UNIVERSITY OF NEW HAMPSHIRE BULLETIN

1924

The University of New Hampshire and The New Hampshire College of Agriculture and the Mechanic Arts

Durham, New Hampshire

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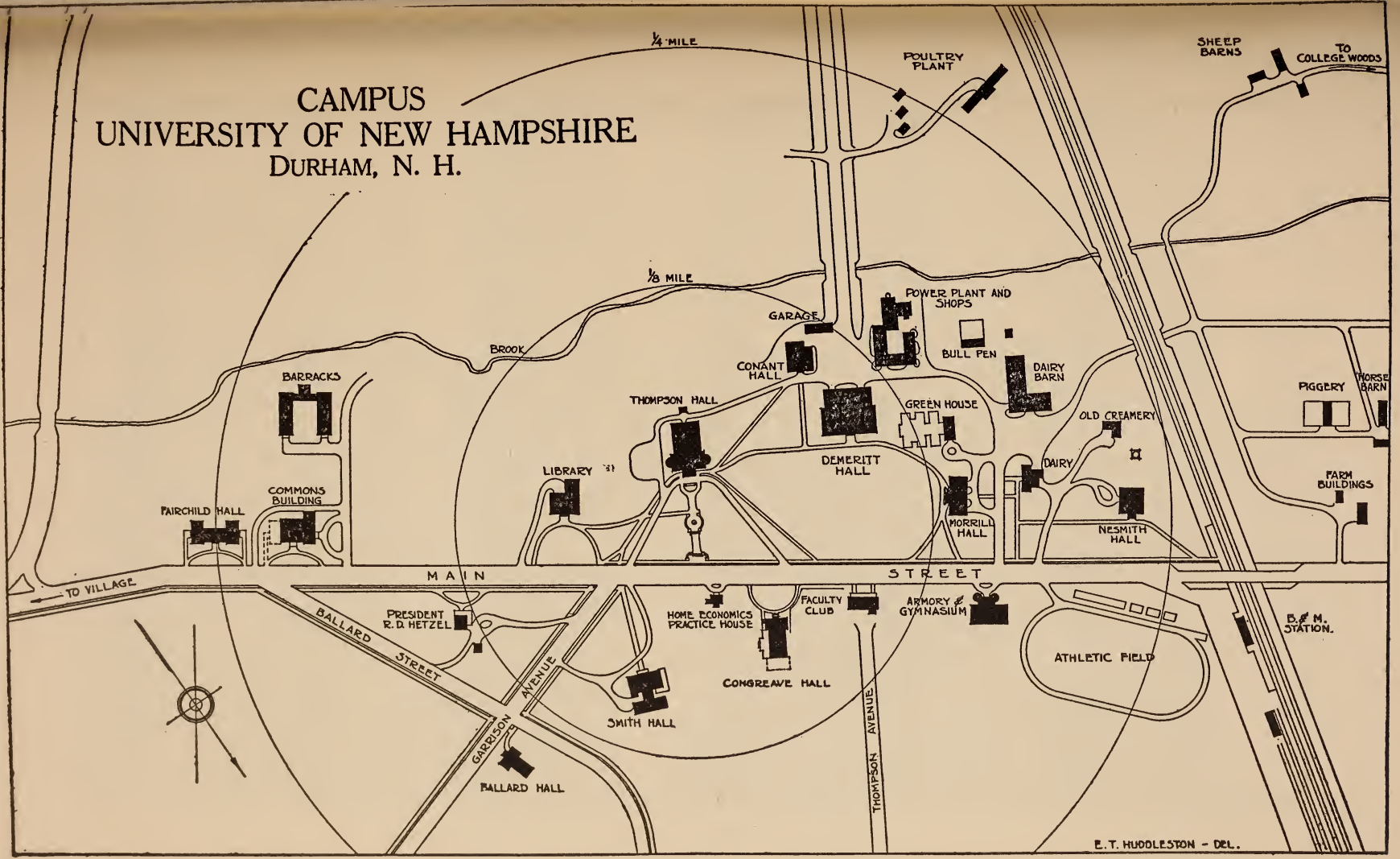

This map shows the buildings of the University and the immediately adjacent grounds. It does not include the farms, forests, gardens or orchards.

CALENDAR

1924

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

APRIL						
S	M	T	W	T	F	S
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13	14	15	16	17	18	19
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27	28	29	30	..	..	..
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MAY						
S	M	T	W	T	F	S
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11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31
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JUNE						
S	M	T	W	T	F	S
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29	30	..	..	..	..	..
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JULY						
S	M	T	W	T	F	S
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AUGUST						
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24	25	26	27	28	29	30
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SEPTEMBER						
S	M	T	W	T	F	S
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OCTOBER						
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NOVEMBER						
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DECEMBER						
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1925

JANUARY						
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FEBRUARY						
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MARCH						
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APRIL						
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MAY						
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JUNE						
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JULY						
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AUGUST						
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SEPTEMBER						
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OCTOBER						
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NOVEMBER						
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DECEMBER						
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27	28	29	30	31	..	..
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THE UNIVERSITY CALENDAR
1924–1925

FALL TERM
1924

Sept. 10, Registration Day
For Freshman Class Only

Sept.	10	Wednesday	Registration Day—Freshman class
Sept.	16	Tuesday	Registration Day—Upper classes
Sept.	17	Wednesday	Recitations begin at 8 A.M.
Oct.	8	Wednesday	Annual Meeting of Board of Trustees
Nov.	4	Tuesday	Mid-Term Warnings to be filed, 5 P.M.
Nov.	25	Tuesday	Thanksgiving recess begins at 6 P.M.
Dec.	1	Sunday	Thanksgiving recess ends at 8 P.M.
Dec.	17–23	Wed.–Tues.	Fall term Examinations
Dec.	23	Tuesday	Fall Term closes at 4 P.M.

WINTER TERM
1925

Jan.	2	Friday	Registration Day
Jan.	3	Saturday	Recitations begin at 8 A.M.
Jan.	14	Wednesday	Meeting of Board of Trustees
Feb.	13	Friday	Mid-Term Warnings to be filed, 5 P.M.
Feb.	22	Sunday	Washington's Birthday
Mar.	10	Tuesday	Town Meeting—classes dismissed at 10 A.M.
Mar.	23–27	Mon.–Fri.	Winter Term Examinations
Mar.	27	Friday	Winter Term closes at 4 P.M.

SPRING TERM
1925

Apr.	7	Tuesday	Registration Day
Apr.	8	Wednesday	Recitations begin at 8 A.M.
Apr.	8	Wednesday	Meeting of Board of Trustees
May	6	Wednesday	New Hampshire Day (Subject to change)
May	15	Friday	Mid-Term warnings to be filed, 5 P.M.
May	30	Saturday	Memorial Day (Holiday)
June	15–20	Mon.–Sat.	Spring Term Examinations
June	17	Wednesday	Senior examinations close, 4 P.M.
June	20	Saturday	Alumni Day
June	21	Sunday	Baccalaureate Day
June	22	Monday	Class Day
June	22	Monday	Meeting of Board of Trustees
June	23	Tuesday	Commencement Day

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Hon. James A. Tufts, A.M., LL.D., *Secretary*	Exeter
Jan. 10, 1914, to June 14, 1925	
*Hon. Edward H. Wason, B.S., D.Sc.	Nashua
Jan. 16, 1906, to Sept. 1, 1925	
Hon. Richard W. Sulloway, A.B.	Franklin
May 13, 1909, to Nov. 30, 1924	
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Hon. Dwight Hall, A.B.	Dover
Oct. 29, 1915, to Oct. 31, 1924	
Hon. Eugene S. Daniell	Greenland
June 14, 1916, to July 12, 1925	
Hon. Roy D. Hunter	West Claremont
June 14, 1916, to June 14, 1925	
Hon. Andrew L. Felker	Laconia
July 17, 1917, to July 17, 1926	
Hon. William T. Nichols, A.B.	Manchester
Feb. 15, 1918, to Feb. 15, 1924	
Hon. John C. Hutchins	North Stratford
Oct. 3, 1918, to Aug. 30, 1926	

* Elected by the Alumni.

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DORIS BEANE, *Stenographer, College of Technology*
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* Arranged in groups in order of seniority of appointment.

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LEO J. KLOTZ, PH.D., *Assistant Professor of Botany*
MAYME MACDONALD, A.M., *Assistant Professor of Physical Education for Women*

*Arranged in groups in order of seniority of appointment.

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HORACE A. GIDDINGS, B.S., *Instructor in Mathematics*

* Arranged in groups in the order of seniority of appointment.

RICHARD L. GUSTAFSON, B.S., *Instructor in Physical Education*
WILLIAM G. HENNESSEY, A.B., *Instructor in English*
THORSTEN W. KALIJARVI, A.M., *Instructor in Languages*
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HERMAN M. PATRIDGE, B.S., *Graduate Assistant in Chemistry*

* Arranged in groups in order of seniority of appointment.

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L. J. KLOTZ, PH.D., *Assistant Botanist*
S. W. WENTWORTH'S B.S., *Assistant Horticulturist*
C. P. SPAETH, B.S., *Assistant Chemist*
P. R. LOWRY, M.S., *Assistant Entomologist*
H. F. DEPEW, *Assistant Dairy Husbandman*
P. I. FITTS, *Assistant Poultry Husbandman*
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A. D. LITTLEHALE, *Shepherd*
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OSCAR H. PEARSON, *Research Assistant in Horticulture*

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H. B. STEVENS, A.B., *Executive Secretary*
RAYMOND C. MAGRATH, *Purchasing Agent*
BEATRICE M. RICHMOND, *Bookkeeper*

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CHRISTINA M. COLLINS, *Stenographer*
HELEN M. HILTON, *Stenographer*
MARY E. LAWLESS, *Stenographer*

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Pres. R. D. Hetzel, A.B., LL.B., LL.D., *ex officio*	Durham
Hon. W. H. Caldwell, B.S.	Peterborough
Hon. R. D. Hunter	West Claremont

GENERAL EXTENSION STAFF

R. D. Hetzel, A.B., LL.B., LL.D., *President*
J. C. Kendall, B.S., *Director of Extension Work*
E. P. Robinson, B.S., *County Agent Leader*
Daisy D. Williamson, *State Home Demonstration Leader*
H. C. Woodworth, M.S., *Farm Management Demonstrator*
C. B. Wadleigh, B.S., *State Leader Boys' and Girls' Club Work*
G. L. Waugh, B.S., *Agent in Dairying*
H. B. Stevens, A.B., *Executive Secretary*
Mary L. Sanborn, *Asst. State Leader Boys' and Girls' Club Work*
Ann F. Beggs, *Asst. State Home Demonstration Leader*
Howard A. Rollins, B.S., *Extension Assistant in Horticulture*

COUNTY AGENTS

F. N. Darling, B.S., *Cheshire County*
H. N. Wells, *Sullivan County*
W. R. Wilson, B.S., *Grafton County*
E. W. Holden, *Strafford County*
R. W. Peaslee, B.S., *Merrimack County*
D. A. O'Brien, *Coös County*
E. W. Pierce, B.S., B.S.A., *Hillsborough County*
M. H. Lockwood, B.S., *Carroll County*
H. W. Fienemann, B.S., *Belknap County*
J. A. Purington, B.S., *Rockingham County*

COUNTY HOME DEMONSTRATION AGENTS

Harriet M. Woodward, B.Ed., *Belknap County*
Helen L. Pulsifer, B.S., *Rockingham County*
Dorothy R. Churchill, B.S., *Sullivan County*
Elizabeth Howe, *Cheshire County*
Gertrude M. McCheyne, B.A., B.S., *Hillsborough County*
Rhandena A. Armstrong, B.S., *Merrimack County*
Miriam J. Cox, *Grafton County*

EXTENSION SERVICE

COUNTY BOYS' AND GIRLS' CLUB AGENTS

HAROLD W. EASTMAN, *Hillsborough County*
——— ———, *Merrimack County*
RUTH W. HURDER, B.S., *Carroll County*
HELEN S. MILLARD, B.S., *Sullivan County*
H. V. INGHAM, B.S., *Cheshire County*
PEARLE SARGENT, B.S., *Grafton County*

ASSISTANTS TO THE STAFF

EDITH H. ABBOT, B.S., *Secretary to the Director*
ELIZABETH E. MEHAFFEY, *Mailing Clerk*
MARTHA E. FISHER, *Secretary to the County Agent Leader*
MARION V. PALMER, *Secretary to the Agent in Dairying*
VERNICE E. PATERSON, *Secretary to Boys' and Girls' Club Leaders*
EDITH LITTLE, *Secretary to Home Demonstration Leaders*

HISTORICAL SKETCH

The New Hampshire College of Agriculture and the Mechanic Arts was created by an act of the New Hampshire legislature in 1866 and was established at Hanover as a state institution, in connection with Dartmouth College. The first class entered in 1868. Before the college was founded, the state legislature of 1863 had accepted the conditions of an act of the federal congress of July 2, 1862, entitled "An act donating public lands to the several states and territories which may provide colleges for the benefit of agriculture and the mechanic arts."

In 1893 the college was moved from Hanover to Durham. This action followed the death of Benjamin Thompson, a farmer of Durham, who died January 30, 1890, and left to the college his entire estate, with the exception of a few minor reservations. The legislature accepted this bequest March 5, 1891, and appropriated the necessary money for the first buildings.

Shortly before the state accepted this gift of Mr. Thompson's, the legislature further provided for the college by accepting the provisions of an act of congress known as the Morrill Bill. This legislation made available federal appropriations "for instruction in agriculture, the mechanic arts, the English language, and the various branches of mathematical, physical, natural and economic science, with special reference to their applications in the industries of life, and to the facilities for such instruction."

Although the college was able to make use of the Thompson land as early as 1893, it was not until 1910 that the income from this endowment of almost $800,000 became available. At present the college has an annual income from the Thompson funds of nearly $32,000. It also receives the moneys which are available as the result of the acts of congress referred to, and the biennial appropriations of the state legislature.

On May 4, 1923, the state legislature passed an act incorporating the *University of New Hampshire*, the act to take effect July 1, 1923. The new corporation includes the present corporation known as the *New Hampshire College of Agriculture and the Mechanic Arts* and also provides for a *College of Technology* and a *College of Liberal Arts*. The trustees of the *New Hampshire College of Agriculture and the Mechanic Arts* serve as the trustees of the university.

The University administration is in charge of a board of thirteen trustees. The governor of the state and the president of the college

are *ex officio* members. The alumni elect two trustees, and the others are appointed by the governor with the advice and consent of the council.

EXPERIMENT STATION

A branch of the University, known as the Agricultural Experiment Station, was established by the state, August 4, 1887, under an act of congress in March of that year. Its purpose is to acquire agricultural knowledge and to bring its information to the people of the state. The station is actively engaged in this work not only in Durham but throughout the commonwealth. Members of the faculty of the college of agriculture serve on the station staff.

EXTENSION SERVICE

In addition to its functions of teaching resident students and conducting research investigations, the University has been developing rapidly during the past few years its function of carrying information and assistance in agriculture and home economics into all parts of the state. The first financial aid for non-resident teaching, or extension work, came in 1911 when the New Hampshire legislature appropriated a sum of money for this purpose. In May of the same year the board of trustees recognized the extension activities of the college as of prime importance and appointed a director of extension work.

The passage of the Smith-Lever act by congress on May 8, 1914, gave a decided impetus to this type of teaching. Under the provisions of this act, New Hampshire, like every other state, receives the sum of $10,000 annually from the federal government for supplementing and strengthening the extension work of the Agricultural College. In addition to this sum, New Hampshire shares in increased allotments for seven years in the proportion which its rural population bears to the total rural population of all the states, provided the state shall appropriate an equal sum. During the year 1923–1924 the federal appropriation under this act amounted to $23,028, and the off-set provided by the state amounted to $13,028.

Under a triangular coöperative arrangement between the United States Department of Agriculture, the University, and the counties of the state, a field force of extension agents has been placed in the various counties to carry on an educational campaign in agriculture and home economics. Towards the development of this work, the county delegations at the legislative session of 1923 appropriated an annual sum of

$40,975 for the next biennium. A supplementary act of congress, passed in July, 1919, also provided under the same terms as the Smith-Lever act, funds which in New Hampshire amounted to $4,131 for the year 1923–1924. The State Legislature made an additional appropriation of $10,000.

As a result of these appropriations the extension staff of the University has been increased until there are now twenty-nine members giving full time to the service. The members of the University and station staffs also render valuable assistance in carrying out the extension program.

SMITH-HUGHES WORK

The enactment by the federal government of the Smith-Hughes law in 1917 made available to the state of New Hampshire $15,000, federal moneys to be matched by an equal amount of state or local moneys. One third of this is to be used in the training of teachers of agriculture, home economics, and industrial education. Two thirds of the amount is to be used in partial payment of the salaries of teachers of these subjects in those public secondary schools which meet the requirements as established by the Federal Board for Vocational Education in regard to teachers, equipment, etc. The New Hampshire State Board of Education has designated the University of New Hampshire as the institution which shall do the teacher training work provided for in this act.

SITUATION

Durham, the home of the University, is an attractive village on the Portland division of the Boston and Maine railroad, sixty-two miles from Boston, fifty-four from Portland, and five from Dover, a city of 15,000 population. Good train service makes the University easily accessible from all parts of the state.

Durham, organized in 1732, is one of the historic towns of New Hampshire. In the early days it was the home of a prosperous ship-building industry. Situated at the head of tidewater on the Oyster River, it served as a distributing center for the interior of the state. During the Revolutionary War it was famous as the home of General John Sullivan. Near his home, in the village, the state has erected a fitting monument to his memory.

BUILDINGS AND EQUIPMENT

BUILDINGS

Thompson Hall is the main administration building, and from its eminence it commands a view of the entire campus. It contains, besides recitation rooms, the offices of the president, dean, registrar, business secretary, bookstore, and headquarters of the departments of modern languages, English, education and psychology, zoölogy, economic entomology, and home economics. The gymnasium for women is also in this building.

Morrill Hall is the headquarters of the College of Agriculture and it contains also the office of the director of the experiment station and the experiment station library. In this building are the laboratories and lecture rooms of the departments of agricultural chemistry, agronomy, animal husbandry, horticulture, poultry husbandry, forestry, and a cattle-judging room. The third floor provides quarters for agricultural extension workers, a reading room for agricultural students, and the agricultural club room.

DeMeritt Hall.—The engineering building is the most prominent of the engineering group, and houses the departments of mechanical engineering, electrical engineering, physics, drawing and mathematics. It contains lecture, recitation, drawing, and office rooms for the several departments; also electrical, mechanical and physical laboratories, each one adapted to and equipped for its specific work.

Conant Hall is devoted exclusively to the department of chemistry. The first floor has been recently fitted up with modern chemistry desks and other equipment to supply much needed additional laboratory facilities for students in chemistry. The second floor contains lecture rooms and three laboratories. The University is well equipped for carrying on its chemical courses, including those connected with chemical engineering, agriculture, and home economics.

The Library.—In accordance with an act of consolidation, the University library and the Durham public library are shelved in one building, forming the Hamilton Smith Library. This consolidation is an especially good one, the University collection of the more serious works in science and in literature supplementing well the lighter and more popular books of the town library. The entire collection numbers 48,000 volumes.

The library as a whole receives 400 periodicals, 200 of which are kept in the periodical and children's rooms and the rest in the various departmental libraries. Forty daily and weekly papers are received.

