agricultural Engineering.
Goldan Orlando Hall, Ph.D., Professor of Poultry Husbandry.
Earle Volcart Hardenburg, Ph.D., Professor of Vegetable Crops.
Richard Wilson Harris, M.S., Assistant in Pomology.
John Daniel Hartman, Ph.D., Professor of Vegetable Crops.
Herbert Bertsch Hartwig, Ph.D., Professor of Field Crops.
Glenn Wilbur Hedlund, Ph.D., Professor of Business Management.
Gustave Frederick Heuser, Ph.D., Professor of Poultry Husbandry.
Burton Aaron Jennings, B.S., Professor of Agricultural Engineering.
George Clarence Kent, Ph.D., Professor of Plant Pathology.
Lewis Knudson, Ph.D., Professor of Botany.
Anton Kofranek, B.S., Assistant in Floriculture.
Robert Edwin Lee, B.S., Instructor in Floriculture.
Francis Asbury Lueder, jr., B.S., Instructor in Extension Teaching.
Laurence Howland MacDaniels, Ph.D., Professor of Horticulture.
Richard Pell March, M.S., Instructor in Dairy Industry.
John Ivan Miller, Ph.D., Professor of Animal Husbandry.
Arthur Leslie Neal, Ph.D., Associate Professor of Biochemistry.
Loren Clifford Petry, Ph.D., Professor of Botany.
Joseph Pullman Porter, B.S., M.S.A., M.L.D., Associate Professor of Ornamental Horticulture.
Kenneth Post, Ph.D., Professor of Floriculture.
Alfred M. S. Pridham, Ph.D., Associate Professor of Ornamental Horticulture.
Marius Peter Rasmussen, Ph.D., Professor of Marketing.
Loris Henry Schultz, Ph.D., Assistant Professor of Animal Husbandry.
Cecil D. Schutt, Instructor in Animal Husbandry.
John Daley Shaul, M.S., Assistant in Dairy Industry.
Sedgwick Eugene Smith, Ph.D., Associate Professor of Animal Husbandry.
Robert Mumford Smock, Ph.D., Professor of Pomology.
William Enoch Snyder, Ph.D., Associate Professor of Ornamental Horticulture.
Clifford Nicks Stark, Ph.D., Professor of Bacteriology.
George William Trimberger, Ph.D., Associate Professor of Animal Husbandry.
Kenneth Leroy Turk, Ph.D., Professor of Animal Husbandry.
Leon John Tyler, Ph.D., Professor of Plant Pathology.
Masami Uota, M.S., Assistant in Pomology.
Eyvind Bernard Wahlgren, M.S., Assistant Professor of Agricultural Engineering.
Jeremiah James Wanderstock, Ph.D., Assistant Professor of Animal Husbandry.
Stanley Whitson Warren, Ph.D., Professor of Farm Management.
Thomas Cobb Watkins, Ph.D., Associate Professor of Economic Entomology.
Donald Stuart Welch, Ph.D., Professor of Plant Pathology.
John Peter Willman, Ph.D., Professor of Animal Husbandry.
Paul Work, Ph.D., Professor of Vegetable Crops.

New York State College of Agriculture
Two-Year and One-Year Courses

The New York State College of Agriculture is maintained by the State as one of four state colleges or schools within Cornell University. It is equipped with a staff and facilities to teach resident students, to make investigations in all phases of agriculture and the underlying sciences, and to disseminate 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 placed at the disposal of the College by Cornell University.

GENERAL INFORMATION

THE COURSES AVAILABLE

The information contained in this announcement relates to the two-year courses and a one-year course in dairy manufacturing and marketing. The two-year courses 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 one-year course is chiefly for those who have had some experience in the dairy industry and want training for work in the manufacturing and marketing aspects of it. The College offers, in addition, 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 and one-year courses, candidates must offer:

Fifteen units acceptable to Cornell University in subjects credited by the University of the State of New York toward a state diploma, or in the case of applicants whose secondary-school training has been out-

side New York State, the equivalent by school certificates. It is recommended that at least 1 unit shall be in mathematics. English, 4 years, is counted as 3 units.

Approximately one year of practical experience on a farm or in a business related to the curriculum to be followed.

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.

THE APPLICATION FOR ADMISSION

Candidates for admission should address the Director of Admissions, Administration Building, Ithaca, New York, stating that they desire to enter one of the two-year courses or the one-year course in dairy manufacturing and marketing in the College of Agriculture. This should be done as early as possible, because it often takes considerable time to procure the necessary credentials.

CERTIFICATE ON COMPLETION OF COURSE

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

RELATION TO FOUR-YEAR COURSE

Except in respect to the items of administration and curriculum specifically covered in this announcement, students in these courses are governed by exactly the same conditions as are students of the four-year course. They should, therefore, consult the 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 at the end of one of these curricula for those who have given evidence of ability to carry advanced work. Students who qualify for such transfer will not be required to offer any further entrance credit. The transfer is possible solely on a basis of the record and on completion of the curriculum. The record must be considerably better than the average. Students who transfer from the two-year to the four-year course are given full credit toward the degree for work satisfactorily passed in the two-year or one-year course.

Two-year and one-year students are registered as special students and are not eligible to represent the University in intercollegiate athletics.

EXPENSES

TUITION

Tuition is free to two-year and one-year students in the New York State College of Agriculture, who at the time of their admission 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 $150 a 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, graduate or undergraduate, except as hereinafter provided, who fails to pay his tuition, fees, and other indebtedness or if entitled to free tuition fails to claim the same at the Treasurer's office and pay his other fees, within the time prescribed by the University is thereby dropped from the University. When in his judgment the circumstances in a particular case so warrant, the Treasurer may allow an extension of time to complete payments. For such extension, the students will be assessed a fee of $2. A financial reinstatement fee of $5 will be assessed any student who is permitted to continue or return to classes after being dropped from the University for default in payments. For reasons satisfactory to the Treasurer and the Registrar, which must be presented in writing, the above assessment may be waived in any individual case.