Aside from the main library, each department has its working library of the more technical books and journals. The departments of sociology, of history and political science, and of economics, are located in the library building.

The Dairy Building is well arranged and equipped for purposes of dairy instruction. It contains a commercial creamery, with sanitary milk room, separator room, churning room, and cold storage room; laboratories for instruction in milk testing, milk inspection, farm butter and cheese-making, and bacteriology. It also contains a reading and exhibition room, a class room, and offices.

The Shop Buildings consist of a woodworking shop, a machine shop, a forge room, a foundry, the boiler house, and a general repair shop connected with the power and service department.

An extensive addition was made to the shops by the carpentry and concrete sections of the New Hampshire College U. S. Army Training Detachment during the fall of 1918. These additions have given opportunity for much needed development of wood and machine shop instruction. One large room is devoted to the display of farm tools and machinery. Lockers are provided for the students.

Nesmith Hall is occupied by the departments of chemistry and botany of the experiment station, and by the laboratories of the department of botany of the University. The third floor is occupied by the department of music.

The Armory and Gymnasium contains a large drill hall and gymnasium and the offices of the Military, and Physical Education Departments.

President's House.—The present structure is a substantial, attractive residence, erected in 1904 to replace the original wooden structure which was burned in 1903.

Commons Building.—The Commons Building, constructed during 1918–1919, at a cost of $110,000 is a handsome brick structure of Georgian style, and modern in every respect. The main dining room, served by a modern cafeteria, has a seating capacity of 300, but is sufficiently large to serve under the cafeteria system a much greater number. There is also a small private dining room. The dormitory on the third floor houses twenty-eight students and permits accommodations for eight or ten guests.

Fairchild Hall.—This building, erected in 1916, was named in honor of the late president of the University. It is a brick structure of colonial design, furnishing accommodations for about 150 men.

Ballard Hall, built at a cost to the state of only $12,000, furnishes desirable accommodations for 73 men.

Barracks A and B are frame buildings which were erected by the college in 1918 for the housing of soldiers in the Students' Army Training Corps and have since been partitioned off into moderate-sized rooms, furnished in the same way as are those of the other dormitories. These buildings supply comfortable quarters at a low cost for 160 men.

Smith Hall was made possible by the generosity of Mrs. Shirley Onderdonk, of Durham, who gave $16,000 as a memorial to her mother, Mrs. Alice Hamilton Smith. The remainder of the cost, $10,000, was provided by the state. By the aid of the carpentry and concrete divisions of the Training Detachment National Army an annex was added to the rear of the hall, greatly increasing the rooming facilities. The hall now accommodates 68 women.

Congreve Hall.—Through the will of Mrs. Alice Hamilton Smith of Durham, a sum of money amounting to approximately $110,000 was received by the University. The board of trustees appropriated this fund to the erection of a women's dormitory, which has been constructed in the Georgian style of architecture to conform to that already adopted for all the University dormitories. During the summer of 1922 a wing was added, completing the original design. It now accommodates 100

students and contains large social rooms, a suite of rooms for the dean of women, and other features that make it an attractive home for women.

The Health Service.—A house in the village has been acquired by lease as an infirmary for the care of students. A competent matron, who is also an experienced nurse, has been secured, and the building has more than justified itself by its usefulness.

Practice House.—A modern house owned by the University and conveniently located on the campus has been fitted up as a practice house for home economic students. Here they live during six weeks of their senior year, taking their turn at performing, under competent supervision, the varied tasks of the household. The house is also used as a laboratory for the teaching of household management and food preparation.

Farm Buildings.—Besides the above, there are numerous large, well-equipped farm and other buildings adapted to the needs of the several departments.

EQUIPMENT

Agronomy.—For the teaching of agricultural engineering, this department is provided with drainage levels for laying out drains, plane tables for making farm maps, polar planimeters for measuring plotted areas, a dynamometer and several other pieces of apparatus for studying draft problems. For farm crops work it has a very complete collection of dried specimens of the different forage crops, and of the more important varieties of corn, wheat and oats. Seed testing apparatus, grass charts, and other illustrative material form a part of the equipment.

The lecture room is equipped with a combined lantern and reflectoscope, together with a large number of lantern slides.

The soil physics laboratory contains soil bins, a compacting machine, chemical and torsion balances and various kinds of physical apparatus for the study of soils, including that for the determination of specific gravity and for the making of mechanical analyses.

The agricultural museum contains the original "Daniel Webster plow" and other primitive models. It also contains many of the latest types of farm machinery, including plows, cultivators, harrows, mowers, planters, corn and grain binders, a thresher, a tractor, a manure spreader, a multiple hitch, various makes of woven wire fences, etc.

The farm, with its 500 acres of land, has a variety of soils suited for the growth of various farm crops.

Animal Husbandry.—The new stock barn is thoroughly equipped with modern appliances. It houses a number of horses of the draft type, including a well-bred Percheron stallion and several mares and colts of the same breed. There are two small herds of beef cattle, milking Shorthorns, and Herefords, and also good individuals of the Devon and Galloway breeds, as well as a flock of pure-bred Shropshire sheep, and a herd of Berkshire hogs.

The modern piggery accommodates a small herd of Berkshires and individuals of the Duroc Jersey and Chester White breeds.

In Morrill Hall a large room is fitted up for the judging of live stock. The class room is provided with a stereopticon lantern, and lantern slides are used to show the leading individuals of the different breeds of live stock.

The herd books of the most prominent breeds are used for the purpose of familiarizing the students with the methods of tracing pedigrees and with the practices of breeders' associations.

Architecture and Drawing.—The department of architecture and drawing is well equipped to meet the needs of the subjects offered. The drafting rooms are supplied with tables and lockers, and the free-hand studio with suitable stands and easels. For engineering and machine drawing there is an excellent collection of working models and machine parts, and various machines in other departments are available for this work. For free-hand drawing there is a good supply of geometric models, and for advanced work in charcoal drawing the nucleus of a good collection of plaster casts exists, consisting of historic ornament, details of plant and animal life and of the human form. For special work in this subject there is available the museum of casts, consisting of examples of antique and modern sculpture. For work in architectural drawing an excellent library of books and periodicals, and blue prints of all classes of buildings, are available for reference and use in the drafting rooms, while a goodly collection of samples of building materials is being added from time to time.

Botany.—The department of botany has the usual laboratory equipment to meet the needs of the courses in general botany, plant physiology and bacteriology. In the advanced courses, owing to the connection of the department with the experiment station, students will find both the laboratory and greenhouse equipment ample for critical studies of plant diseases and plant nutrition.

Chemistry.—The several chemical laboratories are fairly well equipped. Each is supplied with most of the forms of apparatus required for its

particular work. Besides all necessary glass and porcelain ware, this includes water baths, drying ovens, combustion furnace, muffle and assay furnaces, platinum dishes and crucibles, polariscope, spectroscope, balances, lantern and other lecture appliances.

Dairy Husbandry.—The dairy husbandry department offers excellent opportunities for instruction in technical and practical dairy work. The creamery has all necessary machines and equipment. Electric motors furnish power for the different machines. Milk from the college herd, and milk and cream from neighboring farms, give sufficient material for the different laboratories. In the farm dairy room are hand separators, and hand and small power churns. The milk testing and milk inspection laboratory is equipped with Babcock testers and other apparatus. The bacteriological laboratory has equipment necessary for instruction in dairy bacteriology.

The dairy herd of 70 animals consists of representatives of the Guernsey, Jersey, Ayrshire, and Holstein breeds. Use is made of the herd for laboratory instruction in dairy and animal husbandry subjects.

Electrical Engineering.—The laboratories for electrical engineering occupy the ground floor of the south end of DeMeritt Hall. The main laboratory is used for testing dynamo electric machinery, and contains a large distribution switchboard on which are mounted instruments, switches, circuit breakers, a synchroscope, and plugging devices. These devices are so arranged that by making the proper connections thereto, direct current, and single-phase, two-phase and three-phase alternating current of different voltages and frequencies, can be supplied to the various panels in the laboratory and to the lecture rooms in the building.

In addition to this main laboratory there are others devoted to photometry, storage batteries, and high potential experiments. The laboratories are also provided with an instrument room, a mechanician's room, and a photographic dark room.

The general equipment includes various dynamos and motors for direct and alternating current, transformers, rectifiers, rotary converters, telephone and telegraph instruments, wireless telegraph apparatus, an Evans demonstration equipment, arc lamps, storage batteries, and the necessary measuring instruments adapted to the needs of students taking this course.

The lecture rooms of the department are equipped with small panel boards connected directly with the switchboard in the main laboratory, thus making it possible to supplement lectures with demonstrations.

The electric light sets, including engines, dynamos, switchboards and storage batteries, given by Sears, Roebuck & Co. and the Domestic Engineering Co., have proved exceedingly valuable for demonstration and for laboratory experiments.

Farm Department.—The College of Agriculture has a large, well-equipped farm. It serves as a laboratory for much of the instruction in agriculture where approved methods and practices may be seen and where many students may gain experience by actually performing the work with their own hands.

The farm proper consists of about 510 acres, of which about 110 are in forest and woodland, about 70 are occupied by the campus and athletic field, about 160 are hay and tillage land, and about 170 are pasture land. A part of both the pasture and tillage land is utilized by the agronomy, horticulture, and animal husbandry departments.

A second farm of 120 acres, purchased in 1916, adjacent to the main farm and having a complete set of buildings is occupied by the horticultural department. This farm contains one of the best orchard sites in this part of the state, about 20 acres of forest, and about 50 acres of pasture.

Another tract of land of about 300 acres, located 1½ miles south of the campus, was purchased in 1923. This consists largely of woodland, forest and pasture.

The farm buildings consist of a large dairy barn, a horse barn, a stock barn, two sheep barns, a new up-to-date piggery, and four general storage barns. The dairy barn has a 125 ton silo, storage capacity for about 120 tons of hay, and a well-appointed, sanitary stable accommodating 40 cows and a large and valuable complement of young stock. A separate building, with individual yards, is used for housing the herd bulls.

Forestry.—The department of forestry offers a course of instruction which is intended to provide not only a special training in forestry, but also a broad general training in other lines of agriculture closely related to it. For those who desire to make forestry their life work, every encouragement and assistance will be given. Additional work at some graduate school of forestry is now almost a necessity, owing to the large number of men entering the profession.

Durham is well situated with reference to the study of woodlot forestry. All types of native second-growth forests are found nearby, and the college owns a tract of 60 acres of old-growth timber where exceptional opportunities are given for the study of mature forests. There

are other areas where practice will be given in establishing plantations of forest trees by various methods. A nursery for the growing of seedling forest trees has been established.

All the necessary instruments for making forest maps and measurements, together with collections of wood specimens, lantern slides and photographs, are available in connection with this work.

Students in the forestry course go into camp for a period during the senior year in order to get practical experience in camp life and in the survey, valuation, and management of large tracts of woodland.

Home Economics.—The home economics department is located in two large rooms in Thompson Hall. The food laboratory is furnished with individual desk equipment and additional cupboards for extra utensils and supplies. Electricity, gas and oil are used as fuels. (In the Practice House the students have a chance to use a coal and wood range.) The sewing laboratory is equipped with tables, cupboards, and various types of sewing machines.

Various educational exhibits are owned and used by the department for illustrative purposes. A reference library of books, bulletins and journals is deposited partly in the home economics rooms and partly in the college library. For the equipment for teaching household management see "Practice House."

Mechanical Engineering Department.—This department is located in DeMeritt Hall. On the second floor is the drafting room which is given over to advanced drawing and designing. In addition to the drafting room there are two lecture rooms, and department offices. One of the lecture rooms is equipped with stereopticon lantern and screen, so that illustrated lectures may be given at any time.

In the basement is located the mechanical engineering laboratory, the north end of which is given over to a materials' testing room, in which are tested all kinds of building materials, oils, fuels, etc. The main room is given over to steam, gas and hydraulic testing. The equipment consists of three gasoline engines, two high speed steam engines, and one 25 H. P. Murray-Corliss. For hydraulic work there are various kinds of meters, weir tanks, and pumps. In addition to the laboratory equipment mentioned there is a supply of indicators, gages, thermometers and other small apparatus for testing and research work.

Military Department.—Recognizing in military training a source of physical, mental, and moral development for the individual and a future safeguard for the nation, the University maintains two units of the

Reserve Officers Training Corps. This corps, which is described in the later pages of the catalog, consists of over fifty thousand students in all of the principal educational institutions of the country. It was organized by congress in 1916 to provide systematic military training in civil institutions and to train specially selected students as reserve officers in the military forces of the United States.

The training of the corps is under the supervision of the Secretary of War. Officers and non-commissioned officers of the regular army are detailed at the University for carrying on this training. The War Department loans all the necessary equipment of the latest type, so that with the exception of a few text-books required by advanced students, members of the R.O.T.C. are put to no expense for arms or equipment.

In addition to the infantry and artillery equipment furnished by the government, there is a 20-yard indoor rifle and pistol gallery, and a 200- and 300-yard rifle range available for the use of students. The rolling country in the vicinity furnishes opportunity for extended order drill and field exercises, and the athletic field for close order drill.

The cadets wear, when on duty of a military character, the olive drab cloth uniform prescribed by standing orders of the War Department and furnished by the government.

Upon the graduation of each class, the names of those students who have shown special aptitude for military service are reported to the adjutant-general of the army, and to the adjutant-general of the state, and they receive a special certificate for military proficiency.

Physics.—The department of physics is housed in the west end of DeMeritt Hall. In the basement is located the introductory physics laboratory with apparatus room, a photographic laboratory, a switchboard hall, a storage room and two small dark rooms for the individual work of the instructors. On the first floor is located the general physics laboratory and apparatus room, a recitation room and the department office. On the second floor is located the lecture room, with adjoining apparatus room.

Instruction in physics is given primarily by recitations and laboratories, with frequent lectures, examinations, written reports and personal conferences. The aim of the department is to develop student minds capable of doing independent thinking in the science of physics. There is a small but well chosen and growing collection of apparatus for use in laboratories and lectures.

Poultry Husbandry.—The equipment of the poultry department consists of a permanent laying house, housing 1,000 hens; twenty colony

houses, capable of accommodating 10,000 chicks or 450 hens; an incubator cellar having 18 incubators of four different makes, with a capacity of 3,900 eggs; a feed house, containing an egg room; a storage room large enough for a carload of grain; nine colony brooders of six different makes, including both oil and coal burners.

The hens number 1,400 and consist of Barred Plymouth Rocks, Single Comb Rhode Island Reds, and Single Comb White Leghorns.

The whole plant is run on a strictly commercial basis, showing the methods and systems used at a successful, money-making poultry plant. The whole plant is self-supporting, proving that the theories taught are sound.

Shopwork.—The wood shop is equipped with thirty-three benches, and complete sets of tools for 160 students. Each bench is equipped with modern vises. Other equipment consists of a universal pattern maker's saw, board-planer, buzz-planer, band saw, speed-lathes and a large pattern maker's lathe with boring attachment.

The equipment of the machine shop consists of engine lathes, speed-lathe, vertical drill, planer, large universal milling machine, plain milling machine, shaper, power hack saw, tool grinder, twelve benches with vises and bench lathes and a large number of small tools, including micrometers, calipers and gages necessary for accurate work.

In the forge shop are seventeen Sturtevant down-draft forges, with anvils and necessary tools. The blast to the forges is furnished by a No. 4 blower, and the smoke is carried away by a 60-inch exhauster. These are driven by an electric motor.

Zoölogy.—The University is favorably situated geographically for the study of zoölogy. Within a few minutes' walk of the laboratory, the Oyster River meets the tide water from Great Bay. This furnishes a graduation of salt, brackish and fresh water with an abundance of their characteristic fauna. Great Bay, the Piscataqua River and the open ocean are within easy access, and have their own peculiar, characteristic forms. On the other hand, there are numerous bodies of fresh water, with typical fresh water forms.

The department of zoölogy is prepared to offer courses in systematic zoölogy, physiology and sanitation, philosophical zoölogy, and anatomical zoölogy.

The equipment for the work in systematic zoölogy consists of a well-lighted laboratory, provided with tables, charts, dissecting and compound microscopes. All of the latest books and periodicals on systematic zoölogy are at the student's disposal. The lecture room is fitted with

a new reflectoscope capable of projecting opaque objects, text-book figures, or lantern slides. There is a fairly complete collection of local invertebrates, and a very good collection of the birds of New Hampshire. The work in systematic entomology is greatly aided by a large and complete collection of insects which is the property of the experiment station.

The proximity to both salt and fresh water renders the work in advanced systematic zoölogy unusually attractive. In addition to the regular collecting equipment, nets, aquaria, etc., advanced students also have the use of rowboats and a gasoline launch.

In the work in physiology, hygiene and sanitation, the department is provided with an unusually fine collection of injected preparations of the human body, and with numerous charts. The same laboratory and equipment is used in this work as noted above.

For work in evolution and experimental zoölogy the department has a very complete library. Studies in ecology in Great Bay and vicinity are encouraged, for which purpose the students have the use of a camera equipment. In addition to the study of evolution under natural conditions the department also furnishes aquaria for laboratory study and experiments.

The work in anatomical zoölogy is greatly facilitated by an abundance of fresh material which may be collected as needed. For the study of human and comparative anatomy a full set of skeletons and preserved material is provided. Students interested in histology have access to a private collection of some two thousand microscope slides.

Museum.—The museum had for a nucleus the collection made during the state geological survey. To this, additions have been made from various sources. Specimens are being collected to illustrate the zoölogy of New Hampshire, and New Hampshire collectors and naturalists are invited to make the museum the permanent depository of their collections.

GENERAL INFORMATION

EXPENSES

Estimate of Freshmen Expenses

	High *	*Average* *	*Low*
Tuition	$75.00	$75.00	.....
Fees	50.00	50.00	$50.00
Books	35.00	30.00	25.00
Room	110.00	72.00	63.00
Board	300.00	210.00	180.00
Laundry	30.00	18.00	12.00
Uniform †	.....	.....	.....
Incidentals ‡	100.00	45.00	40.00
Total	$700.00	$500.00	$370.00
Expenses, Fall Term §	$300.00	$210.00	$160.00

Tuition and Fees—Four-Year Students.—Tuition is $75 a year for residents of New Hampshire and $150 for non-residents; incidental fees are $50 a year. Tuition is payable in advance in three equal installments, one on the first of each term.

Fees are payable in advance, $20 the first term and $15 for each of the other two terms. A diploma fee of $5 is charged upon graduation. Charges will be assessed for extraordinary breakage or damage. No laboratory or course fees are charged. Payment of the incidental fees entitles the student (four-year, two-year or special) to admission to all varsity athletic games and contests.

Tuition and Fees—Two-Year Students.—Tuition and fees for two-year students in agriculture are as follows: for out-of-state students,

* If a non-resident, add $75 to high and average and $150 to low. If a resident and not holding a scholarship, add $75 to low.

† Uniform for members of the Reserve Officers' Training Corps is provided by the federal government. A deposit of $15 is required in advance.

‡ Expenses for travel, clothing, etc., vary with the individual student, and should be added. The subscription price to the *New Hampshire*, the college paper, is $2.00 per year. Subscriptions are taken during registration at the opening of the college year. Provision should also be made for participation in other student enterprises.

§ Fees, board, incidentals, etc., are largest the Fall Term, and deposit for uniform is required then. Hence the greater proportional expense.

tuition $100, general fee $35; for residents of the state of New Hampshire, tuition $50, general fees $35. Tuition is payable in advance in two equal installments, and fees are payable in advance, $20 the first term and $15 the second term.

Books.—Students may purchase books, drawing instruments, materials, etc., at the University bookstore in Thompson Hall.

Rooms.—The University has three dormitories for women and four for men. All rooms are heated, lighted and furnished. Bed linen, quilts and towels, however, are provided by the individual student. Each women's dormitory is equipped with a laundry. In many cases, three students occupy a suite of rooms. Prices range from $63 to $100 a year for each student. Applications for rooms in the dormitories should be addressed to The Registrar, University of New Hampshire, Durham.

A Five Dollar ($5.00) Room Deposit must accompany each application, this deposit to be forfeited if the room accepted is not occupied by the applicant. The deposit is held as a guarantee against breakage and will be returned upon the payment of any bills for damage at the close of the year or upon withdrawal.

Rooms reserved will be held only until ten days before the registration date noted in the current college catalog unless one-third of the annual rent is paid before that date.

Rooms paid for and not occupied one day after registration will be declared vacant and the room rent returned, unless the individual having the reservation makes a written request to the Registrar to hold the room until a later date. The advance payment for the room will not be returned to those making this special request. No room will be reserved more than ten days after the registration date. Early application is necessary in order to secure a choice of rooms. Rooms in private dormitories or families may be secured for about the same prices as for those in college dormitories.

Women students, unless living at home, are required to room in one of the women's dormitories, or in approved houses. A competent matron is in charge of each women's dormitory.

Board.—The University operates on a self-service basis a modern, well-appointed Commons Dining Hall. Both regular weekly board and cafeteria service are provided. Exact cost records are kept and prices are adjusted in such manner as to give students the advantage of changing cost.

All women students, except those living in private families or commut-

ing, are required to take their meals at the Commons building. It is desirable that all freshman students take their meals there.

Checking Accounts.—Students are earnestly urged to arrange checking accounts in their home banks in order to avoid loss frequently resulting from keeping on hand considerable amounts of money. The Business Office will accept and cash all student checks. Such banking arrangements will also facilitate payment of registration bills which are strictly due and payable on registration day.

Self-Support.—Students obtain considerable financial aid by janitorships, by work in private families, at various restaurants, on the farm, and in the greenhouse. They also find employment with the power and service department and with the experiment station. However, so much depends upon the individuality of the student that the University can guarantee nothing in any particular case. For several years, the student employment bureau has been handled by the Christian Associations. Address all inquiries relative to self-support to the Secretary, Christian Work, Inc., Durham, N. H.

Withdrawal from University.—Students desiring to withdraw from the University should apply to the Registrar for permission and request papers of honorable dismissal. Students withdrawing without permission will have their grades reported as zero at the end of the term and all refunds withheld until notice of such withdrawal has been filed with the Registrar.

UNIVERSITY AIDS TO STUDENTS

Scholarships.—A limited number of scholarships are awarded annually for the purpose of aiding deserving students. Recently the large increase in student attendance has utilized in full all scholarships thus far provided. However, the trustees are anxious to supply scholarships to as many as possible of the really needy young men and women in New Hampshire. In order to do this most equitably they require full information of all applicants relative to the necessity for scholarship aid. Scholarship application blanks will be provided upon request to the Dean of the Faculty.

These scholarships will be forfeited at any time for misconduct. They will also be withdrawn from students in four-year courses who fail to secure an average grade of 60 during any one term, and only in cases of special financial necessity will they be restored by the President.

In general, scholarships granted to juniors and seniors will be treated as loans on interest after graduation.

A more detailed description of the several classes of scholarships follows:

Conant Scholarships.—There are twenty-four Conant scholarships, one for each town in Cheshire County and two for Jaffrey. Because of the largely reduced income from the Conant investments, these scholarships, for the present, will pay only the tuition of $75 ($50 for two-year students), plus a sum not exceeding $20, if the income allows. They are to be given to young men taking agricultural courses.

These scholarships are assigned annually and are good for one year only.

Application should be made direct to the Dean of the Faculty.

Grange Scholarships.—In order to equalize to some extent the distribution of scholarships throughout the state, each subordinate and Pomona Grange in New Hampshire is permitted to recommend each year a candidate for a scholarship paying the tuition charge of $75 ($50 for a two-year student). This scholarship may be used either by a four-year or two-year student and will be good for one year only. Application for the same must be made direct to the officers of the grange. The secretary of each grange will be furnished with an application form and this must be used by the approved candidate. The conditions laid down on the application form must be carefully observed. After being filled out and properly signed, it should be sent to the Dean of the Faculty. Upon approval, a scholarship will be forwarded to the candidate. The applications will be approved upon satisfactory evidence that the candidates will be unable to attend without the aid of the proposed scholarships. Candidates need not be members of the grange, but they must be resident within the state and within the jurisdiction of the appointing grange, or of that adjacent thereto. Scholarships will be held for the respective granges until July 15 each year. Those not then granted may be assigned by the University.

Hunt Scholarship.—A special scholarship paying tuition has been established by the trustees at the request of the United States War Department for the benefit of soldiers, or sons and daughters of soldiers, in the Regular Army. This scholarship is named in honor of Major William E. Hunt, New Hampshire College, 1899, and Colonel Charles A. Hunt, New Hampshire College, 1901, who have rendered conspicuous and gallant service as officers of the Regular Army before and during the World War. This scholarship will be granted each year and will be good for one year only. Application should be made direct to the Dean of the Faculty. An application form will be furnished which must be

used by the candidate. The conditions laid down on this form must be carefully observed. After being filled out and properly signed, it should be sent to the Dean of the Faculty. Upon approval, a scholarship will be forwarded to the candidate. The application cannot be approved without satisfactory evidence that the candidate will be unable to attend without the aid of the proposed scholarship. Preference will be given to a New Hampshire soldier.

Lougee Scholarships.—Beginning in 1921 the interest on $5,000 bequeathed by Amos Lougee of Somersworth, N. H., is to be expended for scholarships of $75 each ($50 for two-year students). They will be assigned each year and will be good for one year only. No applications can be approved without satisfactory evidence that the candidates will be unable to attend without the aid of the proposed scholarships. Until July 15 of each year, preference will be given to residents of Strafford County.

Applications should be made direct to the Dean of the Faculty. Application forms will be furnished which must be used by the candidates.

Senatorial Scholarships.—By vote of the trustees, twenty-four scholarships have been set aside, one for each senatorial district in the state. They are to be assigned each year, one by each state senator, in accordance with University regulations and as the senators may severally determine. Each scholarship will pay the tuition of $75 ($50 for a two-year student) and be good for one year only. Application must be made direct to the senator of the district in which the candidate is a resident. Application forms will be sent to each senator and these must be used by the approved candidates. The conditions laid down on these forms must be carefully observed. After being filled out and properly signed, the applications should be sent to the Dean of the Faculty. Upon approval, scholarships will be forwarded to the candidates.

The applications will be approved upon satisfactory evidence that the candidates will be unable to attend without the aid of the proposed scholarships.

Scholarships will be held for the respective Senatorial districts until July 15 of each year. Those not then granted may be assigned by the University.

State Scholarships.—By act of the Legislature a limited number of state scholarships, each paying tuition of $75 ($50 for a two-year student) may be granted to those students residents of New Hampshire who furnish satisfactory evidence that they would be unable to attend

without such aid. These scholarships will be assigned each year and will be good for one year only. Application should be made direct to the Dean of the Faculty. Application forms will be furnished which must be used by candidates. The conditions laid down on these forms must be carefully observed. In order to assure an equitable distribution of these scholarships, none will be actually assigned until after July 15 of each year.

State Federation Scholarships.—By vote of the trustees, five scholarships have been set aside for the State Federation of Women's Clubs to be assigned each year by the Executive Committee of that organization, in accordance with University regulations and as the committee may determine. Each scholarship will pay the tuition of $75 and be good for one year only. Application must be made direct to the president of the State Federation, who will be supplied with application forms which must be used by applicants. The conditions laid down on these forms must be carefully observed.

After being filled out and properly signed, the applications should be sent to the Dean of the Faculty. Upon approval, scholarships will be forwarded to the candidates.

The applications will be approved upon satisfactory evidence that the candidates will be unable to attend without the aid of the proposed scholarships. Candidates must be residents of New Hampshire. Scholarships will be held for the disposal of the State Federation until July 15 of each year. Those not then granted may be assigned by the University.

Valentine Smith Scholarships.—Through the generosity of the late Mr. Hamilton Smith of Durham, the sum of $10,000 has been given to establish the Valentine Smith scholarships.

"The income thus accruing shall be given to the graduate of an approved high school or academy who shall, upon examination, be judged to have the most thorough preparation for admission."

These scholarships yield $100 annually, and will be forfeited if an average rank of 75 per cent. is not maintained for each term.

Competitive examinations for this scholarship will be held June 25 and 26 in Durham, Keene, Laconia, Lancaster, Manchester and West Lebanon. Contestants must present credentials fulfilling the requirements for entrance, and must pass examinations in English, American history, algebra through quadratics, plane geometry and either physics or chemistry.

Requests for examinations should be forwarded to the Dean of the

Faculty at least one week before the beginning of the examination period, and must state the names and addresses of the students, the places at which they will present themselves, and the examinations desired.

Examinations are not restricted to residents of the state.

Loan Fund.—In accordance with a recent act of the New Hampshire Legislature the loan fund is being largely augmented by repayment of scholarship loans granted to juniors and seniors. Money will be loaned to needy students who are economical in their expenditures and who are working to pay a portion of their expenses. As the amount received is limited, loans will be granted usually to upperclassmen only. Emergency cases will, however, be considered on their merits.

All loans will be secured by notes, bearing interest after graduation or leaving the University, but no additional signatures or security will be required. When repaid, the money will pass into a revolving fund which will be limited strictly to loan fund purposes.

Prizes.—*Bailey Prize.*—Dr. C. H. Bailey of Gardner, Mass., and E. A. Bailey, B.S., of Keene, N. H., offer a prize of ten dollars for proficiency in chemistry.

Erskine Mason Memorial Prize.—Mrs. Erskine Mason of Stamford, Conn., has invested one hundred dollars as a memorial to her son, a member of the class of 1893, the income of which is to be given, for the present, to that member of the senior class who has made the greatest improvement during his course.

Parker Debating Cup.—The University of New Hampshire Debating League was reorganized in 1921, and is under the direction of the instructor in debating and public speaking in the University. Any secondary school of the state is eligible for membership. Preliminary contests are conducted at the schools, and a final contest is held at the University to determine the winner of the League. A prize cup, the gift of Walter M. Parker, Treasurer of the University, is awarded in rotation to the winners. Badges are awarded to the individual debaters and engraved certificates to the schools.

Alumni Prize Speaking Contest for students of any accredited high school of the state (provided they have not already won the first prize in a previous year) was first held in May, 1912. Three medals of the value of thirty dollars are provided by the Alumni Association for the winners. The contest is under the direction of the instructor in oral English.

Inter-Fraternity Scholarship Cup for Men is given annually to that fraternity whose general average for the year is the highest, and remains in the custody of the fraternity winning the cup for one year, or until such time as it may be awarded upon the same basis to another fraternity. At the end of ten years the cup will become the permanent property of that fraternity to which it has been awarded the greatest number of times.

Second Inter-Fraternity Scholarship Cup for Women is given by the Alpha Xi Delta fraternity to the women's fraternity having the highest average in scholarship throughout the year. It was awarded first for the year 1920–1921. At the end of five years it is to be given to that women's fraternity which has held it the greatest number of times out of the five.

Diettrich Cup.—This cup was given by the class of 1916 in memory of Rosina Martha Diettrich, a member of that class, who died a few weeks before graduation. The cup is to be awarded each year to the girl who attains the highest scholarship in her junior year. The cup is to remain in her possession throughout her senior year and until the next winner is named.

The University of New Hampshire Military Honor Medal.—This medal is made possible through the generosity of Major S. G. Eaton and the members of the S.A.T.C., on duty in December, 1918. Article 2, of the special order announcing the gift, reads as follows:

"From the sum of money given there shall be expended each year a sufficient amount to purchase an appropriate gold medal. The said medal will be awarded to that student who has taken military training during the preceding year and who has proved himself in the opinion of the board above provided to be the best soldier. The Student's Army Training Corps wishes it to be clearly understood that it does not wish the medal awarded on a basis of perfection at drill but rather on the strength of such qualities as physique, force of character, energy, mentality, courage, leadership, and in general such characteristics as advertise the owner to be of greatest value to his country in a military sense in the advent of another war."

Bartlett Prize.—Former Governor John H. Bartlett (University of New Hampshire, 1920, honorary) of Portsmouth, N. H., offers a prize of $50 each year, to be awarded at Commencement to that New Hampshire student, a member of the junior class, who ranks highest in scholarship for the year among those young men who have earned at least one-

half their expenses since entering the University. This prize was awarded first in June, 1921.

Chase-Davis Memorial Medals.—In the spring of 1909 the Glee Club voted to present a gold and a silver medal yearly in memory of Carl Chase, '09, of Webster, an enthusiastic member of the University football team and the Glee Club, and of John Worthen Davis,'11, of Concord, who were drowned in Great Bay, December 7, 1908.

According to the terms of this gift, the medals are awarded at commencement to seniors on a prescribed basis of athletic and scholarship achievement.

Chi Omega Prize.—The Chi Omega sorority of the University offers a prize of ten dollars for the best thesis written by a woman student in Sociology on a subject approved by the head of the sociology department. The theses submitted will be graded by a joint committee composed of the heads of the departments of sociology, English, and economics or history.

Phi Mu Medal.—The local chapter of Phi Mu offers a gold medal to the senior girls, to be awarded on the following basis: 50 points for excellence in physical education, determined by both skill and the spirit in which the work is carried; the remaining 50 points must be attained by evidence of unusual scholastic capacity, democracy, loyalty, and helpfulness in college associations and activities. No candidate will be considered who does not have an average grade for her college work above 80.

Pi Gamma Prize.—In order to promote high scholarship in Biology and the allied sciences, the Pi Gamma honorary fraternity offers a prize of $25 to be awarded at Commencement to that senior who shall rank highest in biological subjects throughout the entire four years of collegiate work. The amount of work carried in Biology, together with the average grade in all other subjects shall be considered in making this award. First offered, June, 1922.

Hood Prizes.—Through the kindly interest and generosity of Mr. Charles H. Hood of the class of 1880, thirty shares of the preferred stock of H. P. Hood & Sons, Inc., were given to the University in December, 1921 the income thereof to be used by the trustees for the encouragement, aid and benefit of deserving students upon such conditions and under such regulations as said trustees may from time to time prescribe and establish.

In accordance with the terms of the trust and carrying out the sug-

gestions of the donor, the trustees announce that for the present the income will be expended as follows:

First. *Hood Achievement Prize.*—A gold medal will be awarded annually to that member of the senior class whom the members of the three upper classes choose as giving the greatest promise of becoming a worthy factor in the outside world through his character, scholarship, physical qualifications, personal popularity, leadership and usefulness as a man among men.

Second. *Hood Dairy Prizes.*—A part of the Hood income will be devoted each year to paying a portion of the expenses of the members of a team or teams chosen for excellence in judging dairy cattle and sent to participate in intercollegiate or other dairy contests. Also suitable medals will be provided for the individual members of such teams.

Third. *Hood Supplementary Bequest.*—By a supplementary bequest in December, 1921, Mr. Charles H. Hood gave $20 for the purchase of suitable medals for the three students constituting the dairy cattle judging team in the fall of 1921 and $190 for the purchase of a suitably designed trophy to become the property of the University. The names of the winners of the prizes in dairy cattle judging are to be inscribed annually upon this trophy which will thus serve as a permanent record to the institution of their skill and accomplishments.

Thomas J. Davis Prize.—Thomas J. Davis, late of Duluth, Minn., a native and former resident of Durham, has provided funds, the present income of which is $30, for the establishing of Dairy and Household Science prizes as follows:

First,—$15 for competitive judging of dairy cattle by "Short Course Students," excluding all four-year students, and allowing a suitable handicap in favor of students who are taking a course of not more than four months.

Second,—$15 to young women taking a short course for competitive bread baking as a half unit and for dairy butter making as another half unit.

STUDENT ORGANIZATIONS

Student Publications.—The *New Hampshire*, a weekly newspaper giving undergraduate and alumni news. Subscription price, $2.00 per year.

The *Granite*, an annual issued by the Junior class.

Student Council is an organization of senior students, one from each fraternity and one from the non-fraternity men, which regulates intramural activities.

Young Men's Christian Association sums up its program by the terms "Christian Life" and "Community Service." Christian life is actively promoted by associate student membership in the community church; campus meetings addressed by able Christian statesmen; attendance at Intercollegiate Christian summer conferences, such as Silver Bay; and religious education and Bible study classes.

Young Women's Christian Association through its cabinet and large membership conducts a number of discussion groups, promotes social service work, annually sends a large number of delegates to the summer conference at Silver Bay, N. Y., and is active in general meetings in coöperation with the Y.M.C.A.

Christian Work.—Christian community service is encouraged by various activities, including a reception to new students; publishing a handbook which is given to all new students; operating an employment bureau; providing a second-hand text-book exchange; and maintaining a club room. Outside the campus such service includes work with boys and girls. It involves the obtaining of leaders for young people's groups, deputations of students for visiting nearby communities. These deputations speak to young people's organizations, and frequently conduct entire church services.

The Advisory Board for Christian Work employs an interchurch students' pastor and a woman secretary. They coöperate with the Y.M.C.A. and Y.W.C.A. in the promotion of their work, as well as in carrying definite responsibility for the pastoral work among the students. Generous contributions are received yearly from the Congregational, Methodist Episcopal and Presbyterian organizations. Everything possible is done in a social and pastoral way for the students of all religious denominations, whether Protestant, Catholic or Jewish.

Young People's Organization, a movement of, for, and by the students, meets each Sunday evening at the community church to discuss vital religious topics and campus problems. A social hour is always enjoyed in connection with these discussions.

Athletic Association is an organization composed of students of the University. Every undergraduate student automatically becomes a member of the association upon enrollment in the University by paying the regular fees. This entitles each student to free admission to all home athletic games.

Men's Glee Club is an organization formed for the purpose of assisting in the development of music and in the bringing together those men

who have ability to sing or who desire to develop their voices. Candidacy for the club is open to all men students. It is customary each year for the club to take an extensive trip through the state, visiting many cities and towns and giving concerts in each.

Girls' Glee Club was established for the purpose of promoting interest in, and knowledge of, choral singing. It has been the custom of the organization to give operettas or Shakespearean plays at Commencement time, besides the annual concerts given in the middle of the year. Invitations are accepted from time to time to give concerts in surrounding towns and cities.

Orchestra is an organization formed for the purpose of furthering the musical ambitions of students desiring such an opportunity.

Agricultural Club is the common meeting-ground of all the agricultural students. Its primary object is to discuss agricultural topics of scientific interest, and to familiarize its members with the use of parliamentary law. An incidental object is to secure the social and literary advantages of a club organization. It has a large and well equipped club room on the third floor of Morrill Hall.

Mask and Dagger, a dramatic club organized in 1915, is open to all students interested in dramatics. The club gives regular programs in dramatic art to which the public is invited. A smaller group chosen by competition within the club presents plays at various times during the year. The club conducts an annual prize contest for an original play written by a student. This play is one of those presented by the club.