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 deposit of $25 must be made after the applicant has received notice of provisional acceptance. Of this deposit, $13 is used as a matriculation fee; $12 is used as a guaranty fund to be returned, less any indebtedness to the University, upon permanent withdrawal or graduation.

A deposit is required for a uniform, payable at registration in the first term, in the Elementary Course in Military Science and Tactics. Most of this deposit is returned as earned uniform allowance upon completion of the Elementary Course.

A health and infirmary fee of $15 a term is required at the beginning of each term of every student. For a statement of the privileges

given in return for this fee, read what is said about the Student and Infirmary in the *General Information* booklet.

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 $5, required at the beginning of each term, entitles the student to the use of a locker, bathing facilities, and towels, in the gymnasium, Barton Hall, or the Schoellkopf Memorial Building.

A University administration and endowed college laboratory fee of $14 a term is required of every student in the state colleges at the beginning of each term.

A laboratory and library fee of $11.50 a term is required of every student in the College of Agriculture at the beginning of each term to cover the cost of materials used in laboratory and field work and for the use of the library. A few courses involve out-of-town trips. The student must pay his own travel and living expenses on those trips.

A student activities fee of $1 a term is required of every student to provide funds for worthy student organizations as approved by the Board of Trustees.

LIVING ACCOMMODATIONS

FOR MEN

Approximately 1800 spaces are available in the men's Residential Halls for the college year 1949–50. These are in both temporary and permanent dormitories, and accommodate one, two, or three persons. All rooms are completely furnished, including bedding and bed linen. The range of prices in the temporary units is from $166 to $218 a year; in the permanent units, from $225 to $323 a year. Application for assignment to space in the men's Residential Halls should be addressed to the Manager of Residential Halls, Administration Building, Cornell University, Ithaca, New York.

No dining rooms are operated in the men's Residential Halls, but meals are obtainable at any of the cafeterias or dining rooms on the campus; or in the restaurants and cafeterias within the city. From $12 to $14 a week is the minimum allowance recommended for meals, and many students spend more than that.

Off-campus housing may be obtained in private homes and rooming houses. While the most of these are on East Hill and adjacent to the campus, some are down town. Prices of off-campus accommodations range, in general, from $6 to $8 weekly for single rooms, and from $10 to $14 weekly for double rooms. The number of privately owned

homes that offer both room and board is few, and the majority of students utilize the same eating places as outlined for use of men living in Residential Halls.

The University anticipates the publication about August 1 of a list of off-campus residences that have been inspected and approved. Approval is based on good sanitary arrangements, adequate fire protection, and both satisfactory furniture and living conditions. If a student rents a room not on this list, he should make sure, through personal inspection, that these requirements are satisfactory.

Students planning to live off-campus are advised to come to Ithaca prior to registration to complete room arrangements. Students are usually requested to sign contracts for the full college year, and the details of such agreements should be clearly understood at the outset.

Inquiries on off-campus housing should be addressed to the Off-Campus Housing Office, Department of Residential Halls, Administration Building, Cornell University, Ithaca, New York.

THE CURRICULA

The two-year course has organized within it eight curricula giving preparation for the major types of farming in New York State and for certain allied business. A two-year student must select one of these curricula and follow closely the work as outlined. The curriculum in dairy manufacturing and marketing is the only one that is organized on a one-year basis at present. Changes from these outlines may be made with the consent of the Director of Resident Instruction and the faculty adviser to whom the student will be assigned when he registers.

All two-year men students must register for the Basic Course in Military Science and Tactics. It is not required of the one-year students. Men and women are required to register for Physical Training. These courses are described in the announcements of the four-year course.

Requests for further information regarding these curricula should be addressed to L. H. Harden, in charge of admissions in the College of Agriculture, Roberts Hall, Ithaca, New York.

CURRICULUM IN DAIRY FARMING

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Animal Husbandry 1 (Introductory Livestock Production	3
Agricultural Economics 2 (Agricultural Geography)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Military Science	
Physical Training	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Agronomy 2 (Introduction to Field Crops)	3
Agronomy 6 (Soils)	3
Military Science	
Physical Training	
Agricultural Elective	5 or 6
Suggested:	
Agricultural Engineering 1	

SECOND YEAR

Animal Husbandry 10 (Livestock Feeding)	4
Animal Husbandry 20 (Animal Breeding)	3
Animal Husbandry 30 (Health and Diseases of Animals)	3
Animal Husbandry 50 (Dairy Cattle)	4
Military Science	
Physical Training	
Agricultural Elective	3

Agricultural Engineering 40 (Farm Shop Work)	2
Agricultural Economics 102 (Farm Management)	5
Animal Husbandry 150 (Dairy Cattle, Advanced Course)	3
Military Science	
Physical Training	
Agricultural Elective	5 or 6

CURRICULUM IN GENERAL LIVESTOCK FARMING

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Animal Husbandry 1 (Introductory Livestock Production)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Agricultural Engineering 1 (Farm Mechanics)	3
Military Science	
Physical Training	
Agricultural Elective	2 or 3
Suggested:	
Agricultural Economics 2	
Agricultural Engineering 40	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Animal Husbandry 10 (Livestock Feeding)	4
Agronomy 6 (Soils)	3
Military Science	
Physical Training	
Agricultural Elective	6
Suggested:	
Agricultural Engineering 103	
Agronomy 2	
Animal Husbandry 50, 60	

SECOND YEAR

Fall term	*Hours credit*
Animal Husbandry 20 (Animal Breeding)	3
Animal Husbandry 30 (Health and Diseases of Animals)	3
Animal Husbandry 80 (Sheep)	3
Poultry Husbandry 1 (Farm Poultry)	3
Military Science	
Physical Training	
Agricultural Elective	3
Suggested:	
Entomology 42	
Pomology 1	

Spring term	*Hours credit*
Agricultural Economics 102 (Farm Management)	5
Military Science	
Physical Training	
Agricultural Elective	10
Suggested:	
Animal Husbandry 70, 90	
Vegetable Crops 2	