Book and Scroll is a literary society which was organized in 1915, for the study of poetry. It is an honorary society, membership being granted only to those seniors and juniors who attain an average of 80, or over, in English. Two contests are held each year, one of these being an original poetry contest. The open meetings are in charge of different members of Book and Scroll, and interesting programs dealing with the works of not only classical poets but also modern writers are enjoyed.

Engineering Society was organized in 1915. Its membership includes students in engineering and the engineering faculty. The object of the society is to get its members in touch with various engineering problems for which there is seldom time for discussion in the class room. This is accomplished through lectures by professional men, student demonstrations, and motion pictures furnished by manufacturing concerns. At least two meetings each year are devoted to promoting fellowship among the members.

Alpha Chi Sigma was founded at the University of Wisconsin in December, 1902. It is composed of men who are to take up some branch of chemistry as their life work. Mu chapter was established in the University in 1911.

Alpha Zeta is the professional fraternity of agricultural students. Granite chapter was organized here in 1903. It is not a social fraternity, and no student is eligible until after the first term of his sophomore year. Membership then is conditional upon the student's ranking in the upper two fifths of his class and upon his future promise of a successful career in some line of agricultural work.

Pi Gamma, an honorary biological fraternity, was organized in 1916 for the purpose of promoting high scholarship and special study for the advancement of research work in zoölogy and other allied subjects. Four regular meetings are held each month, two of which are devoted to scientific discussions.

Phi Lambda Phi was organized by the department of physics in 1919. The members are students of high standing who are interested in some phase of physics. The object of the club is to hold discussions intended to result in a broader understanding of physics and to create a sense of good fellowship between instructor and student.

Le Cercle Français, an honorary society, was established in the spring of 1919 to offer competent students an opportunity to acquire a speaking knowledge of the French language and to awaken a real interest in all things pertaining to the French nation.

Phi Kappa Phi is a national honorary fraternity founded in 1897 for the purpose of promoting the highest grade of scholarship.

A chapter was established at this University in 1922. Its membership consists of the upper 15 per cent of the senior class. Members are elected at the beginning of the first and third terms.

At the same time honorary members are chosen from alumni and faculty.

Casque and Casket was organized in 1915 by representatives of the fraternities who felt that the influence of the several fraternities could be strengthened if a closer union between them could be secured. The fraternity is composed of students of the upper classes, having an equal number of members from each fraternity. They are associated together to lend what influence and assistance is possible in the advancement of the University interests. There are now nine fraternities represented in the membership.

Pan Hellenic, established in 1905, is an organization which transacts all business of common interest to the five women's fraternities. Pan Hellenic is composed of two members from each fraternity.

Band is organized for the purpose of presenting suitable band music at athletic games, military drill, and other important events. Standard marches, operatic selections, college songs, and the better type of popular songs constitute the repertory. To those men who can play a band instrument it affords opportunity for developing that ability under competent leadership. Credit of one term-hour is given those men who qualify as Bandsmen, and who are constant in attendance upon rehearsals and public performances. Since the number of band instruments owned by the University is limited, students who can do so, should utilize their own.

Forestry Club is an organization to bring together students who are interested and are specializing in the study of Forestry.

International Club was organized in 1920 for the purpose of promoting the mutual interests, locally and internationally of University students of foreign birth.

Mathematics Club is an organization of students majoring in mathematics for the purpose of cultivating further knowledge of the science and its applications.

Radio Club is an organization which was founded in 1919 for the purpose of pursuing scientific research work in the field of the wireless telegraph and telephone.

Forum is a literary and debating club organized in 1921, open to men interested in oral English. It manages all intercollegiate debates and those activities of the Interscholastic Debating League which are conducted at the University. The Forum also presents a series of debates during the winter term. It devotes itself regularly to programs in all the departments of oral English. Many of its meetings are open to the public.

METHODS OF ADMISSION

The University of New Hampshire will admit without examination all candidates who are graduates of high schools or academies of New Hampshire that are approved by the State Board of Education, provided the entrance requirements are met.

Graduates of schools specially approved by the University will be admitted on the same terms as graduates of approved schools in New Hampshire.

Graduates of other high schools and academies will be admitted on passing examinations in fifteen units. However, the University cannot agree to give examinations in certain vocational subjects involving mainly practical work. Instead, it may require special certification in such subjects.

Cases not covered by the above statements will be decided by the entrance committee of the faculty.

Candidates for advanced standing are admitted on the basis of the work completed at the institutions from which they come.

COLLEGE UNIT REQUIREMENTS

There are three colleges included within the University of New Hampshire: the College of Agriculture, the College of Liberal Arts, and the College of Technology. These colleges are defined and described elsewhere in this announcement.

An entrance unit represents one study of four or five recitations a week for one year. It is assumed that two hours of manual training or laboratory work are equivalent to one hour of classroom work.

Candidates for admission to the freshman class of each college must show evidence, either by credential or by examination, that they are prepared in fifteen units as indicated in the following table:

Required Units		College of Agriculture	College of Liberal Arts	College of Technology
Group A	English,	3	3	3
*Group B**	Mathematics,	2	2	3

* A candidate for admission to the College of Liberal Arts who offers two units in a single foreign language may substitute for the two units required in Mathematics two additional units in subjects named in groups A, C, D and E above.

Students entering the College of Technology must offer 15 units, three of which should

Group C	Social Science and History,	1	1	1
Group D	Natural Science,	1	1	1
Group E	Foreign languages,	0	0	0
Group F	Vocational subjects,	0	0	0
		7	7	8
	Elective Units	8	8	7
	Total for admission,	15	15	15

Elective units may be offered from all groups.

The credentials to be rendered by Headmasters or Principals must state the time of graduation, the subjects studied, the number of entrance units in each, the grades attained by the student, and the passing grade of the school.

The credential forms to be used will be furnished on application to the Registrar.

Entrance by Examination.—Examinations will be given at the University at the time of opening in September. They will also be given in connection with the Valentine Smith examinations in June. Requests for these examinations should be forwarded to the Dean of the Faculty at least one week in advance.

ENTRANCE REQUIREMENTS

GROUP A. ENGLISH

The examination paper in English will be based upon the principle that the way to learn to write is to read.

All candidates will be required to write a series of short themes which will show an adequate knowledge and thorough appreciation of certain great English classics as literature—as "the life blood of the mind." The classics selected are as follows: Shakespeare's Merchant of Venice, Henry V, and Macbeth; one novel each by Scott, Dickens, George Eliot, Stevenson, Cooper and Hawthorne; one essay each by Macaulay, Ruskin and Lowell; the subject-matter and nature of the poetry of Wordsworth, Byron, Tennyson, Longfellow and Whittier.

be in Mathematics including Algebra, Plane and Solid Geometry, but students offering only two units of Mathematics including Algebra and Plane Geometry may be admitted conditioned in one unit of Mathematics.

As a special test in spelling, grammar, punctuation and paragraphing, the candidate will be required to write a short theme upon some subject pertaining to the home or school life of the average high school senior.

An optional question will be offered for the purpose of discovering the candidate's familiarity with the best modern periodical literature.

GROUP B. MATHEMATICS

1. Elementary Algebra.—The four fundamental operations for rational algebraic expressions. Factoring, determination of highest common factor and least common multiple by factoring. Fractions, including complex fractions, and ratio and proportion. Linear and quadratic equations, both numerical and literal. Problems depending on linear and quadratic equations. Radicals, including the extraction of the square root of polynomials and of numbers. Exponents, including the fractional and negative.

2. Advanced Algebra.—The formula for the *n*th term and the sum of the terms of arithmetical and geometrical progressions, with applications. The theory and use of logarithms, without involving the use of infinite series. The binomial theorem for positive integral exponents. Complex numbers, with graphical representation of sums and differences. Determinants limited to simple cases. The elements of the theory of equations.

3. Plane Geometry.—The usual theorems and constructions of good text-books, including the general properties of plane rectilineal figures; the circle and measurement of angles; similar polygons; areas; regular polygons, and the measurement of the circle. The solution of numerous original exercises, including loci problems. Applications to the measurement of lines and plane surfaces

4. Solid Geometry.—The usual theorems and constructions of good text-books, including the relations of lines and planes in space; the properties and measurement of prisms, pyramids, cylinders and cones; the sphere and the spherical triangle. The solution of numerous original exercises, including loci problems. Applications to the measurement of surfaces and solids.

5. Plane Trigonometry.—The subject-matter of plane trigonometry as presented in good text-books, including the solution and use of trigonometric equations of a simple character, the use of logarithms, the solution of right and oblique triangles, and practical applications.

6. Review Mathematics.—A general mathematics review during half of senior year is recommended, especially for students preparing for college engineering courses. A certificate covering the work of not more than one unit will be accepted for entrance. No examinations will be given.

GROUP C. SOCIAL SCIENCE AND HISTORY

This group includes history, political economy, and commercial law.

Although there are excellent text-books in history, an adequate preparation can not be obtained by text-book work alone. Some collateral work is necessary, whatever text-book is used, and with certain text-books a large amount is necessary. The details of the preparatory work in history are fully stated in "A History Syllabus for Secondary Schools," by the New England History Teachers' Association, published by D. C. Heath & Co., Boston, 1904. Details are also stated in "Standard Program for the Secondary Schools of New Hampshire, Department of Public Instruction, Concord, N. H."

1. Ancient History.—This may include the earliest nations and the period to 800 A.D., or it may be limited to Grecian History and Roman History to the fall of the Western Roman Empire.

2. Mediaeval and Modern History.

3. English History.

4. American History and Civics.—The work may conform to the course in American constitutional history described in the "Standard Program" or to the course in American history developed in nearly a hundred pages of the "Syllabus." It is assumed that in any case a reasonable amount of time is to be given to the study of the Constitution of the United States.

5. Political Economy.—(1) The study of a standard text. (2) At least six topics investigated by outside reading.

6. Commercial Law.—(1) Study of a standard text. (2) The study of a total of not less than thirty-six specific cases.

GROUP D. NATURAL SCIENCE

A notebook, carefully kept and examined by the teacher, is an essential part of all laboratory work in science.

1. Botany.—The work in botany should consist of (1) the study of a standard text; (2) four or five exercises a week, at least one of which

should be laboratory work. Either a half or the whole of a year's work will be accepted.

2. **Chemistry.**—Elementary inorganic chemistry should cover (1) the more common nonmetallic and metallic elements with their most important compounds, together with an introduction to the general theoretical principles; (2) calculations based upon changes of gaseous volumes and chemical equations. A year's work should consist of four or five exercises per week, at least one of which should be laboratory work.

3. **Physics.**—The standard work in physics should consist of (1) the study of a standard text; (2) not less than forty experiments worked out in the laboratory by each student and properly recorded in a suitable notebook.

4. **Zoölogy.**—A study of the fundamental principles of animal structure and the dissection of type forms. The student should become familiar with the characteristics of the various phyla of the animal kingdom. The study should consist of four or five exercises a week, at least one of which should be laboratory work. Either a half or the whole of a year's work will be accepted.

5. **General Science.**—To meet a recent movement in the disposition of the science work in the high schools, a course in general science which amounts to at least four exercises a week for one year will be accepted. Such a course may include something of the biologic and earth sciences, the sciences employed in household economy, and the more common phenomena of physics and chemistry.

GROUP E. FOREIGN LANGUAGES

1. **French.**—Work of the first year should include (1) careful drill in pronunciation, (2) drill upon the rudiments of grammar, (3) abundant translation of simple English prose into idiomatic French, (4) reading of from 100 to 175 pages of French prose, (5) writing French from dictation. Work of the second year should include (1) the reading of from 250 to 400 pages of easy modern prose, (2) constant practice in translating from English into French variation of the text read, (3) frequent paraphrases of the text read, (4) dictation.

2. **German.**—Work of the first year should include (1) careful drill in pronunciation, (2) drill upon the rudiments of grammar, such as the inflection of the articles, the common nouns, adjectives, pronouns and

strong and weak verbs; upon the uses of the prepositions, the model auxiliaries, and the rules of syntax and word order, (3) writing from dictation, (4) the reading of from 75 to 100 pages of prose, (5) translation from English into German. Work of the second year should include (1) the reading of from 150 to 200 pages of prose, (2) constant practice in translating from English into German variations of the text read, (3) dictation, (4) continued drill upon the rudiments of grammar, (5) frequent paraphrases of the text read.

3. Latin, Elementary.—Grammar and the equivalent of four books of Caesar. Two years' work.

4. Latin, Advanced.—Equivalent of Virgil, six books, and Cicero, six orations.

GROUP F. VOCATIONAL SUBJECTS

1. Agriculture.

Agronomy.—A text-book or lecture and recitation subject upon the formation, classification, composition, physical properties and tillage of soils; the kinds, use, value, and function of different chemical fertilizers; the use, composition, and preservation of farm manures; the planting, cultivating, harvesting, use, and marketing of the different kinds of field crops. The text-book and lecture work should be supplemented by field and laboratory exercises. Four or five periods a week for one year.

Animal Husbandry and Dairying.—A text-book and recitation subject upon the types and breeds of horses, cattle, sheep, swine, and poultry with practical exercises in stock judging; a study of the principles of feeding, the classification of animal foods, with practice in computing and mixing rations. Also a subject upon the composition, properties, care and handling of milk, with practical exercises in testing milk, cream, and butter with the Babcock test. Four or five exercises a week for one year.

Horticulture.—A text-book or lecture and recitation subject upon the classes and varieties of fruits; the location and fertilization of orchards; the pruning, grafting, and spraying of fruit trees, with some study of fungous and insect pests. Practical exercises in picking, packing, and marketing of fruit. Also a study in vegetable growing, in which each student learns the classes, varieties, uses, and adaptations of our most important vegetables. Practical gardening work in growing vegetables. Four or five exercises a week for one year.

Rural Economics and Farm Management.—A text-book, lecture and recitation subject upon the economic relations of land, labor, and capital. A detailed study of the cost of producing and marketing farm and garden crops. Also a study of the business end of farming, buying and selling methods, types of farming, systems of rotation, the keeping of farm accounts, and the making of inventories. Four exercises a week for one year.

2. **Commercial Subjects.**—Bookkeeping, commercial arithmetic, commerical geography, stenography, and typewriting.

3. **Domestic Arts.**—Foods and cookery, dressmaking, household sanitation and mechanical appliances, household economics, household design and decoration.

4. **Mechanic Arts.**—Casting, drawing, forging, machine work, molding, pattern-making, woodwork.

SPECIAL COURSES

A mature student who is not a candidate for a degree may be admitted as a special student for one year upon the approval of the Entrance Committee and the dean of the college in which he desires to work. In addition, each application for a subject must have the approval of the head of the department whose work the applicant desires to take. No credit earned by a special student shall count toward a degree except upon recommendation of the Entrance Committee and the vote of the faculty.

REQUIREMENTS FOR DEGREES

ADVANCED DEGREES

Advanced degrees may be conferred by the trustees upon candidates who have received the Bachelor's Degree from this University, or from an institution of like standing, upon the fulfillment of the following requirements:

MASTER'S DEGREE

Before any candidate registers, it is necessary that his qualifications and the proposed course of study, as recommended by the heads of the departments in which the major and the minor work are to be done, be passed upon by the Committee on Graduate Degrees.

In no case shall the recommendation for a Master's Degree be given for less than one year in residence.

A minimum of 54 credit hours shall be required, of which approximately two-thirds shall be devoted to a major and a thesis, and approximately one-third to a suitable minor or minors. Of the total, at least 18 hours shall represent work regularly scheduled in classes. No work will be accepted for credit that is essentially of an elementary nature. Of the total credits, no more than half will be accepted from another institution.

If a graduate is serving as a member of the instructional staff, the Master's Degree shall not be recommended to be given for less than two years' work, at least one year of which shall be in residence, and then only upon the completion of the equivalent of the requirements stated in the preceding paragraph.

Before a candidate is recommended for an advanced degree, he shall pass an oral examination before a special committee designated by the Committee on Advanced Degrees and including, among others, the heads of the departments in which the major and the minors have been taken.

PROFESSIONAL DEGREES

The professional degrees, Mechanical Engineer (M.E.) and Electrical Engineer (E.E.), may be given under the following conditions:

1. A candidate must be a graduate of this institution, and must have specialized in the subjects represented by the professional degree sought.

2. A candidate must have completed four years of superior work in responsible engineering positions.

3. A candidate must submit a satisfactory thesis embodying the results of original research within the field of the degree sought.

4. A recommendation for the conferring of a professional degree will require the approval of the Technology Committee and the Committee on Graduate Degrees.

For details concerning the regulations governing the conferring of degrees, address the Dean of the Faculty.

UNDERGRADUATE DEGREES

The University confers two undergraduate degrees: Bachelor of Science and Bachelor of Arts.

The degree of Bachelor of Science is conferred upon students graduating from the College of Agriculture, from the College of Technology, and upon students graduating from the College of Liberal Arts, who have elected the Home Economics Course, the Arts Course in Chemistry, or who have majored in the Departments of Architecture and Drawing, Botany, Economics and Accounting, Education and Psychology, Entomology, Mathematics, Physics, Sociology, Zoölogy and Geology. The degree of Bachelor of Arts is conferred upon students graduating from the General Arts Course who have majored in the Departments of English, Modern Language, or History and Political Science.

College of Agriculture Requirements

The completion of 216 term hours.*

The completion of the subjects required in any one of the four-year agricultural courses.

Students graduating from the four-year courses in agriculture must present to the dean of the College of Agriculture, on or before the second Tuesday preceding Commencement, satisfactory evidence of having had practical experience in farm work, either through having lived on a farm for at least two years subsequent to the age of 12, or through having worked on a farm for at least six months subsequent to the age of 16.

Students graduating from the Forestry Course must have spent at least three months in practical forest work, which time will be counted as a part of the six months' requirement.

* A term hour is one recitation or one laboratory period per week for one term.

Students graduating from the Horticultural Course or the Poultry Course must have spent five months, including the spring term of the junior year, in supervised practice work on a farm of recognized standing.

College of Liberal Arts Requirements

Group Requirements

The work of this College is organized on a modified elective system. A part of every student's curriculum is prescribed. Each student is required to lay sufficiently broad foundations in English, other languages, the physical sciences, the social sciences, inclusive of history, and mathematics. The remainder of the student's work is elective.

Each Liberal Arts student shall elect at least 27 term hours in each of the following groups:

Group I.—Art, History, Language, Literature: English, French, German, History, Household Arts, Industrial and Fine Arts, Latin, Library Science, and Spanish.

Group II.—Mathematics and Natural Science: Agricultural* subjects, Architecture, Astronomy, Botany, Chemistry, Drawing and Descriptive Geometry, Electrical and Mechanical* Engineering, Entomology, Geology, Household Science, Mathematics, Advanced Military Science, Physics, Zoölogy.

Group III.—Social Science: Economics, Education, Political Science, Psychology, Social Science, Sociology.

Major Requirements

Each Liberal Arts student shall, at the beginning of the first term of his second year, select a department to be known as his major department.

In this major department he shall complete 27 term hours in which he shall make a grade of 75 or better.

In case of departments in which less work is offered than the amount required for the major, the shortage may be made up from such other related departments as the head of his major department may prescribe.

Minor Requirements

Each student shall, with the approval of the head of his major department, elect, for a minor, 27 term hours of subjects related to his major.

* Part of minor only.