CURRICULUM IN POULTRY FARMING

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Poultry Husbandry 1 (Farm Poultry)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Military Science	
Physical Training	
Agricultural Elective	3 or 5
Suggested:	
Agricultural Engineering 40	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Poultry Husbandry 50 (Market Eggs and Poultry)	2
Agronomy 6 (Soils)	3
Military Science	
Physical Training	
Agricultural Elective	6 or 8
Suggested:	
Pomology 1	

SECOND YEAR

Poultry Husbandry 20 (Breeds, Breeding, and Judging)	3
Poultry Husbandry 30 (Incubation and Brooding)	3
Bacteriology 3 (Agricultural)	3
Military Science	
Physical Training	
Agricultural Elective	6
Suggested:	
Agricultural Engineering 31	

Poultry Husbandry 110 (Poultry Nutrition)	3
Agricultural Economics 102 (Farm Management)	5
Agricultural Economics 144 (Marketing Poultry, Eggs, and Livestock)	3
Military Science	
Physical Training	
Agricultural Elective	4

CURRICULUM IN FRUIT GROWING

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Botany 1	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Military Science	
Physical Training	
Agricultural Elective	3–6
Suggested:	
Agricultural Economics 2	
Animal Husbandry 1	
Poultry Husbandry 1	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Botany 1	3
Agronomy 6 (Soils)	3
Pomology 1 (General)	3
Military Science	
Physical Training	
Agricultural Elective	3

SECOND YEAR

Pomology 111 (Handling, Storage, and Utilization of Fruit)	3
Pomology 102 (Fruit Varieties)	3
Agricultural Economics 142 (Marketing Fruits and Vegetables)	4
Entomology 42 (Elementary Economic Entomology)	3
Military Science	
Physical Training	
Agricultural Elective	3

Agricultural Economics 102 (Farm Management)	5
Agricultural Engineering 1 (Farm Mechanics)	3
Plant Pathology 1 (Elementary)	3
Pomology 112 (Advanced Laboratory Course)	2
Military Science	
Physical Training	
Agricultural Elective	3

CURRICULUM IN VEGETABLE GROWING

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Botany 1	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Agricultural Economics 2 (Agricultural Geography)	3
Military Science	
Physical Training	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Botany 1	3
Vegetable Crops 1	4
Agronomy 6 (Soils)	3
Military Science	
Physical Training	
Agricultural Elective	3
Suggested:	
Agricultural Engineering 1	
Meteorology 1	
Pomology 1	

SECOND YEAR

Fall term	*Hours credit*
Vegetable Crops 112 (Grading and Handling)	3
Entomology 42 (Elementary Economic Entomology)	3
Plant Pathology 1 (Elementary)	3
Military Science	
Physical Training	
Agricultural Elective	6
Suggested:	
Agricultural Economics 142	
Bacteriology 3	
Floriculture 1	
Poultry Husbandry 1	

Spring term	*Hours credit*
Vegetable Crops 2 (Special Cash Crops)	3
Agricultural Economics 102 (Farm Management)	5
Agricultural Engineering 40 (Farm Shop Work)	2
Military Science	
Physical Training	
Agricultural Elective	6
Suggested:	
Animal Husbandry 1, 10	
Agricultural Engineering 103	

CURRICULUM IN GENERAL FARMING

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Agricultural Economics 2 (Agricultural Geography)	3
Animal Husbandry 1 (Introductory Livestock Production)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Military Science	
Physical Training	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Agricultural Engineering 1 (Farm Mechanics)	3
Agronomy 2 (Introduction to Field Crops)	3
Agronomy 6 (Soils)	3
Military Science	
Physical Training	
Agricultural Elective	3 or 4
Suggested:	
Pomology 1	
Vegetable Crops 1	

SECOND YEAR

Agricultural Engineering 102 (Farm Power)	3
Animal Husbandry 10 (Livestock Feeding)	4
Animal Husbandry 20 (Animal Breeding)	3
Animal Husbandry 50 (Dairy Cattle)	4
Military Science	
Physical Training	
Agricultural Elective	3
Suggested:	
Botany 1	
Poultry Husbandry 1	

Agricultural Economics 102 (Farm Management)	5
Entomology 42 (Elementary Economic Entomology)	3
Military Science	
Physical Training	
Agricultural Elective	6 or 9
Suggested:	
Agricultural Economics 126	
Agricultural Engineering 103	
Botany 1	
Vegetable Crops 2	

CURRICULUM IN COMMERCIAL FLORICULTURE

Students who take this curriculum are expected to enroll in the six-weeks Summer Session at Cornell University between the first and second years. Tuition is charged in the Summer Session.

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Botany 1	3
Floriculture and Ornamental Horticulture 1 (General)	3
Military Science	
Physical Training	
Agricultural Elective	0–3
Suggested:	
Agricultural Economics 2	
Agricultural Engineering 40	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Botany 1	3
Floriculture and Ornamental Horticulture 2 (Introduction to Landscape Design)	3
Floriculture and Ornamental Horticulture 5 (Flower Arrangement)	2
Agronomy 6 (Soils)	3
Military Science	
Physical Training	

SUMMER SESSION

Floriculture and Ornamental Horticulture A12 (Herbaceous Plant Materials)	2
Botany A31 (Plant Physiology)	4

SECOND YEAR

Floriculture and Ornamental Horticulture 123 (Florist Crop Production)	4
Floriculture and Ornamental Horticulture 115 (Plant Propagation)	3
Entomology 42 (Elementary Economic Entomology)	3
Military Science	
Physical Training	
Agricultural Elective	6
Suggested:	
Agricultural Engineering 40	
Agricultural Economics 141	

Floriculture and Ornamental Horticulture 124 (Commercial Greenhouse Production)	3
Floriculture and Ornamental Horticulture 125 (Flower-Store Management)	2
Plant Pathology 1 (Elementary)	3
Floriculture and Ornamental Horticulture 12 (Herbaceous Plant Materials)	3
Floriculture and Ornamental Horticulture 126 (Orchid Culture)	1
Military Science	
Physical Training	
Agricultural Elective	3
Suggested:	
Rural Education 10	
Agricultural Economics 122	

CURRICULUM IN NURSERY LANDSCAPE SERVICE

Students who take this curriculum are expected to enroll in the six-weeks Summer Session at Cornell University between the first and second years. Tuition is charged in the Summer Session.

FIRST YEAR

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Biochemistry 2 (Introductory Agricultural Chemistry)	5
Botany 1	3
Floriculture and Ornamental Horticulture 1 (General)	3
Drawing 10 (Drawing for Landscape Students)	2
Military Science	
Physical Training	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Floriculture and Ornamental Horticulture 13 (Woody-Plant Materials)	4
Floriculture and Ornamental Horticulture 114 (Turf)	2
Botany 1	3
Floriculture and Ornamental Horticulture 2 (Introduction to Landscape Design)	3
Drawing 10 (Drawing for Landscape Students)	2
Military Science	
Physical Training	

SUMMER SESSION

Floriculture and Ornamental Horticulture A12 (Herbaceous Plant Materials)	2
Botany A31 (Plant Physiology)	4

SECOND YEAR

Entomology 43 (Insects of Importance in Ornamental Horticulture)	3
Floriculture and Ornamental Horticulture 115 (Plant Propagation)	3
Floriculture and Ornamental Horticulture 32 (Elementary Design and Planting of Small Properties)	3
Floriculture and Ornamental Horticulture 119 (Planting and Maintenance of Ornamental Plants)	3
Military Science	
Physical Training	
Agricultural Elective	3
Suggested:	
Agricultural Economics 2	
Floriculture and Ornamental Horticulture 114 (Turf)	2
Plant Pathology 1 (Elementary)	3
Floriculture and Ornamental Horticulture 117 (Commercial Nursery Management)	3
Military Science	
Physical Training	
Agricultural Elective	9
Suggested:	
Agricultural Engineering 1	
Agricultural Engineering 21	
Pomology 1	
Rural Education 10	
Vegetable Crops 1	

ONE-YEAR CURRICULUM IN DAIRY MANUFACTURING AND MARKETING

Fall term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Bacteriology (Agricultural)	3
Dairy Industry 30 (Dairy Plant Equipment)	3
Dairy Industry 31 (Elementary Dairy Industry)	4
Agricultural Economics 2 (Agricultural Geography)	3
Physical Training	

Spring term	*Hours credit*
Extension Teaching 1 (Oral and Written Expression)	3
Dairy Industry 32 (Processing of Milk and Milk Products)	5
Animal Husbandry 50 (Dairy Cattle)	4
Agricultural Economics 43 (Milk Marketing)	3
Rural Education 10 (Psychology)	3
Physical Training	

Description of Courses

The courses described in the following pages are those required in one or more of the preceding curricula. They are 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*. The work given in several of the departments is not required in these curricula, 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.

The arrangement of the courses in the foregoing curricula is such that prerequisites will have been met if the courses are taken in the order in which they are listed. One should consult the four-year announcement for course prerequisites before making any change in the order of schedule.

AGRICULTURAL ECONOMICS

2. *AGRICULTURAL GEOGRAPHY.* Fall term. Credit three hours. Lectures, W F 9 or 11. Warren 25. Laboratory, T W Th or F 2–4 or W or Th 7–9. Warren 325. Professor DEGRAFF.

Historical perspective on present-day agriculture; adjustment of agriculture to natural and to economic environment; crop and livestock production in New York State, the United States, and other countries; interregional trade in agricultural products.

43. *MILK MARKETING.* Spring term. Credit three hours. Lectures, T Th 8. Discussion, S 8. Warren 201. Mr. ————.

For students in the one-year course in dairy industry. This course gives instruction concerning the economic aspects of milk distribution. Among the topics discussed are: a description of the fluid-milk industry; the marketing system for milk and cream; how milk prices are determined; business efficiency in milk distribution; industry responsibilities and public relations.

102. *FARM MANAGEMENT.* Spring term. Credit five hours. Not open to first-year students. Lectures, M W F 10. Warren 25. Laboratory, T W Th or F 2–4. Warren 101. On days when farms are visited, the laboratory period is from 2–6. Professor WARREN.

Farming as a business; farm accounts; factors affecting profits; size of business; choice of enterprises; form of tenure and leases; methods of getting started in farming; choosing a farm; planning the organization and management of specific farms. One all-day trip and four half-day trips are taken to visit farms in near-by regions.

[122. *ACCOUNTING METHOD.* Spring term. Credit three hours.] Not given in 1949–50.

For persons who wish to understand the records and procedures commonly used in keeping accounts of cooperatives and other businesses. Recording business transactions and deriving financial statements, analysis of costs and budgets.

126. *FARMERS' COOPERATIVES.* Spring term. Credit three hours. Lectures, W F 8. Discussion, T or F 2–4. Warren 225. Professor HEDLUND.

What cooperatives have tried to do and what they have done; their special problems of organization, finance, and control.

141. *MARKETING.* Fall term. Credit three hours. Lectures, M W 10. Warren 25. Discussion, W or Th 2–4. Warren 225. Associate Professor BRUNK.

Development of agricultural marketing; characteristics of consumer demand; peculiarities of agricultural supply; and the costs, functions, and services involved in the marketing of farm products.

142. *MARKETING FRUITS AND VEGETABLES.* Fall term. Credit four hours. Lectures, M W F 9. Warren 225. Laboratory, W or F 2–4. Warren 240. 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 ratings; terminal problems; aspects of retailer- and consumer-demand.

144. *MARKETING POULTRY, EGGS, AND LIVESTOCK.* Spring term. Credit three hours. Lectures, T Th 10. Laboratory Th 2–4. Warren 225. Associate Professor DARRAH.