1. General Arts
   The completion of 216 term hours,* of which an average of 18 may be required each term.
   The completion of English 1.5–a, 2.5–b, 3.5–c†, 4–a, 5–b, 6–c.
   The completion of the military and physical education requirements or their equivalent.
   The completion of the major, minor and group requirements.
2. Home Economics.
   The completion of 216 term hours.*
   The completion of the subjects required in one of the Home Economics courses.
3. Arts Course in Chemistry.
   The completion of 216 term hours.*
   The completion of the subjects required in the Arts Course in Chemistry.
4. Arts Course in Architecture.
   The completion of 216 term hours.
   The completion of the subjects required in the Arts Course in Architecture.

College of Technology Requirements

The completion of 216 term hours.*
The completion of the studies in any one of the engineering courses.

THESES

The preparation of a thesis upon some subject connected with the work of the University may be required by the committee on degrees.

The subject of a thesis, together with a written approval by the head of the department concerned, must be filed with the registrar within one week of the opening of the second term of the senior year. The thesis is to be submitted to the head of the department not later than the second Tuesday preceding Commencement day.

It is to be typewritten or printed upon standard thesis paper, eight and one-half by eleven inches, medium weight, and must be neatly bound in black cloth, and gilt-lettered on the first cover with title, name of author, degree sought, and year of graduation. This bound copy is to be filed with the librarian before Commencement day.

* A term hour is one recitation or one laboratory period per week for one term.
† Does not count towards major, minor or group requirements.

COURSES

The University is closely related to the public school system of the state, continuing the work of the high school, and it is open to both men and women. In accord with the origin and function of the University, its courses are essentially practical, leading directly to the student's preparation for a successful livelihood.

I. College of Agriculture.

a. Four-Year Courses.

1. General Agriculture.
2. Agricultural Chemistry.
3. Animal Husbandry.
4. Dairy Husbandry.
5. Forestry.
6. Horticulture.
7. Poultry Husbandry.
8. Teacher Training.

b. Two-Year Course in Agriculture.

c. Farmers' and Home Makers' Week.

II. College of Liberal Arts.

a. Four-Year Courses.

1. General Arts and Science.
2. Home Economics.
3. Arts Course in Chemistry.
4. Arts Course in Architecture.

III. College of Technology.

a. Four-Year Courses.

1. Chemical Engineering.
2. Electrical Engineering.
3. Mechanical Engineering.
4. Architectural Construction.
5. Industrial.
6. Teacher Training.

FOUR-YEAR COURSES

COLLEGE OF AGRICULTURE

FREDERICK W. TAYLOR, *Dean*

DEPARTMENTS

AGRICULTURAL CHEMISTRY
AGRONOMY
ANIMAL HUSBANDRY
BOTANY
DAIRY HUSBANDRY
ENTOMOLOGY
FORESTRY
HORTICULTURE
POULTRY HUSBANDRY

This division of the university offers a four-year course for the general education and scientific training of students in the various phases of agriculture. The lecture and recitation work of the classroom is supplemented largely by practical exercises in the laboratories. Seminar subjects are also given especially for seniors and advanced students. During the freshman year all agricultural students take the same work. At the beginning of the sophomore year those desiring to major in Agricultural Chemistry or in Forestry must take certain prescribed subjects relating to these lines of work. Other students will continue the regular work of the sophomore year and will select their major course at the beginning of the junior year. The work of the first two years for all of the agricultural students consists mainly of subjects in the fundamental sciences of agriculture and of basic subjects in the various departments of applied agriculture.

Many of the graduates of the four-year course return to the farm for the purpose of putting into practice the knowledge and training of their college work, and many of them have become successful and prosperous citizens of their communities; others, who have no farms of their own, accept salaried positions as superintendents or foremen on the dairy, fruit, stock or poultry farms of large owners; still others take positions as teachers of science and agriculture in our secondary schools, or as assistants in our agricultural colleges, experiment stations or extension service work.

The courses from which the agricultured student may now make his selection are as follows:

1. General Agriculture.
2. Agricultural Chemistry.
3. Animal Husbandry.
4. Dairy Husbandry.
5. Forestry.
6. Horticulture.
7. Poultry Husbandry.
8. Teacher Training.

General Agriculture.—This course is offered especially for the student who wishes to secure a broad, general training in all the important branches of agriculture without specializing in any particular one. The fundamental sciences of chemistry, botany, biology, physics and economics are studied together with their application to the arts of field crop production, orcharding, dairying, farm management, poultry raising and the handling of the farm woodlot. The student, therefore, who expects to engage in general farming will find this so-called general course with its wide range of elective subjects a most profitable and interesting one.

Agricultural Chemistry.—This course is designed to meet the needs of those students who desire a working knowledge of chemistry in its relation to agriculture. It offers a good opportunity for students to obtain considerable training in the fundamental sciences as a basis for graduate work in the various lines of agricultural work which involve the applications of chemistry. Numerous electives are offered which enable the student to obtain a more general training or to elect considerable work in the applied departments of the division. Teaching, investigational and commercial positions are open to students trained in the chemistry of plants and animals, soils, fertilizers, insecticides, fungicides, foods and nutrition. The department is particularly fortunate in being associated with the experiment station and in that connection having charge of the chemical analysis of feeds, fertilizers, lime and insecticides and fungicides for the State Department of Agriculture. This furnishes an opportunity for the students to come in contact with the inspection work and research work of the department and to have the benefit of its equipment.

Animal Husbandry.—This course is offered to the student who wishes a specialized training in the practical and intelligent management, selecl tion, breeding and feeding of livestock, including horses, beef and dua-purpose cattle, sheep and swine. This work is arranged so that the student may elect a reasonable number of subjects in horticulture, forestry, dairying, poultry keeping and other branches of general farm activity, thus fitting him for the management of a general livestock farm. The course also serves to prepare students for the more specialized requirements of civil service and other public employment.

Dairy Husbandry.—The Dairy Husbandry Department offers subjects in dairy production (that is, the care, feeding and management of dairy cattle), and in dairy manufactures (that is, the handling, distrib-

uting and manufacture of dairy products). The department has at its disposal the dairy building, with modern equipment, and the college dairy herd of 70 pure bred animals. Excellent facilities are thus provided for teaching a dairy husbandry course.

Forestry.—By selecting the forestry course the student will be able to fit himself for practical work upon graduation, or to enter a graduate forest school. The first two years in the fundamental sciences, and the basic subjects in applied agriculture, furnish an excellent preliminary training for any forestry student. The college forest of sixty acres of old-growth pine and hemlock, and other areas of natural and planted growth, furnish the laboratory for the forestry student. Ample opportunity is given to study the various forest problems in the open as well as in the classroom.

Horticulture.—This course of study is arranged to teach the application of fundamental sciences, which the student has learned in his freshman and sophomore years, to the problems of growing fruit, vegetables and flowers. The study of insects and diseases (the control of which forms an important part of the work of the horticulturist) is required, as is also work in plant physiology which forms a basis for understanding the growth and development of plants. During the junior and senior years opportunity is given for the student to elect subjects in other branches of agriculture which may be helpful in meeting his own particular problem. The horticultural department is well equipped with gardens, orchards, greenhouses and laboratory, for the study of the different phases of this industry, especially fruit growing, which is so prominent in the agriculture of the state.

The horticultural department also has equipment and facilities for instruction in the handling of bees and in the production of honey, and is now offering work along these lines to both four-year and two-year students.

Poultry.—This course of study is designed for those students who desire the necessary information and training to teach poultry husbandry, or to operate a poultry plant. The college plant, with a capacity of 1,400 hens, affords ample opportunities for laboratory work and for meeting all the practical problems of the industry which the poultryman may encounter. As a part of the prescribed work, the student will be required to spend five months, including the spring term of the junior year, at a commercial plant of recognized standing.

Teacher Training.—Under the provisions of the Smith-Hughes Act, the University of New Hampshire has been designated as the institution in this state for the training of teachers of agriculture. This course gives the young man a broad training in the fundamental sciences and in general agriculture. In addition, he receives professional training in such educational subjects as psychology, principles of education, methods of teaching and supervised practice teaching. Students who complete the course and who have had the requisite amount of practical experience on the farm will be accredited as teachers.

There is a rapidly increasing demand for teachers of agriculture in our secondary schools. Local school boards are beginning to more fully appreciate the value of instruction in agriculture for the boys of the community who will not have the opportunity to continue their studies at the University. As a result, there are many good paying positions open for the young men who wish to make the teaching of agriculture a profession.

UNIVERSITY OF NEW HAMPSHIRE

COLLEGE OF AGRICULTURE

ALL COURSES

Freshman Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term "C"*
Eng. 1–a, 2–b, 3–c (*English Composition*)	3	3	3
Bot. 1–a, 2–b, 3–c (*Elementary Botany*)	3	3	3
Chem. 1–a, 2–b, 3–c (*Inorganic Chemistry*)	3	3	3
Chem. 5–c (*Qualitative Analysis*)			3
A. H. 1–a (*Breeds of Livestock*)	4		
Agric. 1–b (*Survey of Agriculture*)		1	
For. 1–a (*Principles of Forestry*)	4		
Math. 21–b (*Elements Math. Analysis*)		3	
Zoöl. 30–b, 31–c (*General Zoölogy*)		3	3
Mil. Sci. 1–a, 2–b, 3–c (*Military Art*)	1½	1½	1½
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
	19	18	17

Sophomore Year

(All courses except Agricultural Chemistry and Forestry)

Agron. 1–a (*Agricultural Engineering*)	4		
Agron. 4–c (*Soils*)			4
Agr'l Chem. 1–a (*Organic Chemistry*)	3		
Agr'l Chem. 2–b, 3–c (*Agricultural Chemistry*)		3	3
Ento. 1–a (*Economic Entomology*)	4		
Poul. 1–a (*Farm Poultry*)	3		
Phys. 1–a, 2–b (*Introductory Physics*)	3	3	
Bot. 10–b, 11–c (*Bacteriology*)		3	3
D. H. 1–b (*Farm Dairy*)		4	
Geol. 1–b (*Elementary Geology*)		3	
Hort. 1–c (*Vegetable Gardening*)			2
Hort. 3–c (*Practical Pomology*)			2
*A. H. 2–c (*Livestock Judging*)			2
*D. H. 2–c (*Dairy Cattle Judging*)			2
*Draw. 10–c (*Agricultural Drawing*)			2
*Hort. 19–c (*Beekeeping*)			2
*Shop 7–c (*Woodshop*)			2
Mil. Sci. 4–a, 5–b, 6–c (*Military Art*)	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
	19	18	18

* One of the five subjects noted must be taken; Teacher-Training students must take Woodshop.

Junior and Senior Years

Note 1.—At the beginning of the junior year students will choose their major course. Their registration card must then be approved by the head of the department in which the major is taken.

Note 2.—During the junior and senior years 9 credit hours of so-called cultural subjects must be taken by all students, except those in the Teacher-Training course.

Note 3.—Subjects starred are recommended, but not required.

Note 4.—A total of 216 credit hours is required of all students for graduation.

COLLEGE OF AGRICULTURE

GENERAL AGRICULTURE

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Agron. 2–a (*Forage Crops*)	3		
Econ. 1–a, 2–b (*Elementary Economics*)	3	3	
Agron. 3–b (*Cereal Crops*)		3	
Econ. 5–b (*Rural Economics*)		3	
Agron. 7–c (*Farm Accounting*)			3
Eng. 60–c (*Public Speaking*)			3
Elective	12	9	12

Senior Year

Agron. 8–a (*Farm Management*)	4		
A. H. 3–a (*Feeds and Feeding*)	3		
Eng. 73–a (*Expository Writing*)	3		
Agron. 6–b (*Fertilizers*)		3	
Elective	8	15	17

AGRICULTURAL CHEMISTRY

Sophomore Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Chem. 20–a, 21–b, 22–c (*Organic Chem.*)	2	3	3
Chem. 18–b, 19–c (*Quan. Analysis*)		5	7
Agr'l Chem. 1–a, 2–b, 3–c (*Agr'l Chem.*)	3	3	3
Ento. 1–a (*Prin. of Econ. Ento.*)	4		
Phys. 1–a, 2–b, 3–c (*Introductory Physics*)	3	3	3
Math. 2–a, 3–b (*Algebra*)	3	3	
Mil. Sci. 4–a, 5–b, 6–c	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c	½	½	½
	17	19	18

Junior Year

Math. 1–a (*Trigonometry*)	3		
Geol. 1–b (*Elementary Geology*)		3	
Agron. 4–c (*Soils*)			4
Chem. 29–a, 30–b, 31–c (*Physical Chem.*)	3	3	3
Chem. 24–a, 25–b (*Organic Chem. Lab.*)	2	2	
Bot. 10–b, 11–c (*Agr'l Bacteriology*)		3	3
Agr'l Chem. 7–a, 8–b, 9–c (*Agr'l Analysis*)	4	4	4
Ger. or Fr	3	3	3
Elective	3		1
	18	18	18

Senior Year

Econ. 1–a, 2–b (*Prin. of Economics*)	3	3	
Econ. 5–b (*Rural Economics*)		3	
Eng. 73–a (*Expository Writing*)	3		
Chem. 42–a (*Physical Chem. Lab.*)	2		
Eng. 60–c (*Public Speaking*)			3
Agr'l Chem. 13–a, 14–b, 15–c (*Thesis*)	3	3	3
Agr'l Chem. 4–b, 5–c (*Physiological Chem.*)		3	3
Elective	7	6	9
	18	18	18

Elective Subjects Recommended:	*Fall Term ("A")*	*Winter Term ("B")*	*Spring Term ("C")*
Agron. 2–a, 3–b	3	3	
A. H. 3–a	3		
Hort. 5–a	3		
Fr. or Ger. 4–a, 5–b, 6–c	3	3	3
Psy. 1–a, 2–b, 3–c	3	3	3
P. H. 1–a	3		
Agron. 6–b		3	
D. H. 1–b		4	
Bot. 4–b, 5–c		3	3
Math. 4–b, 5–c		3	3
Math. 6–c			3
Hort. 1–c, 3–c			4
Met. 1–b		3	

ANIMAL HUSBANDRY

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
A. H. 4–a (*Animal Anatomy*)	3		
Agron. 2–a (*Forage Crops*)	3		
Econ. 1–a, 2–b (*Elementary Economics*)	3	3	
Econ. 5–b (*Rural Economics*)		3	
Agr'l Chem. 4–b (*Physiological Chemistry*)		3	
Zoöl. 17–b (*Genetics*)		3	
A. H. 5–b, 6–c (*Animal Diseases*)		3	3
A. H. 9–c (*Sheep and Swine*)			4
A. H. 13–c (*Principles of Nutrition*)			2
Eng. 60–c (*Public Speaking*)			3
*D. H. 9–a (*Dairy Bacteriology*)	3		
*P. H. 5–a (*Poultry Management*)	4		
*Agron. 3–b (*Cereal Crops*)		3	
*P. H. 7–b (*Incubation and Brooding*)		3	
*Agron. 7–c (*Farm Accounting*)			3
*P. H. 9–c (*Poultry Feeding*)			3
*Zoöl. 41–c (*Embryology*)			3

Senior Year

A. H. 3–a (*Feeds and Feedings*)	3		
A. H. 7–a (*Animal Breeding*)	4		
Agron. 8–a (*Farm Management*)	4		
Eng. 73–a (*Expository Writing*)	3		
A. H. 10–b (*Horses and Beef Cattle*)		4	
Agron. 6–b (*Fertilizers*)		3	
Ento. 3–b (*Insects of Domestic Animals*)		3	
A. H. 8–c (*Markets and Products*)			3
A. H. 12–c (*Seminar*)			2
*D. H. 3–a, 3.5–b (*Milk Production*)	4	3	
*For. 15–a (*Farm Woodlot*)	3		
*Hort. 6–b (*Commercial Pomology*)		3	
*Met. 1–b		3	
*Econ. 18–c (*Marketing*)			3
*Elec. Eng. 5–c (*Electricity on the Farm*)			3

COLLEGE OF AGRICULTURE

DAIRY HUSBANDRY

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
D. H. 9–a (*Dairy Bacteriology*)	3		
Agron. 2–a (*Forage Crops*)	3		
Econ. 1–a, 2–b (*Elementary Economics*)	3	3	
D. H. 4–b (*Testing Dairy Products*)		3	
Agr'l Chem. 4–b (*Physiological Chemistry*)		3	
Econ. 5–b (*Rural Economics*)		3	
D. H. 7–a (*Butter Making*)	4		
A. H. 13–c (*Principles of Nutrition*)			2
Eng. 60–c (*Public Speaking*)			3
*A. H. 4–a (*Animal Anatomy*)	3		
*P. H. 5–a (*Poultry Management*)	4		
*Agron. 3–b (*Cereal Crops*)		3	
*A. H. 5–b, 6–c (*Animal Diseases*)		3	3
*Agron. 7–c (*Farm Accounting*)			3
*D. H. 11–c (*Judging Dairy Products*)			1

Senior Year

D. H. 3–a, 3.5–b (*Milk Production*)	4	3	
Agron. 8–a (*Farm Management*)	4		
A. H. 3–a (*Feeds and Feeding*)	3		
Eng. 73–a (*Expository Writing*)	3		
D. H. 5–a (*Market Milk*)	4		
Agron. 6–b (*Fertilizers*)		3	
D. H. 6–c (*Ice Cream and Cheese*)			4
D. H. 10–c (*Adv. Dairy Husbandry*)			2
*A. H. 7–a (*Animal Breeding*)	4		
*For. 15–a (*Farm Woodlot*)	3		
*Ento. 3–b (*Insects of Domestic Animals*)		3	
*Hort. 6–b (*Commercial Pomology*)		3	
*Met. 1–b		3	
*A. H. 9–c (*Sheep and Swine*)			4
*Econ. 25–c (*Marketing*)			3
*D. H. 12–c (*Adv. Dairy Cattle Judging*)			2
*Elec. Eng. 5–c (*Electricity on the Farm*)			3

FORESTRY

Sophomore Year[1]

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
For. 2–a, 2.5–b (*Dendrology and Wood Technology*)	3	3	
Phys. 1–a, 2–b (*Introductory Physics*)	3	3	
Agr'l Chem. 1–a, 2–b, 3–c (*Agr'l Chemistry*)	3	3	3
For. 3–a, 4–b, 5–c (*Silviculture*)	3	3	3
Math. 19–a, 20–c (*Surveying*)	3		3
Geol. 1–b (*Elementary Geology*)		3	
Home Econ. 63–b (*Forest Cooking*)		2	
Agron. 4–c (*Soils*)			4
Draw. 10–c (*Agricultural Drawing*)			2
Mil. Sci. 4–a, 5–b, 6–c (*Military Art*)	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c (*Phys. Education*)	½	½	½
	17	19	17

[1] Forestry students are required to spend the summer following their sophomore year working in the woods on some phase of Forestry or Lumbering.