A study of the economic factors involved in the marketing of poultry, eggs, hogs, cattle, and sheep. Subjects to be discussed include demand for and supply of poultry, eggs, and livestock; ways to balance demand and supply; marketing systems; maketing costs; and ways to reduce marketing costs. Two half-day field trips are taken during the term.

AGRICULTURAL ENGINEERING

1. *FARM MECHANICS.* Fall or spring term. Credit three hours. Lectures, T Th 10. Stocking 218. Laboratory, M T W Th F 2–4.30 or S 8–10.30. Agricultural Engineering Laboratories. Professor JENNINGS and assistants.

A course planned to give training in understanding the farm application of mechanical methods and appliances and to develop ability to think and to reason in terms of these. It covers such farm equipment as pumps, water systems, plumbing, hoists and elevators, farm wiring and motors, refrigeration, and air fans.

102. *FARM POWER.* Fall term. Credit three hours. Lectures, T Th 11. Warren 125. Recitation, F 8 9 10 11 or 12. Laboratory, M T W Th 2–4.30 or M 10–12.30. Agricultural Engineering Laboratories. Assistant Professor WAHLGREN.

A study of the principles of operation and adjustments of single-cylinder and multi-cylinder engines and the care, repair, and adjustments of modern farm tractors.

103. *FIELD MACHINERY.* Spring term. Credit three hours. Lectures, T Th 11. Warren 125. Recitation, F 8 9 10 11 or 12. Laboratory, M T W Th 2–4.30 or M 10–12.30. Agricultural Engineering Laboratories. Assistant Professor WAHLGREN.

A study of the use, care, operation, adjustment, and repair of farm machinery, such as plows, drills, binders, combines, sprayers, potato diggers, and the like. Horse-drawn, as well as tractor, equipment is included. The selection of the size and the type of field equipment best adapted for a specified size of farm is considered.

21. *SURVEYING.* Fall or spring term. Credit three hours. Prerequisite, Trigonometry. Lectures, M W 10. Stocking 119. Recitation, F hour to be arranged. Laboratory, M T or W 2–4.30. Agricultural Engineering Quonset and field. Assistant Professor GRAY.

A study of the use and care of levels, transits, and plane tables, with special emphasis on their application to farm problems.

31. *FARM STRUCTURES.* Fall term. Credit three hours. Prerequisite, Trigonometry and Physics. Lectures, M W F 8. Stocking 218. Assistant Professor GRAY.

A course in the solution of elementary problems in farm buildings; a study of space requirements, foundations, beams, roof members, insulation, and ventilation.

40. *FARM SHOP WORK.* Fall or spring term. Credit two hours a term. Section 1, T Th 2–4.30; section 2, M F 2–4.30. Agricultural Engineering Laboratories. Professor ————.

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.

AGRONOMY

2. *INTRODUCTION TO FIELD CROPS.* Spring term. Credit three hours. Discussion periods, W F 10. Caldwell 100. Laboratory, M T W Th or F 2–4.30. Caldwell 250. Professor HARTWIG.

A study of the culture of the common field crops that are produced in the Northeastern States, with emphasis on the practical aspects. Rotations with their seed and fertilizer requirements are worked out for three or four type-farms where the objective is to produce feed and food.

6. *SOILS.* Spring term. Credit three hours. Lectures, T Th S 9. Caldwell 100. Laboratory, M T W Th or F 2–4.30. Caldwell 143. Assistant Professor ————.

A course dealing with the composition, properties, and plant relationships of soils, with particular reference to the practical use of lime, fertilizers, and other means of maintaining soil fertility and of controlling soil erosion.

ANIMAL HUSBANDRY

1. *INTRODUCTORY LIVESTOCK PRODUCTION.* Fall term. Credit three hours. Lectures, W F 8 or 10. Wing A. Laboratory, T Th or F 2–4.30 or W 11–1. Judging Pavilion. Professors MILLER and J. P. WILLMAN and Assistant Professor WANDERSTOCK.

Introduction to types, breeds, judging, care, feeding, and management of sheep, swine, beef cattle, and horses.

10. *LIVESTOCK FEEDING.* Fall or spring term. Credit four hours. Lectures: fall term, M W F 11; spring term, M W F 9. Wing A. Laboratory: fall term, Th or F 2–4.30; spring term, M W Th or F 2–4.20. Wing C. Associate Professor S. E. SMITH and assistants.

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.* Fall term. Credit three hours. Lectures, M W 9. Wing A. Recitation, demonstration, or laboratory, M T W or F 2–4.30. Wing C. Associate Professor R. W. BRATTON and assistants.

A general outline of the principles of physiology and heredity as applied to the breeding of farm animals.

30. *HEALTH AND DISEASES OF ANIMALS.* Fall term. Credit three hours. Lectures, M W F 11. Veterinary College. Professor ————.

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 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.* Fall or spring term. Credit four hours. Lectures: fall term, T Th S 8; spring term, T Th S 10. Wing A. Laboratory, fall term; M 2–4.20; spring term, M or Th 2–4.20. Wing A and Judging Pavilion. Professor TURK, Assistant Professor SCHULTZ, and assistants.

This course deals with some of the economic aspects of the dairy industry; factors in breeding and development of dairy cattle; milking methods and milk-production problems; efficient feeding; and care, management, and health of the dairy herd. Practice in selection, herd management, formulating rations, planning breeding programs, and keeping records.

150. *ADVANCED DAIRY PRODUCTION.* Spring term. Credit three hours. Lectures, T Th 11. Lecture and discussion, T 2–4.20. Wing E. Associate Professor TRIMBERGER.

Analysis of breeding and management programs in successful herds. Evaluation of the programs of dairy-cattle breed associations. Emphasis is placed on the application of the principles of dairy breeding, feeding, and management to the development and operation of a successful dairy farm.

60. *BEEF CATTLE.* Spring term. Credit three hours. Lectures, W F 10. Wing B. Laboratory, F 2–4.20. Judging Pavilion. Professor MILLER.

Origin, history, and development of the breeds of beef cattle, herd management; feeding for fattening; practice in judging. Lectures, recitations, discussions, reports, tracing of pedigree, and field trips. Field trips, two and one-half days total.

70. *SWINE.* Spring term. Credit three hours. Lectures, W F 11. Wing B. Practice, T 2–4.20. Judging Pavilion and Swine Barn. Professor J. P. WILLMAN.

A general course in the care, feeding, breeding, and management of swine. Lectures, recitations, and discussions; studies in swine selection; field trips and practical exercises in the handling and care of swine. A one-day field trip is taken.

80. *SHEEP.* Fall term. Credit three hours. Lectures, T Th 10. Wing B. Practice, M 2–4.20. Judging Pavilion and Sheep Barn. Professor J. P. WILLMAN.

A general course in the care, breeding, feeding, and management of the farm flock; feeding and fattening of lambs; practice in judging and handling of sheep and wool. Lectures, recitations, demonstrations, discussions, reports, and field trips intended to give students a practical knowledge of sheep production. A one-day field trip is taken.

90. *MEAT AND MEAT PRODUCTS.* Fall or spring term. Credit three hours. Lecture, M 8. Wing B. Two laboratory periods a week, one slaughter section, and one cutting section. Slaughter section, W 2–4.20. Cutting section, M 2–4.20. Professor MILLER and Mr. SCHUTT.

A course in the slaughtering of farm animals, the cutting of carcasses, and the preparing and curing of meats.

BACTERIOLOGY

3. *AGRICULTURAL BACTERIOLOGY.* Fall term. Credit three hours. Lectures, M W F 9. Stocking 218. Professor STARK.

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

BIOCHEMISTRY

2. *INTRODUCTORY AGRICULTURAL CHEMISTRY.* Fall term. Credit five hours. Lectures and recitations, M T W Th F 9. Savage 100. Associate Professor NEAL and assistants.

Lectures, demonstrations, and recitations, dealing with the fundamental principles of chemistry and their application to agricultural practices. The course is not accepted as a prerequisite for further courses in Chemistry or Biochemistry.

BOTANY

1. *GENERAL BOTANY.* Fall and spring terms. Credit three hours a term. Lectures, T Th 9 or 11. Plant Science 233. One laboratory a week, M T W Th F 2–4.30; T 10–12.30; W 8–10.30; F 8–10.30; S 10.30, 9–11.30. Plant Science 240, 242, and 262. Professor PETRY, instructors, and assistants.

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 their 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.

31. *PLANT PHYSIOLOGY.* Fall or spring term. Credit four hours. Lectures, T Th 10. Plant Science 143. Laboratory, T Th or W F 2–4.30, or M 2–4.30 and S 8–10.30. Plant Science 227. Professor KNUDSON, Professor O. F. CURTIS, or Professor D. G. CLARK, and assistants.

This course is designed to acquaint the students 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. Particular emphasis is placed, both in laboratory and classroom, on the discussion of principles and their application to plants.

DAIRY INDUSTRY

30. *DAIRY PLANT EQUIPMENT.* Fall term. Credit three hours. Lectures, M F 10. Stocking 120. Laboratory, W 1–5. Mr. MARCH.

For one-year students in dairy industry. Fundamentals of heat, power, and refrigeration as applied to dairy plant equipment.

31. *ELEMENTARY DAIRY INDUSTRY.* Fall term. Credit four hours. Lectures, T Th S 9. Stocking 120. Laboratory, F 1–4. Stocking 209. Mr. SHAUL.

For one-year students in dairy industry. The composition and testing of milk, together with a survey of the dairy industry.

32. *PROCESSING OF MILK AND MILK PRODUCTS.* Spring term. Credit five hours. Lectures, T Th 9. Stocking 120. Laboratory, T Th 1–5. Mr. MARCH.

For one-year students in dairy industry. The processing and sanitary control of fluid milk, and the manufacture of milk products.

DRAWING

10. *DRAWING FOR LANDSCAPE STUDENTS.* Throughout the year. Credit two hours a term. First term: W F 1.40–4.30; second term, M F 11–1, S 9–11. Plant Science 433. Mr. ————.

Use of instruments and materials, lettering, isometric and perspective drawing, outdoor sketching of landscape forms, and methods of rendering landscape designs.

ENTOMOLOGY

42. *ELEMENTARY ECONOMIC ENTOMOLOGY.* Fall term. Credit three hours. Lectures, T Th 9. Comstock 345. Laboratory, M or T 2–4.30. Comstock 100. Associate Professor WATKINS and assistants.

Lectures on the economic importance of insects, position of insects in the animal kingdom, orders of major importance, principles of insect control, life histories and habits of selected insects attacking plant and animal crops in New York. Laboratory exercises on life histories, recognition, and control of the commoner insects of New York.

43. *INSECTS OF IMPORTANCE IN ORNAMENTAL HORTICULTURE.* Fall term. Credit three hours. Given in alternate years. Lectures, W F 10. Comstock 345. Laboratory, Th or F 2–4.30. Comstock 100. Associate Professor WATKINS and assistants.

A consideration of the chief insects injurious to shade trees, the farm woodlot, ornamental trees and shrubs, commercial florist crops, garden flowers, and turf. Identification and methods of control are stressed.

EXTENSION TEACHING

1. *ORAL AND WRITTEN EXPRESSION.* Throughout the year. Credit three hours a term. Lectures and practice: Fall term, M W F 8 or 11 or T Th S 10; spring term, M W F 8 9 or 11. Roberts 131. Criticism by appointment, daily 8–5, and S 8–1. Assistant Professors FREEMAN and DAVIS and Messrs. LUEDER and ————.

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 materials 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 Rice Debate Stage. In addition, some study is made of representative works in English literature. Part of the work in the second term is a study of parliamentary practice.