Junior Year[1]

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
For. 21–a (*Forest Engineering*)	3		
Acct. 112–a, 113–b, 114–c (*Elem. Accounting*)	3	3	3
Bot. 6–a, 4–b, 5–c (*Histology and Physiology*)	3	3	3
Econ. 1–a, 2–b, 3–c (*Elem. Economics*)	3	3	3
Eng. 4–a, 60–c (*Adv. Comp. and Pub. Speaking*)	3		3
Ento. 1–a, 15–c (*Economic and Forest Insects*)	4		3
For. 13–b (*Forest Utilization*)		3	
Met. 1–b (*Elem. Meteorology*)		3	
For. 6–b, 6.5–c (*For. Mensuration*)		3	3
	19	18	18

Senior Year

Eng. 73–a (*Expository Writing*)	3		
Pol. Sci. 1–a (*Business Law*)	3		
Bot. 12–a, 13–b, 17–c (*Pathology and Adv. Botany*)	3	3	3
For. 7–a, 8–b, 8.5–c (*Forest Management*)	3	3	3
For. 10–a, 11–b, 12–c (*Thesis*)	3	3	3
For. 14–b, 14.5–c (*Forest Practice*)		3	3
Electives	3	6	6
	18	18	18

HORTICULTURE

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Econ. 1–a, 2–b (*Elementary Economics*)	3	3	
Ento. 2–a (*Insects of Garden and Orchard*)	3		
Bot. 12–a, 13–b (*Plant Pathology*)	3	3	
Econ. 8–b (*Rural Economics*)		3	
Hort. 21–c (*Practice*)			18
*Hort. 2–a (*Greenhouse*)	3		
*Hort. 20–a (*Beekeeping*)	2		
*Agron. 2–a (*Forage Crops*)	3		
*P. H. 5–a (*Poultry Management*)	4		
*Hort. 11–b (*Vegetable Forcing*)		3	
*Hort. 8–b (*Plant Propagation*)		3	
*Agron. 3–b (*Cereal Crops*)		3	

[1] The junior year is followed by a six-weeks Summer Camp in the forest, which all Forestry juniors are required to attend.

Senior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Hort. 5–a (*Fruit and Vegetable Survey*)	2		
Agron. 8–a (*Farm Management*)	4		
Eng. 73–a (*Expository Writing*)	3		
Hort. 12–a, 12.5–b (*Seminar*)	2	2	
‡Hort. 6–b (*Commercial Pomology*)		3	
Bot. 4–b, 5–c (*Plant Physiology*)		3	3
Hort. 10–c (*Evolution and Improvement of Plants*)			3
Hort. 7–c (*Landscape Gardening*)			3
Eng. 60–c (*Public Speaking*)			3
*Hort. 17–a (*Commercial Vegetable Gardening*)	3		
*Hort. 18–a (*Ornamental Shrubs*)	2		
*Hort. 22–a (*Fruit Judging*)	3		
*D. H. 3–a, 3.5–b (*Milk Production*)	4	3	
*Agron. 6–b (*Fertilizers*)		3	
*Met. 1–b		3	
*Zoöl. 17–b (*Genetics*)		3	
*Hort. 9–b, 9.5–c (*Floriculture*)		2	2
*Hort. 4–c (*Small Fruits*)			3
*A. H. 9–c (*Sheep and Swine*)			3
*Econ. 18–c (*Marketing*)			3
*Elec. Eng. 5–c (*Electricity on the Farm*)			3

POULTRY HUSBANDRY

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
P. H. 5–a (*Poultry Management*)	4		
Econ. 1–a, 2–b (*Elementary Economics*)	3	3	
P. H. 17–a (*Poultry Marketing*)	3		
P. H. 6–b (*Poultry Diseases*)		3	
Econ. 5–b (*Rural Economics*)		3	
P. H. 13–c (*Practical Work*)			18
*Agron. 2–a (*Forage Crops*)	3		
*A. H. 4–a (*Animal Anatomy*)	3		
*Agron. 3–b (*Cereal Crops*)		3	
*Hort. 11–b (*Vegetable Forcing*)		3	
*Zoöl. 39a–40b (*Embryology*)	3	3	

Senior Year

P. H. 10–a (*Poultry Breeding*)	2		
P. H. 8–a (*Seminar*)	3		
Agron. 8–a (*Farm Management*)	4		
Eng. 73–a (*Expository Writing*)	3		
P. H. 14–a, 15–b, 16–c (*Poultry Research*)	3	3	3
P. H. 7–b (*Incubation and Brooding*)		3	
Eng. 60–c (*Public Speaking*)			3
P. H. 9–c (*Poultry Feeding*)			3
P. H. 22–c (*Poultry House Construction*)			1
*A. H. 3–a (*Feeds and Feeding*)	3		
*For. 15–a (*Farm Woodlot*)	3		
*Agr'l Chem. 4–b (*Physiological Chemistry*)		3	
*Agron. 6–b (*Fertilizers*)		3	
*Hort. 6–b (*Commercial Pomology*)		3	
*Met. 1–b		3	
*Zoöl. 17–b, 18–c (*Genetics*)		3	3
*Hort. 4–c (*Small Fruits*)			3
*Elec. Eng. 5–c (*Electricity on the Farm*)			3
*Econ. 18–c (*Marketing*)			3

‡ Not required if Horticulture 17–a is taken.

TEACHER TRAINING

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Agron. 2–a (*Forage Crops*)	3		
D. H. 13–a (*Dairy Management*)	4		
Econ. 1–a (*Elementary Economics*)	3		
Psy. 8–a (*Applied Psychology*)	3		
Agron. 3–b (*Cereal Crops*)		3	
Econ. 5–b (*Rural Economics*)		3	
P. H. 11–b (*Poultry for Teachers*)		2	
Shop 32–b (*Forging*)		3	
Agron. 7–c (*Farm Accounting*)			3
Educ. 15–c (*Class Room Management and Methods*)			3
Eng. 60–c (*Public Speaking*)			3
P. H. 12–c (*Poultry Brooding*)			1
Sociol. 3–c (*Rural Sociology*)			3
*Ento. 2–a (*Insects of Garden and Orchard*)	3		
*Econ. 2–b (*Elementary Economics*)		3	
*Educ. 14–b (*Secondary Education*)		3	
*A. H. 5–b (*Animal Diseases*)		3	
*Hort. 4–c (*Small Fruits*)			3
*Elec. Eng. 5–c (*Electricity on the Farm*)			3
*Econ. 18–c (*Marketing*)			3

Senior Year

Agron. 8–a (*Farm Management*)	4		
A. H. 3–a (*Feeds and Feeding*)	3		
Bot. 12–a (*Plant Pathology*)	3		
For. 15–a (*Farm Woodlot*)	3		
Educ. 20–a (*History and Principles of Vocational Education*)	3		
Agron. 6–b (*Fertilizers*)		3	
Bot. 18–b (*Plant Pathology*)		1	
Ed. 35–b (*Agriculture in High School*)		3	
Educ. 36–c (*Practice Teaching*)			15
*A. H. 14–a (*Breeding and Management of Livestock*)	3		
*Hort. 6–b (*Commercial Pomology*)		3	
*Met. 1–b (*Meteorology*)		3	
*Educ. 27–c (*School Hygiene*)			3
*Psy. 9–b (*Psychology of Adolescence*)		3	

COLLEGE OF LIBERAL ARTS

ALBERT N. FRENCH, *Dean*

DEPARTMENTS

ECONOMICS AND ACCOUNTING	LANGUAGES
EDUCATION AND PSYCHOLOGY	MUSIC
ENGLISH	PHYSICAL EDUCATION FOR WOMEN
HISTORY AND POLITICAL SCIENCE	SOCIOLOGY
HOME ECONOMICS	ZOÖLOGY AND GEOLOGY

In the College of Liberal Arts the following courses are offered:

General Liberal Arts Course.—This course provides a general college training which especially prepares for citizenship, secondary school teaching, business, or graduate study. By means of the group system of elective studies an opportunity is given the student to major toward an A.B. or B.S. degree. (See Requirements for Degrees.)

Home Economics Course.—The course in home economics furnishes instruction in the branches that especially serve the need of women students. The work is planned to meet the demands of the day for scientific training in home making, to fit students to enter fields of professional activity in educational and institutional lines of work, and to provide thorough training for those students who wish to elect home economics in the Liberal Arts Course.

The technical work in household science is based upon the principles of physical, biological and social sciences. The subjects in foods, nutrition and dietetics require physics, chemistry and physiology; those in sanitation necessitate a knowledge of chemistry and bacteriology; home administration and the care and education of children demands a knowledge of the principles of human nutrition and dietetics, and of the principles of economics, psychology and sociology. The training in drawing, color, and design which is gained in the department of drawing is related to the work in costume design and house decoration. Two home economics courses are offered:

(1) Teacher Training Course. This is to train students for meeting state requirements for teaching in the high schools. (See Teacher Training Course.)

(2) Institutional Course. This is to train students for positions as dietitians or managers and assistants in public institutions, such as college dormitories, hospitals, tea rooms, cafeterias, etc. (See Institutional Course.)

The Arts Course in Chemistry.—This is a general course in chemistry. It prepares for certain kinds of commercial chemistry, secondary science teaching, and affords a splendid basis for graduate work in medical schools. The considerable amount of electives permits the student to choose work in education, if professional preparation for teaching is desired.

The Arts Course in Architecture.—A general course in architecture affording a basis for advanced study in the more specialized schools of architecture and made up of those fundamentals of a general education which cannot be studied systematically later when the student is absorbed in the exacting routine of the practical field. Moreover the economic and social forces which help to shade his opportunities must be understood if he is to interpret them with sympathy, intelligence and artistic judgment. To this end, literature, history, science, business administration, economics and kindred subjects are made a prominent part of the course.

The technical subjects in architecture are not in themselves sufficient to prepare the student for independent practice of architecture as a profession but are intended to supply him with the background for creative work with architectural design as a means for its fulfillment and to give a knowledge of the principles involved in the processes of safe and economical building construction.

Preparation of Secondary School Teachers.—Students preparing to teach in secondary schools should plan their course so as to include 18–24 hours of Education and Psychology, also to include as electives, courses in Sociology and Public Speaking. The regulations of the New Hampshire State Board of Education provide that college graduates or other students with four years of post-secondary education will be given secondary licenses provided that their course included 15 semester hours of college work in Education. Education as stated here includes subjects in Education, Psychology, special methods courses, and Sociology. It is recommended to the students of the University of New Hampshire that they plan their courses so as to meet these requirements which are indicative of what other states are specifying for certification to teach.

Preparation for Business Training.—Students wishing to prepare for a business career should take in addition to the regularly required freshman and sophomore work in Military Science, Physical Education, and English, the following courses: Mathematics 1.5–a, 2.5–b, 3.5–c, two years of a modern language, Principles of Economics, United States History, Economic History, three years of Accounting, and within the general field of Economics such courses as Labor Problems, Corporation Problems, Transportation Problems, Money and Banking, Marketing, Mechanical Engineering 251–a, and Psychology.

THE PRE-MEDICAL COURSES

Students will be granted entrance into any Class A Medical School under the following conditions:

a. Provided proper subjects have been elected to fulfill requirements of the particular school they plan to enter. Please note that the requirements of Medical Schools are not uniform and that the students should determine before coming to this institution the Medical School they plan to enter.

b. Owing to the crowded condition of most Medical Schools only those students standing in the upper third or half of their class during premedical work may be admitted. This restriction, however, does not apply to all Medical Schools.

In order to meet the needs of students who are preparing for Medical work the following courses of study are offered:

1. Four Year Pre-Medical Work.

It is highly desirable that students should spend four years in preparation for their Medical training at this institution. This will give them a good cultural foundation for their Medical Work.

2. Two Year Pre-Medical Work.

It is usually possible to complete the technical requirements of Medical Schools with two years training. This, however, is by no means advisable unless students are capable of maintaining high scholarship.

3. Pre-Dental Work.

One year's training at this institution will fit students for entrance into any of the first class Dental Schools.

Details concerning subjects necessary to complete above courses of study should be planned out with the head of the Zoölogy Department.

Student Advisers

1. For Freshmen.

A committee of faculty members will be appointed by the dean of Liberal Arts to act as advisers for freshmen and the elective slip of each student must be approved by a member of the committee or by his dean.

2. For Sophomores, Juniors and Seniors.

A student will have for his adviser the head of his major department; provided, that in case a student majors in a department outside the College of Liberal Arts, his elective slip shall also be approved by the dean of the Liberal Arts College.

COLLEGE OF LIBERAL ARTS

GENERAL LIBERAL ARTS COURSE

Freshman Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 1.5–a, 2.5–b, 3.5–c (*English Composition*)	3	3	3
*Mil. Sci. 1–a, 2–b, 3–c (*Military Science*)	1½	1½	1½
*Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
Elect subjects from 3 of the 4 groups; A, B, C, D			
A. †Language (Latin, German, Spanish or French 1–a, 2–b, 3–c)	3	3	3
B. Science (Botany, Chemistry, Zoölogy, or Physics 1–a, 2–b, 3–c)	3	3	3
C. Mathematics (1.5–a, 2.5–b, 3.5–c)	3	3	3
D. Social Science (1–a, 2–b, 3–c)	3	3	3
Free electives	4	4	4
	18	18	18

Sophomore Year

†Mil. Sci. 5–a, 6–b, 7–c (*Military Science*)	1½	1½	1½
†Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
Eng. 4–a, 5–b, 6–c (*Advanced Composition*)	3	3	3
Free electives	13	13	13
	18	18	18

Junior Year

Free electives	18	18	18

Senior Year

Free electives	18	18	18

* Physical Education 1–a, 2–b and 3–c, giving 1 credit each, are required of women students instead of Military Science and Physical Education 51–a, 52–b and 53–c.

† Physical Education 4–a, 5–b and 6–c, giving 1 credit each, are required of women students instead of Military Science and Physical Education 54–a, 55–b, 56–c.

COLLEGE OF LIBERAL ARTS

HOME ECONOMICS COURSES

TEACHER TRAINING COURSE

INSTITUTIONAL MANAGEMENT COURSE

Freshman Year

Subjects	*Fall Term ("A")*	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 1.5–a, 2.5–b, 3.5–c (*English Composition*)	3	3	3
Social Sc. 1–a, 2–b, 3–c	3	3	3
Chem. 6–a, 7–b, 8–c (*Inorganic Chemistry*)	3	3	3
Math. 1.5–a, 2.5–b, 3.5–c, or Ger., Span. or Fr. 1–a, 2–b, 3–c	3	3	3
P. E. 1–a, 2–b, 3–c	1	1	1
P. E. 13–a (*Health Problems*)	2		
H. E. 65–c (*Survey of Home Ec.*)			2
H. E. 1–a, 2–b, 3–c (*Elementary Clothing*)	3	3	3
H. E. 64–b (*Food Selection*)		2	
	18	18	18

Sophomore Year

Eng. 4–a, 5–b, 6–c	3	3	3
Art 1–a, 2–b, 3–c (*Elem. Decorative, Advanced Design*)	2	2	2
Phys. 32–a, 33–b, 34–c (*Household Physics*)	3	3	3
Chem. 15–a, 16–b (*Organic Chemistry*)	3	3	
Chem. 23–c (*Household Chemistry*)			2
H. E. 51–a, 52–b, 53–c (*Foods and Cookery*)	2	2	2
Zoöl. 33–a, 34–b, 35–c (*Physiology*)	3	3	3
P. E. 4–a, 5–b, 6–c	1	1	1
Elective	1	1	2
	18	18	18

Junior Year

H. E. 4–a, 5–b, 6–c (*Adv. Clothing*)	2	2	2
H. E. 7–a, 9–c (*Millinery*)	2		2
H. E. 10–b (*Laundry and House Care*)		2	
*Agr'l Chem. 4–b (*Physiological*)		3	
H. E. 60–c (*House Management*)			2
Arch. 20–a, 21–b, 22–c (*Domestic Arch.*)	2	2	2
Bot. 8–a, 8.5–b (*Bacteriology*)	3	3	
Econ. 1–a, 2–b, 3–c (*Elementary Economics*)	3	3	3
†Psy. 1–a, 2–b (*Introduction to Psychology*)	3	3	
‡Psy. 8–a (*Applied Psychology*)	3		
H. E. 54–b (*Meal Preparation*)		3	
H. E. 50–c (*Experimental Cookery*)			2
H. E. 57–c (*Nutrition and Dietetics*)			3
H. E. 62–a (*Home Nursing*)	2		
P. E. 7–a, 8–b, 9–c	1	1	1
Electives			3
	19	17	18

Approved Electives: Teacher Training Course.
Educ. 15–c (Classroom Management, etc.)
Educ. 14–b (Secondary Education)

* Required for students who expect to become hospital dietitians. Approved elective for other students.
† Required of Institutional Juniors.
‡ Required of Teacher Training Juniors.

TEACHER TRAINING COURSE

SENIOR YEAR

Subjects	Fall Term ("A")	Winter Term ("B")	Spring Term ("C")
H. E. 101–a (*Teaching Home Ec.*)	3		
H. E. 102–b (*Home Ec. in High Schools*)		3	
H. E. 61–a or b (*Practice House*)	5 or	5	
H. E. 103–c (*Supervised Teaching*)			15
Educ. 20–a (*Vocational Ed.*)	3		
Educ. 28–c (*School Hygiene*)			3
Soc. 17–a (*Social Psychology*)	3		
Soc. 18–b (*Educational Sociology*)		3	
Psy. 9–b (*Psychology of Adolescence*)		3	
H. E. 12–b (*Home Decoration*)		2	
H. E. 11–a (*Textiles*)	3		
Electives	*3 or	†8	
	19	18	18

INSTITUTIONAL MANAGEMENT COURSE

SENIOR YEAR

	Fall Term ("A")	Winter Term ("B")	Spring Term ("C")
Zoöl. 13–a, 14–b, 15–c (*Hygiene and Sanitation*)	3	3	3
Ento. 4–c (*Household Insects*)			3
H. E. 58–a, 59–b (*Institutional Management*)	2	2	
H. E. 12–b (*Home Decoration*)		2	
H. E. 11–a (*Textiles*)	3		
Electives	10	11	12
	18	18	18

Approved Electives:
Educ. 14–b (*Sec. Educ.*)
Educ. 13–b (*Hist. of Educ.*)

‡ARTS COURSE IN CHEMISTRY

FRESHMAN YEAR

	Fall Term ("A")	Winter Term ("B")	Spring Term ("C")
Chem. 1–a, 2–b, 3–c (*Inorganic Chemistry*)	3	3	3
Math. 1–a (*Trigonometry*)	3		
Math. 2–a, 3–b (*Algebra*)	3	3	
Math. 4–b, 5–c (*Analytic Geometry*)		3	3
Math. 6–c (*Calculus*)			3
Ger. 1–a, 2–b, 3–c (*German*) or Fr. 1–a, 2–b, 3–c (*French*)	3	3	3
Eng. 1.5–a, 2.5–b, 3.5–c (*English*)	3	3	3
§Mil. Sci. 1–a, 2–b, 3–c (*Military Science*)	1½	1½	1½
§Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
	17	17	17

* For students taking Practice house winter term.
† For students taking Practice house fall term.
‡ Students planning to teach Chemistry are advised to elect subjects in Education.
§ Physical Education for Women is required of women students instead of Military Science and Physical Education for men as listed.