FLORICULTURE AND ORNAMENTAL HORTICULTURE

1. *GENERAL FLORICULTURE AND ORNAMENTAL HORTICULTURE.* Fall term. Credit three hours. Lectures, M W 10. Plant Science 143. Laboratory, T W or Th 2–4. Plant Science 15. Professor MACDANIELS and Mr. ANDREASEN.

An elementary course covering the principles and practices of growing ornamental plants in the gardens, greenhouse, and home.

2. *INTRODUCTION TO LANDSCAPE DESIGN.* Spring term. Credit three hours. Lecture, M W F 9. Plant Science 233. Associate Professor PORTER and Mr. ————.

A consideration of the principles of landscape design as applied to the small-residence property.

5. *FLOWER ARRANGEMENT.* Spring term. Credit two hours. Lecture, T 10. Plant Science Laboratory, T W 2–4.30, or Th 10–12.30. Plant Science 233. Mr. FOX.

A study of the principles and methods of arranging flowers and other plant materials in the house and for decorative use.

12. *HERBACEOUS PLANT MATERIALS.* Spring term. Credit three hours. Lectures, T Th 8. Plant Science 37. Laboratory, W 10–12.30 or 2–4.30. Plant Science 15. Mr. LEE.

A study of the ornamental herbaceous plants used in landscape and garden plantings. Emphasis is placed on the identification, use, and culture of spring-flowering bulbs and perennials. The class visits Rochester Parks and gardens in late May.

13. *WOODY-PLANT MATERIALS.* Spring term. Credit four hours. Lectures,

T Th 9. Laboratory and field trips, M and W or F 2–4.30. Plant Science 29. Assistant Professor CORNMAN.

A study of the trees, shrubs, and vines used in landscape planting. Emphasis is placed on their characteristics and values for use as landscape material. The class visits Rochester parks and gardens.

114. *TURF.* Spring term. Credit two hours. Lecture, W 11. Laboratory, Th 2–4.30. Plant Science 29. Assistant Professor CORNMAN.

A course dealing chiefly with the principles, practices, and materials for the construction and maintenance of lawn areas. Some attention is given sports turf. A week-end inspection trip is taken to experimental test plots and special turf areas.

115. *PLANT PROPAGATION.* Fall term. Credit three hours. Lectures, T Th 8. Plant Science 37. Laboratory, Th 2–4.30 or S 9–11.30. Greenhouses and nurseries. Associate Professor SNYDER.

A study of the principles and methods involved in the propagation of woody and herbaceous plants by seeds, division, layers, cutting, budding, and grafting. The class visits nurseries at Geneva and Newark, New York.

117. *COMMERCIAL NURSERY MANAGEMENT.* Spring term. Credit three hours. Lectures, T Th 10. Plant Science 37. Laboratory, T 2–4.30. Greenhouses and Nurseries. Associate Professor PRIDHAM and Mr. ————.

A course supplementary to 115 dealing with the problems of the commercial propagation and growing of nursery plants. Pruning, digging, storage, and packaging of nursery stock are considered. Trips are made to near-by commercial nurseries.

119. *PLANTING AND MAINTENANCE OF ORNAMENTAL PLANTS.* Fall term. Credit three hours. Lectures, T Th 9. Plant Science Laboratory, T 2–4.30. Greenhouses, Nurseries, Cornell Plantations. Associate Professor PRIDHAM and Mr. ————.

A study of the principles and practices employed in the maintenance of ornamental plants, including the planting, watering, cultivation, pruning, and winter protection of landscape plant materials in garden and park planting. Both woody and herbaceous materials are considered. Trips are made to estate and park plantings.

123. *FLORIST-CROP PRODUCTION.* Fall term. Credit four hours. Lectures and recitations, M W F 9. Plant Science 37. Laboratory, M 2–4.30, Greenhouses. Professor POST and Mr. KOFRANEK.

A comprehensive study of the application of basic science to the culture of ornamental plants, particularly under greenhouse conditions. A trip is taken to greenhouses in Rome and Utica, New York.

124. *COMMERCIAL GREENHOUSE PRODUCTION.* Spring term. Credit three hours. Lectures, M W 9. Plant Science 37. Laboratory, W 2–4.30. Greenhouses. Assistant Professor ————.

A course supplementary to course 123 dealing with the commercial production of florist crops; emphasis is upon the practical problems concerned. A trip is made to near-by commercial greenhouses.

125. *FLOWER-STORE MANAGEMENT.* Spring term. Credit two hours. Prerequisite, permission to register. Lecture, M 11. Plant Science 37. Laboratory, M 2–4.30. Plant Science 22. Mr. ————.

Lectures devoted to flower-shop management, business methods, merchandising, and marketing of floricultural commodities. Laboratories to include the application of subject matter and the principles of commercial floral arrangement and design. A trip made to New York City at the time of the International Flower Show will include the Flower Shop. Retail Florist Establishments, and the New York Flower Market.

126. *ORCHID CULTURE.* Spring term. Credit one hour. Given in alternate years. Prerequisite, a knowledge of plant physiology, greenhouse practice, and permission to register. Lecture, F 9. Plant Science 141. Professors KNUDSON and POST.

A course dealing with the classification, propagation, and greenhouse culture of orchids.

32. *ELEMENTARY DESIGN AND PLANTING OF SMALL PROPERTIES.* Fall term. Credit three hours. Lecture, F 9. Laboratory, M 2–4.30, and three additional hours. Plant Science 433. Associate Professor PORTER and Mr. BEGIN.

The application of the principles of design to the specific problems of the small residence property.

METEOROLOGY

1. *ELEMENTARY METEOROLOGY.* Fall or spring term. Credit three hours. Lectures, T Th 11. Plant Science 143. Laboratory, M T W or Th 2–4.30. Plant Science 114. Professor ———— and assistants.

A course designed to acquaint the student with the principles of the general and secondary circulation of the atmosphere; the elements of weather and climate; practical weather forecasting from weather maps and local observations.