Sophomore Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 4–a, 5–b, 6–c (*English*)	3	3	3
Chem. 20–a, 21–b, 22–c (*Organic Chemistry*)	2	3	3
Chem. 10–a (*Qualitative Analysis*)	6		
Chem. 18–b, 19–c (*Quantitative Analysis*)		5	5
Ger. 4–a, 5–b, 6–c (*German*) or Fr. 4–a, 5–b, 6–c (*French*) or Bot. 1–a, 2–b, 3–c (*Botany*) or Econ. 1–a, 2–b, 3–c (*Principles of Economics*)	3	3	3
Math. 7–a, 8–b (*Calculus*)	3	3	
*Mil. Sci. 4–a, 5–b, 6–c (*Military Science*)	1½	1½	1½
*Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
Electives			3
	19	19	19

Junior Year

Chem. 29–a, 30–b, 31–c (*Physical Chemistry*)	3	3	3
Chem. 26–a, 27–b, 28–c (*Quantitative Analysis*)	4	4	4
Draw, 5–a (*Drawing*)	2		
Chem. 25–b, 24–c (*Organic Laboratory*)		2	2
Phys. 6–a, 7–b, 8–c (*Physics*)	3	3	3
Phys. 9–a, 10–b, 11–c (*Physics*)	3	3	3
Electives	3	3	3
	18	18	18

Senior Year

Chem. 42–a (*Physical Laboratory*)	2		
Chem. 32–a, 33–b, 34–c (*Advanced Inorganic Chemistry*)	3	3	3
Chem. 39–a, 40–b, 41–c (*Thesis*)	7	6	6
Shop 22–c (*Machine Work*)			3
Electives	6	9	6
	18	18	18

ARTS COURSE IN ARCHITECTURE

Freshman Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 1.5–a, 2.5–b, 3.5–c (*English Reading*)	3	3	3
Social Sci. 2–b, 3–c (*Social Science*)		3	3
Draw. 5–a (*Mechanical Drawing*)	2		
Draw. 6–b, 7–c (*Graphics*)		2	2
Arch. 10–a, 11–b, 12–c (*Elements of Architecture*)	2	2	2
Art. 10–a, 11–b, 12–c (*Free-hand Drawing*)	3	3	3
Math. 2–a (*Algebra*)	3		
Math. 1–a (*Trigonometry*)	3		
Math. 4–b (*Analytic Geometry*)		3	
Math. 103–c (*Solid Geometry*)			3
Mil. Sci. 1–a, 2–b, 3–c (*Military Science*)	1½	1½	1½
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
	18	18	18

* Physical Education for Women is required of women students instead of Military Science and Physical Education for men as listed.

Sophomore Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Phys. 1–a, 2–b, 3–c (*Introductory Physics*)	3	3	3
Arch. 1–a, 2–b, 3–c (*History of Architecture*)	2	2	2
Arch. 50–a, 51–b, 52–c (*Architectural Design*)	3	3	3
Art. 13–a, 14–b, 15–c (*Free-hand Drawing*)	2	2	2
Econ. 1–a, 2–b, 3–c (*Principles of Economics*)	3	3	3
Fr. 1–a, 2–b, 3–c (*French Prose*) or Ger. 1–a, 2–b, 3–c (*German Prose*) or Eng. 4–a, 5–b, 6–c (*English*)	3	3	3
Mil. Sci. 4–a, 5–b, 6–c (*Military Science*)	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
	18	18	18

Junior Year

Arch. 4–a, 5–b, 6–c (*History of Fine Arts*)	2	2	2
Arch. 30–a, 31–b, 32–c (*Building Construction*)	3	3	3
Arch. 34–b (*Building Sanitation*)		1	
Arch. 53–a, 54–b, 55–c (*Architectural Design*)	3	3	3
Art. 16–a, 17–b, 18–c (*Freehand Drawing*) or Hist. 113–b, 119–c (*The Ancient Orient; Greek and Roman*) and Econ. 10–a (*Labor Problems*)	3	3	3
Geol. 100–b (*Clay Products and Building Stones*)		2	
Math. 19–a, 20–c (*Surveying*)	3		3
Electives	4	4	4
	18	18	18

Senior Year

Arch. 56–a, 57–b, 58–c (*Architectural Design*) or Econ. 112–a, 113–b, 114–c (*Elements of Accounting*) and Pol. Sci. 1–a (*Laws of Business*) and Hist. 114–b, 115–c (*The Middle Ages; Renaissance and Reformation*)	6	6	6
Arch. 41–c (*Professional Relations*)			1
Arch. 45–c (*Contracts and Specifications*)			2
Arch. 23–a, 24–b (*Domestic Architecture*)	3	3	
Eng. 73–a (*Expository Writing*)	3		
Eng. 9–b (*Advanced Composition*)		3	
Eng. 60–c (*Public Speaking*)			3
Electives	6	6	6
	18	18	18

COLLEGE OF TECHNOLOGY

CALVIN H. CROUCH, *Dean*

DEPARTMENTS

ART, ARCHITECTURE AND DRAWING
CHEMISTRY
ELECTRICAL ENGINEERING
MATHEMATICS
MECHANICAL ENGINEERING
PHYSICS
SHOPS

The College of Technology offers the following four-year courses:

Chemical Engineering Course.—This course is intended to fit the student for the career of a professional chemist or chemical engineer, and to give a good foundation for original and independent chemical research.

Instruction is imparted by lectures, recitations and a large amount of carefully supervised laboratory work. The laboratory study is largely an individual one, and the work of each student is conducted with reference not only to the particular object he may have in view, but also to the acquirement of a broad knowledge of chemical science. The student is given a thorough training in German and French to enable him to read with ease the chemical literature; a thorough grounding in mathematics, necessary for advanced theoretical chemistry or chemical engineering; a somewhat limited amount of special work in both mechanical and electrical engineering and a thorough undergraduate training in theoretical and applied chemistry. He is encouraged to develop the power of solving chemical problems by independent thought through the aid of the reference library and chemical periodicals.

Electrical Engineering Course.—The electrical engineering course is intended to meet the demands of young men fitting themselves for professional engineering in connection with the various applications of electricity.

By means of lectures, recitations and laboratory work, the subjects of the course are brought to the attention of the student in such a manner as not only to emphasize the present needs of the practitioner and engineer, but to give him the principles that will enable him to grasp and understand the constantly increasing number of new problems that require solution.

The instruction aims to impart a thorough knowledge of the best modern types of electrical machines and appliances, and the methods of designing, building and operating them.

The rapid progress in recent years in the application of electricity to commercial uses renders it difficult, if not impossible, for one without a technical education to gain prominence in the work and assume the more responsible positions.

Mechanical Engineering Course.—The mechanical engineering course is intended to train young men for positions of responsibility in the field of the mechanical industries. The studies in the course are scientific, including mathematics, physics and chemistry; technical, including drawing, shop work, thermodynamics, hydraulics, machine design, electrical engineering, power engineering; and cultural, designed to fit him socially for his proper place in the world.

Instruction is given by means of recitations, lectures and laboratory work supplemented by illustrated lectures and assigned reading. Throughout the course the theoretical work is supplemented by actual practice in mechanical operation and scientific research, by training in the use of tools for working wood and metals, and by experimental tests and demonstrations in the mechanical, electrical, chemical and physical laboratories.

Architectural Construction Course.—The architectural construction course is semi-professional in character in that its aim is to prepare students in the fundamentals of building design and construction, and by means of related subjects to develop their imagination and creative powers. According to his natural ability and inclination, the student can prepare himself for active construction work as foreman or superintendent for contractors or architects; for salesmanship of building materials and supplies, a field offering many fine opportunities; or he may continue his study of design or architectural engineering in one of the larger schools of architecture with a view of actively engaging in the profession of architecture or contracting.

Industrial Course.—The College of Technology offers a four-year industrial course which is particularly designed to prepare for positions as salesmen, foremen, superintendents and managers in the fields of electrical and mechanical manufacturing and construction, and for the training of teachers of Mechanic Arts and related subjects in secondary schools. The Teacher Training course is specially designed to prepare for Smith-Hughes teaching positions.

The subjects offered in this course have been so chosen as to involve less mathematics, and more economics, accounting, English, etc., than is required in the regular four-year engineering courses. The basic work of the different branches of the industrial course is identical throughout the four years. Specialization is made possible in the junior and senior years and is provided for largely through selected groups of elective subjects.

Industrial Teacher Training Course.—The teacher training course is the same as the Industrial Course for the first two years, but differs in the last two years in that certain courses in education are required. It is specially designed to prepare for Smith-Hughes teaching positions.

COLLEGE OF TECHNOLOGY

ELECTRICAL AND MECHANICAL ENGINEERING COURSES

Freshman Year

	Fall Term ("*A*")	*Winter Term* ("*B*")	*Spring Term* ("*C*")
Eng. 1–a, 2–b, 3–c (*English Composition*)	3	3	3
Chem. 1–a, 2–b, 3–c (*Inorganic Chemistry*)	3	3	3
Math. 201–a, 202–b, 203–c (*Unified Math.*)	6	6	6
Draw. 1–a, 1.5–b, 2–c (*Engineering Drawing*)	2	2	2
Shop 1–a, 2–b (*Woodwork*)	2	2	
Shop 31–c (*Forge Shop*)			2
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	1½	1½	1½
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
	18	18	18

Sophomore Year

Chem. 11–a, 12–b (*Qualitative and Quantitative Anal. Lab.*)	3	3	
Math. 7–a, 8–b, 9–c (*Calculus*)	3	3	3
Phys. 6–a, 7–b, 8–c (*Physics*)	3	3	3
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	3	3	3
M. E. 1–c (*Mechanics of Engineering*)			3
Draw. 3–a (*Machine Drawing*)	2		
Draw. 4–b, 4.5–c (*Descriptive Geometry*)		2	2
Shop 51–a, 52–b, 53–c (*Machine Work*)	2	2	2
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
	18	18	18

Electrical Engineering

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
E. E. 1–a, 2–b, 3–c (*Dynamo Electric Machinery*)	4	4	4
M. E. 2–a, 3–b, 4–c (*Mechanics of Engineering*)	3	3	3
M. E. 51–b, 52–c (*Thermodynamics*)		3	3
M. E. 151–a (*Materials of Construction*)	3		
M. E. 152–a (*Kinematics*)	3		
M. E. 153–b (*Valve Gears and Boiler Design*)		3	
M. E. 154–c (*Machine Design*)			3
M. E. 201–a, 202–b, 203–c (*Mechanical Laboratory*)	2	2	2
Elective: Mil. Sci. 24–a, 25–b, 26–c or Econ. 1–a, 2–b, 3–c	3	3	3
	18	18	18

Senior Year

E. E. 7–a, 8–b (*Electrical Engineering Practice*)	3	3	
E. E. 9–c (*Transmission and Distribution*)			3
E. E. 11–a, 12–b, 13–c (*Electrical Laboratory*)	3	3	3
E. E. 18–b (*Design of Electrical Machinery*)		3	
Eng. 73–a (*Expository Writing*)	3		
Eng. 60–c (*Public Speaking*)			3
Math. 19–a, 20–c (*Surveying*)	3		3
M. E. 41–b, 42–c (*Hydraulics*)		3	3
M. E. 76–a, 77–b (*Power Plant Engineering*)	3	3	
*Elective: Mil. Sci. 27–a, 28–b, 29–c or Econ. 4–a, 10–b, 25–c	3	3	3
	18	18	18

Mechanical Engineering

Junior Year

E. E. 25–a, 26–b, 27–c (*Electrical Machinery*)	4	4	4
M. E. 2–a, 3–b, 4–c (*Mechanics of Engineering*)	3	3	3
M. E. 51–b, 52–c (*Thermodynamics*)		3	3
M. E. 151–a (*Materials of Construction*)	3		
M. E. 152–a (*Kinematics*)	3		
M. E. 153–b (*Valve Gears and Boiler Design*)		3	
M. E. 154–c (*Machine Design*)			3
M. E. 201–a, 202–b, 203–c (*Mechanical Laboratory*)	2	2	2
*Elective: Mil. Sci. 24–a, 25–b, 26–c or Econ. 1–a, 2–b, 3–c	3	3	3
	18	18	18

* Other electives may, with the approval of the Dean of the College of Technology, be offered in lieu of Economics.

COLLEGE OF TECHNOLOGY

Senior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
M. E. 41–b, 42–c (*Hydraulics*)		3	3
M. E. 76–a, 77–b (*Power Plant Engineering*)	3	3	
M. E. 126–b (*Heating and Ventilating*)		3	
*M. E. 155–a, 156–b, 157–c (*Machine Design*)	3	3	3*
*M. E. 204–a, 205–b, 206–c (*Mechanical Laboratory*)	3	3	3*
M. E. 300–c (*Thesis*)			3–6*
Eng. 73–a (*Expository Writing*)	3		
Eng. 60–c (*Public Speaking*)			3
Math. 19–a, 20–c (*Surveying*)	3		3
†Elective:			
Mil. Sci. 27–a, 28–b, 29–c or Econ. 4–a, 10–b, 25–c	3	3	3
	18	18	18

CHEMICAL ENGINEERING COURSE

Freshman Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 1–a, 2–b, 3–c (*English Composition*)	3	3	3
Fr. 1–a, 2–b, 3–c (*French*) or Ger. 1–a, 2–b, 3–c (*German*)	3	3	3
Chem. 1–a, 2–b, 3–c (*Inorganic Chemistry*)	3	3	3
Math. 201–a, 202–b, 203–c (*Unified Math.*)	6	6	6
Draw. 5–a (*Mechanical Drawing*)	2		
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	1½	1½	1½
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
	19	17	17

Sophomore Year

Ger. 4–a, 5–b, 6–c (*German*)	3	3	3
Chem. 20–a, 21–b, 22–c (*Organic Chemistry*)	2	3	3
Chem. 10–a (*Qualitative Analysis*)	6		
Chem. 18–b, 19–c (*Quantitative Analysis*)		5	7
Math. 7–a, 8–b, 9–c (*Calculus*)	3	3	3
Miner. 1–b (*Mineralogy*)		3	
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
	16	19	18

Junior Year

Chem. 29–a, 30–b, 31–c (*Physical Chemistry*)	3	3	3
Chem. 24–a, 25–b (*Organic Chemical Laboratory*)	2	2	
Chem. 26–a, 27–b, 28–c (*Quantitative Analysis*)	4	5	4
Phys. 6–a, 7–b, 8–c (*Physics*)	3	3	3
Phys. 9–a, 10–b, 11–c (*Physics*)	3	3	3
Shop 60–c (*Machine Work*)			3
Chem. 32–a, 33–b, 34–c (*Advanced Inorganic Chemistry*) or Mil. Sci. 24–a, 25–b, 26–c (*Coast Artillery*)	3	3	3
	18	19	19

* Thesis may be offered during the spring term in place of the subjects marked thus (*).
† Other electives may, with the approval of the Dean of the College of Technology, be offered in lieu of Economics.

Senior Year	*Fall Term ("A")*	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 73–a (*Expository Writing*)	3		
Eng. 60–c (*Public Speaking*)			3
Chem. 35–a, 36–b (*Industrial Chemistry*)	3	3	
Chem. 42–a (*Physical Chemistry Laboratory*)	2		
Chem. 38–a (*Quantitative Analysis*) or Chem. 39–a (*Thesis*)	4		
Chem. 40–b, 41–c (*Thesis*)		6	6
E. E. 15–a, 16–b, 17–c (*Industrial Electricity*)	3	3	3
M. E. 51–b, 52–c (*Thermodynamics*)		3	3
Electives	3	3	3
	18	18	18

ARCHITECTURAL CONSTRUCTION COURSE

Students entering the Architectural Construction Course prior to 1924 will take the following curriculum.

Sophomore Year	*Fall Term ("A")*	*Winter Term ("B")*	*Spring Term ("C")*
Phys. 6–a, 7–b, 8–c (*General Physics*)	3	3	3
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	3	3	3
Arch. 1–a, 2–b, 3–c (*History of Architecture*)	2	2	2
Arch. 10–a, 11–b, 12–c (*Elements of Architecture*)	3	3	3
Art. 13–a, 14–b, 15–c (*Free-hand Drawing*)	2	2	2
M. E. 11–a, 12–b, 13–c (*Elements of Mechanics*)	3	3	3
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
	18	18	18
Junior Year			
Arch. 30–a, 31–b, 32–c (*Building Construction*)	3	3	3
Arch. 34–b (*Building Sanitation*)		1	
Arch. 50–a, 51–b, 52–c (*Architectural Design*)	3	3	3
Econ. 1–a, 2–b, 3–c (*Principles of Economics*)	3	3	3
Geol. 100–b (*Clay Products and Building Stones*)		2	
Math. 19–a, 20–c (*Surveying*)	3		3
*M. E. 210–a, 211–b, 212–c (*Mechanical Laboratory*)	3	3	3
Elective	3	3	3
	18	18	18
Senior Year			
Arch. 41–c (*Professional Relations*)			1
Arch. 45–c (*Contracts and Specifications*)			2
Arch. 36–a, 37–b (*Structural Design*)	6	9	
*Arch. 38–c (*Architectural Thesis*)			9
Econ. 10–a (*Labor Problems*)	3		
*E. E. 100–a (*Elements of Electricity*)	3		
Eng. 73–a (*Expository Writing*)	3		
Eng. 9–b (*Advanced Composition*)		3	
Eng. 60–c (*Public Speaking*)			3
M. E. 126–b (*Heating and Ventilating*)		3	
Elective	3	3	3
	18	18	18

* Any student who shows marked ability in free-hand drawing and desires to specialize in architectural design with a view of entering an architect's office as a draftsman may, with the approval of the head of the department and the Dean of the College of Technology elect advanced work in free-hand drawing and architectural design in place of those subjects starred.

COLLEGE OF TECHNOLOGY

ARCHITECTURAL CONSTRUCTION COURSE

Freshman Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 1–a, 2–b, 3–c (*English Composition*)	3	3	3
Math. 201–a, 202–b, 203–c (*Unified Math.*)	6	6	6
Draw. 5–a (*Mechanical Drawing*)	2		
Draw. 6–b, 7–c (*Graphics*)		2	2
Art. 10–a, 11–b, 12–c (*Free-hand Drawing*)	3	3	3
Arch. 10–a, 11–b, 12–c (*Elements of Architecture*)	2	2	2
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	1½	1½	1½
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
	18	18	18

Sophomore Year

Phys. 6–a, 7–b, 8–c (*General Physics*)	3	3	3
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	3	3	3
Arch. 1–a, 2–b, 3–c (*History of Architecture*)	2	2	2
Arch. 50–a, 51–b, 52–c (*Architectural Design*)	3	3	3
Art. 13–a, 14–b, 15–c (*Free-hand Drawing*)	2	2	2
M. E. 11–a, 12–b, 13–c (*Elements of Mechanics*)	3	3	3
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	1½	1½	1½
Phys. Ed. 54–a, 53–b, 56–c (*Physical Education*)	½	½	½
	18	18	18

Junior Year

Arch. 30–a, 31–b, 32–c (*Building Construction*)	3	3	3
Arch. 34–b (*Building Sanitation*)		1	
*Arch. 53–a, 54–b, 55–c (*Architectural Design*)	3	3	3
Arch. 4–a, 5–b, 6–c (*History of Fine Arts*)	2	2	2
Geol. 100–b (*Clay Products and Building Stones*)		2	
Math. 19–a, 20–c (*Surveying*)	3		3
*M. E. 210–a, 211–b, 212–c (*Mechanical Laboratory*)	2	2	2
*Shop 4–a, 5–b, 6–c (*Woodwork*)	2	2	2
Elective	3	3	3
	18	18	18

Senior Year

Arch. 41–c (*Professional Relations*)			1
Arch. 45–c (*Contracts and Specifications*)			2
*Arch. 36–a, 37–b (*Structural Design*)	6	6	
Arch. 38–c (*Architectural Thesis*)			9
*Arch. 23–a, 24–b (*Domestic Architecture*)	3	3	
E. E. 100–a (*Elements of Electricity*)	3		
Eng. 73–a (*Expository Writing*)	3		
Eng. 9–b (*Advanced Composition*)		3	
Eng. 60–c (*Public Speaking*)			3
M. E. 126–b (*Heating and Ventilating*)		3	
Elective	3	3	3
	18	18	18

* Any student who shows marked ability in free-hand drawing and desires to specialize in architectural design with a view of entering an architect's office as a draftsman may, with the approval of the head of the department and the Dean of the College of Technology elect advanced work in free-hand drawing and architectural design in place of those subjects starred.