PLANT PATHOLOGY

1. *ELEMENTARY PLANT PATHOLOGY.* Fall or spring term. Credit three hours. Lecture, Th 11, Plant Science 336. Practice and conferences, T Th, T F, W Th, or W F 2–4.30. Plant Science 336, 341, 343, and 362. Professors KENT, WELCH, and L. J. TYLER.

An introductory course dealing with the nature, cause, and control of disease in plants. Some of the commoner diseases of cultivated crops are studied in the laboratory.

POMOLOGY

1. *GENERAL POMOLOGY.* Fall or spring term. Credit three hours. Lectures, T Th 8. Plant Science 233. Laboratory, fall term, M T or W 2–4.30; spring term, M T W Th or F 2–4.30. Plant Science 107. Spring term: Professor SMOCK. Fall term: Associate Professor EDGERTON, and Messrs. HARRIS, UOTA, and ————.

A study of the general principles and practices in pomology and their relation to the underlying sciences; 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.

102. *FRUIT VARIETIES.* Fall term. Credit three hours. Lectures, F 12, S 8. Laboratory, S 9–12. Plant Science 114. Professor BOYNTON, Associate Professor SLATE, Assistant Professor LAMB, and Messrs. HARRIS and ————.

A systematic study of the most important varieties of apples, pears, peaches, plums, grapes, and small fruits from the standpoint of their identification, growth characters, and special cultural requirements. The development of new varieties by breeding and the methods of testing and evaluating them are discussed. At least one field trip is made.

111. *HANDLING, STORAGE, AND UTILIZATION OF FRUIT.* Fall term. Credit three hours. Lectures, T Th 8. Plant Science 143. Laboratory, Th or F 2–4.30. Plant Science 107. At least one field trip is given. Professor SMOCK and Mr. UOTA.

The important factors in harvesting and handling fruit that affect quality and marketability are studied. Emphasis is placed on the practices and problems of handling apples, but the work covers also such fruits as peaches, pears, and grapes, in so far as these are available. The effect of grades and packages on distribution

and marketing is fully discussed, with some attention to the problems of market inspection. Consideration is given to the principles and practices of common, cold, and modified air storage, and to the utilization of fruits in the dried, canned, frozen, or juice forms.

112. *ADVANCED LABORATORY COURSE.* Spring term. Credit two hours. S 8–1. Plant Science 107. Professors HOFFMAN and BOYNTON and Associate Professor EDGERTON.

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, grafting, orchard-soil selection and management, pollination, and spray practice. Several field trips extending into the afternoon are made.

POULTRY HUSBANDRY

1. *FARM POULTRY.* Fall term. Credit three hours. Lectures, M W F 10. Rice 300. One recitation period, to be arranged. Rice 300. Professor HALL, assisted by other members of the staff.

A general course dealing with the practical application of the principles of poultry husbandry to general farm conditions.

110. *POULTRY NUTRITION.* Spring term. Credit three hours. Lectures, T Th 9. Rice 100. Laboratory, Th or F 2–4. Rice 305. Professor HEUSER.

The principles of poultry nutrition and their application to poultry-feeding management.

20. *POULTRY BREEDS, BREEDING, AND JUDGING.* Fall term. Credit three hours. Lecture or recitation, T Th 10. Rice 100. Laboratory, T or W 2–4. Judging Laboratory. Professor HALL.

Selecting and judging birds for production and breed characters; origin, history, and classification of breeds; introduction to breeding. A one-day trip is made to one of the leading poultry shows. Estimated cost for transportation, $5.

30. *INCUBATION AND BROODING.* Fall term. Credit three hours. Lectures, T Th 9. Laboratory, W Th or F 2–4. Rice 100. Professor BRUCKNER.

Principles of incubation and brooding of domestic and game birds; problems of hatchery management.

50. *MARKET EGGS AND POULTRY.* Spring term. Credit two hours. Lecture, T 11. Laboratory, T W or Th 2–4. Rice 100. Professor HALL.

A detailed study of the interior and exterior qualities of eggs, abnormalities, egg grades, and standards; practice in candling, grading, and packing. Grades and standards of market poultry; killing, dressing, and packing. General market information.

RURAL EDUCATION

10. *PSYCHOLOGY.* Fall or spring term. Credit three hours. M W 10 and one hour to be arranged. Fall term: Warren 25; spring term, Plant Science 233. Professor GLOCK.

Designed for students who are not preparing to teach. Consideration of the outstanding psychological concepts that bear upon personal problems and upon business and social relationships.

VEGETABLE CROPS

1. *VEGETABLE CROPS.* Spring term. Credit four hours. Lectures, M W F 11. Plant Science 233. Laboratory, M T W Th or F 2–4.30. Vegetable greenhouses and East Ithaca gardens. Associate Professor SWEET.

Intended for the student who wants a general course, and as an introductory course for the student who wishes to specialize in commercial vegetable growing, whether for fresh marketing or for processing. A general study of the principles of vegetable growing and handling, with a brief comprehensive survey of the industry. Consideration is given to the economic importance, geography, cultural requirements, marketing, and storage of the important vegetables. A one-day trip is required, usually the last Saturday of the term.

2. *SPECIAL CASH CROPS.* Spring term. Credit three hours. Lectures, T Th 10. East Roberts 222. Laboratory, T W or Th 2–4.30. East Roberts 223. Professor HARDENBURG.

The most important cash-crop vegetables grown in the East are given special emphasis in this course. About one-half of the term is devoted to potatoes; other crops include dry beans, cabbage, and the more important crops grown for processing. Laboratory work includes primarily a study of potato and bean varieties and field trips to near-by farms and processing plants.

112. *GRADING AND HANDLING VEGETABLE CROPS.* Fall term. Credit three hours. Lectures, T Th 8. East Roberts 222. Laboratory, T or W 2–4.30. East Roberts 223, vegetable greenhouses, and East Ithaca gardens. Professor HARTMAN.

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. One two-day trip and three afternoon trips are required. Estimated partial cost of transportation to be collected from the student, $6.