Approved Electives for Architectural Course

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Arch. 56–a, 57–b, 58–c (*Architectural Design*)	6	6	6
Art. 16–a, 17–b, 18–c (*Free-hand Drawing*)	3	3	3
Econ. 22–a (*Corporations*)	3		
Econ. 26–b (*Transportation*)		3	
Econ. 30–c (*Principles of Public Finance*)			3
Econ. 112–a, 113–b, 114–c (*Accounting*)	3	3	3
Eng. 17–b, 18–c (*Introduction to English Literature*)		3	3
Eng. 23–a, 24–b, 25–c (*American Literature*)	3	3	3
Fr. 1–a, 2–b, 3–c (*French*) or Sp. 1–a, 2–b, 3–c (*Spanish*)	3	3	3
M. E. 281–a (*Water Supplies and Purification*)	2		
Pol. Sci. 1–a (*Laws of Business*)	3		
Mil. Sci. 24–a, 25–b, 26–c (*Coast Artillery*)	3	3	3
Mil. Sci. 27–a, 28–b, 29–c (*Coast Artillery*)	3	3	3

INDUSTRIAL AND TEACHER TRAINING COURSES

Freshman Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
Eng. 1–a, 2–b, 3–c (*English Composition*)	3	3	3
Chem. 1–a, 2–b, 3–c (*Inorganic Chemistry*)	3	3	3
Math. 201–a, 202–b, 203–c (*Unified Math.*)	6	6	6
Draw. 1–a, 1.5–b, 2–c (*Engineering Drawing*)	2	2	2
Shop 1–a, 2–b (*Woodwork*)	2	2	
Shop 31–c (*Forge Shop*)			2
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	1½	1½	1½
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	½	½	½
	18	18	18

Sophomore Year

Chem. 11–a, 12–b (*Qualitative and Quantitative Anal. Lab.*)	3	3	
Econ. 1–a, 2–b, 3–c (*The Principles of Economics*)	3	3	3
Phys. 6–a, 7–b, 8–c (*Physics*)	3	3	3
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	3	3	3
Elective			3
Draw. 3–a (*Machine Drawing*)	2		
Draw. 4–b, 4.5–c (*Descriptive Geometry*)		2	2
Shop 51–a, 52–b, 53–c (*Machine Work*)	2	2	2
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	1½	1½	1½
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	½	½	½
	18	18	18

COLLEGE OF TECHNOLOGY

Junior Year

	Fall Term ("A")	*Winter Term ("B")*	*Spring Term ("C")*
E. E. 25–a, 26–b, 27–c (*Electrical Machinery*)	4	4	4
M. E. 11–a, 12–b, 13–c (*Elements of Mechanics*)	3	3	3
Shop	2	2	2
*Psy. 8–a or 10–a (*Applied Psychology*)	3		
†Ed. 14–b (*Secondary Education*)		3	
†Ed. 15–c (*Methods and Class Room Management*)			3
‡Econ. 10–a (*Labor Problems*)	3		
‡Econ. 26–b (*Transportation*)		3	
‡Econ. 18–c (*Marketing*)			3
Elective	3	3	3
	18	18	18

Industrial Course

Senior Year

Eng. 73–a (*Expository Writing*)	3		
Eng. 9–b (*Advanced Composition*)		3	
Eng. 60–c (*Public Speaking*)			3
M. E. 51–b, 52–c (*Thermodynamics*)		3	3
M. E. 81–a (*Boiler Design and Graphics*)	3		
M. E. 82–b, 83–c (*Power Plant Machinery*)		3	3
M. E. 207–a, 208–b, 209–c (*Mechanical Laboratory*)	3	3	3
M. E. 251–a (*Industrial Engineering*)	3		
Acc't 112–a, 113–b, 114–c (*Elementary Accounting*)	3	3	3
Elective	3	3	3
	18	18	18

Teacher Training Course

Senior Year

Eng. 73–a (*Expository Writing*)	3		
Eng. 9–b (*Advanced Composition*)		3	
Eng. 60–c (*Public Speaking*)			3
Ed. 20–a (*History and Principles of Vocational Education*)	3		
Ed. 27–c (*School Hygiene*)			3
Ed. 40–b (*Special Methods in Industrial Education*)		3	
Ed. 41–c (*Supervised Teaching in Industrial Education*)			9
Psy. 9–b (*Psychology of Adolescence*)		3	
Shop 8–a (*Practice Teaching*)	2		
Shop 33–b (*Forging*)		2	
Elective	10	7	
Mil. Sci. or Practice Teaching			3
	18	18	18

* Teacher Training students will take Psychology 8-a and Industrial students will take Psychology 10–a.

† Students taking the Industrial Course may offer an elective in place of Education 14–b and 15–c.

‡ Other subjects may with the approval of the Dean of the College of Technology be substituted for Economics.

INDUSTRIAL COURSE

Freshman Year

Students entering the Industrial Course prior to 1923 will take the following curriculum:

Junior Year	*Fall Term ("A")*	*Winter Term ("B")*	*Spring Term ("C")*
M. E. 82–b, 83–c (*Power Plant Machinery*)		3	3
E. E. 100–a, 101–b, 102–c (*Elements of Electricity*)	3	3	3
M. E. 13–c (*Elements of Mechanics*)			3
M. E. 210–a, 211–b, 212–c (*Mechanical Laboratory*)	2	2	2
M. E. 151–a (*Materials of Construction*)	3		
M. E. 161–a (*Machine Design*)	2		
Electives from group 1, 2 or 3 (Listed Below)	8	10	7
	18	18	18
Senior Year			
Eng. 9–b (*Advanced Composition*)		3	
E. E. 103–a, 104–b (*Electrical Machinery*)	3	2	
E. E. 105–a, 106–b, 107–c (*Electrical Laboratory*)	2	2	*2
M. E. 213–a, 214–b, 215–c (*Mechanical Laboratory*)	2	2	*2
Shop 51–a, 52–b, 53–c (*Machine Shop*)	2	2	*2
Electives from group 1, 2 or 3	9	7	*12
	18	18	18

INDUSTRIAL COURSE FOR THE TRAINING OF TEACHERS

Freshman Year

Students entering the Teacher Training Course prior to 1923 will take the following curriculum:

Junior Year	*Fall Term ("A")*	*Winter Term ("B")*	*Spring Term ("C")*
M. E. 82–b, 83–c (*Power Plant Machinery*)		3	3
E. E. 100–a, 101–b, 102–c (*Elements of Electricity*)	3	3	3
M. E. 13–c (*Elements of Mechanics*)			3
M. E. 151–a (*Materials of Construction*)	3		
M. E. 161–a (*Machine Design*)	2		
Psy. 8–a (*Applied Psychology*)	3		
Ed. 14–b (*Secondary Education*)		3	
Ed. 15–c (*Methods of Class-room Management*)			3
Electives	7	9	6
	18	18	18
Senior Year			
Eng. 9–b (*Advanced Composition*)		3	
E. E. 103–a, 104–b (*Electrical Machinery*)	3	2	
E. E. 105–a, 106–b, 107–c (*Electrical Laboratory*)	2	2	*2
M. E. 213–a, 214–b, 215–c (*Mechanical Laboratory*)	2	2	*2
Shop 51–a, 52–b, 53–c (*Machine Shop*)	2	2	*2
Ed. 20–a (*History and Prin. of Vocational Education*)	3		
Ed. 40–b (*Special Methods in Industrial Education*)		3	
Ed. 41–c (*Supervised Teaching in Industrial Ed.*)			15
Electives	6	4	3
	18	18	18

* Not required of students preparing to become teachers. Such students will take an equivalent number of hours from Group 3 listed below.

Students intending to specialize in manufacturing, industrial management or construction will take their electives from Group I, subject to the approval of the Dean of the College of Technology.

Students planning to specialize in salesmanship will take their electives from Group II listed below, with emphasis placed upon the subjects in Economics, English and Foreign Languages, subject to the approval of the Dean of the College of Technology.

PRESCRIBED ELECTIVES

Group I

Manufacturing, Industrial Management or Construction

*Power Plant Machinery
*Shop Work (Forge or machine)
†Shop Work (Machine shop)
Economics
English
Sociology
Military Science
Engineering subjects

Group II

Salesmanship

English
*Economics
*Foreign Languages—French or Spanish
Sociology
Military Science
Engineering subjects

Students preparing to engage in teaching Mechanic Arts under the Smith-Hughes provisions will take their electives during their junior and senior years from Group III listed below, and must take the work in Education and Psychology as listed below. In the senior year they will also take six hours of prescribed electives from this group during the fall term and seven hours during the winter term, but need not take the subjects listed in the spring term of the senior year marked thus.*

Group III

Psychology (24–b)
Education (27–c)
Education (41–c)
Chemistry
Economics
English
Engineering subjects
Mathematics
Physics
Sociology
Military Science

* Required to be taken in the Junior year.
†Required to be taken in the Senior year.

DESCRIPTION OF SUBJECTS

(Alphabetically Arranged)

The title of each subject is given in black face type. The numeral designates the particular subject; and the letter (a, b, or c) designates the term in which the subject is given. The letter "a" indicates that a subject is given the first term; "b," the second term; and "c," the third term. A combination of the letters (a-b, b-c, or a-b-c) attached to a numeral indicates that the subject is given through the terms represented by the letters.

Following the title of each subject is the description of the work given, and the name of the instructor.

The next paragraph gives the following information in the order indicated: (1) prerequisites, if any; (2) in what courses the subject is required and the undergraduate year in which it should be taken; (3) the number of credits the subject will count toward graduation; (4) the number of lectures, recitations, or laboratory periods required a week. Lectures and recitations are fifty minutes in length. Laboratory periods are two and one-half hours in length.

All subjects unless otherwise noted are open to students who have passed the prerequisites.

An elective subject will be given only when there is a minimum of five students registered for the same.

ACCOUNTING

(See Economics)

AGRICULTURAL CHEMISTRY

HENRY R. KRAYBILL, *Professor*
CHARLES P. SPAETH, *Instructor*

Minor: 27 hours in Agricultural Chemistry.

1–a. Agricultural Chemistry. A study of the chemistry of the carbon compounds, with special emphasis upon those of most importance in agriculture. Mr. Kraybill and Mr. Spaeth.

Prerequisites: Chemistry 3–c and 5–c. Required of Sophomores in Agriculture. Elective for students in Liberal Arts. 3 credits: 2 recitations; 1 laboratory.

2–b. Agricultural Chemistry. The chemistry of the processes of growth and development of plants, plant compounds, crops and the factors influencing plant growth, such as air, soil, fertilizers, lime, manure, etc. Mr. Kraybill and Mr. Spaeth.

Prerequisite: Agricultural Chemistry 1–a. Required of Sophomores in Agriculture. 3 credits: 2 recitations; 1 laboratory.

3–c. Agricultural Chemistry. The chemistry of animal physiology, foods and dairy products and an introduction to quantitative analysis. Mr. Kraybill and Mr. Spaeth.

Prerequisite: Agricultural Chemistry 2–b. Required of Sophomores in Agriculture. 3 credits: 2 recitations; 1 laboratory.

13–a, 14–b, 15–c. Thesis. Each student is given a special problem involving laboratory and library work. Mr. Kraybill.

Prerequisite: Agricultural Chemistry 9–c. Required of students in Agricultural Chemistry. 3 credits: 3 laboratories.

UNDERGRADUATE AND GRADUATE SUBJECTS

4–b. Physiological Chemistry. The chemistry of animal physiology, including the chemistry of carbohydrates, proteins, fats, the cell, enzyme action, digestion, absorption, metabolism, etc. Mr. Spaeth.

Prerequisite: Agricultural Chemistry 1–a, or at least 3 credits in Organic Chemistry. Required of Juniors in Home Economics, Juniors in Animal Husbandry and Dairy Husbandry and Seniors in Agricultural Chemistry. Elective for students in Liberal Arts and Agriculture. 3 credits: 2 recitations; 1 laboratory.

5–c. Physiological Chemistry. The qualitative and quantitative examination of blood and urine. Mr. Spaeth.

Prerequisite: Agricultural Chemistry 4–b. 3 credits: 1 recitation; 2 laboratories. Required of Seniors in Agricultural Chemistry. Elective for other students.

6–a. Plant Chemistry. The chemistry of plant physiology, including the study of the colloidal state, the chemistry of the carbohydrates, proteins and fats, enzymes, plant acids, pigments and their relation to plant nutrition. Mr. Kraybill.

Prerequisite: Agricultural Chemistry 3–c or at least 3 credits in Organic Chemistry and 5 credits in Quantitative Analysis. 4 credits: 2 recitations; 2 laboratories. Elective. (Given only in alternate years beginning with 1922–23.)

7–a, 8–b, 9–c. Agricultural Analysis. Analysis of plant materials, soils, fertilizers, feedstuffs, insecticides, fungicides, lime, foods and dairy products. Mr. Kraybill and Mr. Spaeth.

Prerequisites: At least 12 credits in quantitative analysis and 8 credits in organic chemistry. Required of students in Agricultural Chemistry. Elective for Chemistry students and others having the prerequisites. 4 credits: 4 laboratories.

16–a, 17–b, 18–c. **Seminar.** Mr. Kraybill and Mr. Spaeth.

Elective by special arrangement. Credits to be arranged.

19–c. **Dairy Chemistry.** A study of the chemistry and methods of analysis of milk and other dairy products. Mr. Kraybill and Mr. Spaeth.

Prerequisite: Agricultural Chemistry 3–c or at least 3 credits in Organic Chemistry and 5 credits in Quantitative Analysis. Required of Dairy Husbandry students. 3 credits: 1 recitation; 2 laboratories. (Given only in alternate years beginning with 1924–1925.)

GRADUATE SUBJECTS

10–a, 11–b, 12–c. **Advanced Agricultural Chemistry.** Mr. Kraybill and Mr. Spaeth.

Elective by special arrangement. Credits to be arranged.

20–a, 21–b, 22–c. **Research in Agricultural Chemistry.** Mr. Kraybill.

Elective by special arrangement. Credits to be arranged.

AGRICULTURE

FREDERICK W. TAYLOR, *Professor*

1–b. **Survey of Agriculture.** A brief history of agriculture as a business and scientific profession in this country; a general discussion and survey of the various branches of agriculture and the opportunities for work which each affords. The subject is intended primarily to assist the student in selecting his technical subjects in the later years of his college course. Lectures on the several agricultural courses by the various heads of departments. Mr. Taylor.

Required of Freshmen in Agriculture. 1 credit: 1 lecture.

2–b. **Extension Organization and Methods.** A brief history of the origin and development of extension work in agriculture and home economics in the state and nation. Lectures on extension methods and practices. Actual demonstrations as put on in different parts of the state will be given by members of the resident and extension staff. Purpose of the subject is to furnish a good understanding of the nature

of extension organization, its coöperative relationships, and especially extension methods and the results to be attained in the field.

3 credits: 2 lectures: 1 demonstration. Subject to be given under the direction of J. C. Kendall, Director of Extension Work. Elective for Seniors in Agriculture and Home Economics.

3–c. Supervised Extension Work. During the third term of the senior year a limited number of students in agriculture and home economics with the approval of the Dean of the College and the Director of the Extension Service will be allowed to do supervised extension work in the state under the immediate direction of a member of the extension staff. At least twelve weeks will be devoted to this field work. Mr. Taylor and Mr. Kendall.

Prerequisite: Agriculture 2–b. 16 credits.

AGRONOMY

FREDERICK W. TAYLOR, *Professor*
M. GALE EASTMAN, *Assistant Professor*

1–a. Agricultural Engineering. Lectures and recitations upon the mapping of farms; fencing; drainage; farm sanitation; tillage and harvesting machinery; concrete construction; silos; farm motors; roads and principles of draft. Practical work in map making, laying out drains, rope splicing, comparing farm machines, etc. Mr. Taylor.

Required of Sophomores in Agriculture. 4 credits: 3 lectures; 1 laboratory.

2–a. Forage Crops. Text-books, lectures, and recitations covering the history, use, value, and methods of producing forage crops, including grasses, legumes, and roots. Practical work in judging and identifying in the field and in the laboratory. Mr. Eastman.

Required of Juniors in certain courses. 3 credits: 2 lectures; 1 laboratory.

3–b. Cereal Crops. Text-books, lectures, and recitations covering the history, use, value and methods of producing cereal crops. Laboratory work in identifying and judging grain plants and their products. Practically all the common field crops, including potatoes, tobacco, etc., will be considered in 2–a and 3–b. Plants will be studied with particular reference to New England conditions, but their distribution in the

United States or elsewhere will also be noted as a measure of their general adaptability. Important crops not grown in our section, like cotton and rice, will be briefly surveyed. Mr. Eastman.

Required of Juniors in certain courses. 3 credits: 2 lectures; 1 laboratory.

4–c. Soils. Text-book and recitations upon the formation, kinds and physical properties of soils; the movements and conservation of soil moisture; the relation of heat and air to soil; the nature and physical effects of tillage and fertilizers; laboratory work and experimentation with soils to show the physical effects of different conditions and texture. Mr. Eastman.

Required of Sophomores in Agriculture. 4 credits: 3 lectures; 1 laboratory.

6–b. Fertilizers. Lectures, text-book and recitations upon the value, use and function of plant food materials, including manure, and upon the compounding and selection of fertilizers. Mr. Taylor.

Prerequisite: Agricultural Chemistry 1–a. Required of Seniors in certain courses. 3 credits: 3 recitations.

7–c. Farm Accounting. Lectures and reference work relating to the principles of accounting and their application to the farm business. Laboratory exercises will include sets of complete cost accounts taken from actual farms. Mr. Eastman.

Required of Juniors in certain courses. 3 credits: 1 lecture; 2 laboratories.

8–a. Farm Management. Text-book, lectures and recitations upon the development of farming as a business, types of farming, size of farms, cropping systems, livestock problems, the marketing of farm products, and the choosing and buying of a farm. Practical work will be given in laying out farms, and in studying survey records of individual farms in order to find the labor income; also in analyzing the farm business record for the purpose of determining the effect of efficiency factors on the profits made. Exercises will be given in the arrangement and rearrangement of farm buildings, the plotting of the distribution of labor, and the taking of survey records. Mr. Eastman.

Required of Seniors in Agriculture, except in Forestry. 4 credits: 2 lectures; 2 laboratories.

9–b. Agricultural Statistics. An advanced subject for those who wish to familiarize themselves with proper methods of obtaining and

tabulating statistics and experimental data. Lectures and laboratory work will deal with some of the common sources of error likely to affect scientific findings as well as everyday conclusions. Mr. Eastman.

Elective for Seniors. 2 credits: 1 lecture; 1 laboratory.

10–c. Types of Farming. A statistical study of the types of farming in the United States, with special reference to crop rotation, area in crops, use of machinery, efficiency of man and horse labor, adaptability of crops and animals, and relative profits. Mr. Eastman.

Prerequisite: Agronomy 8–a. Elective for Seniors. 2 credits: 1 lecture; 1 laboratory.

11–b, 12–c. Special Agronomy. Advanced work for students interested in some particular phase of agronomy. No class exercises. The hours and kind of work must be arranged with the department before the subject is elected. Mr. Taylor.

Prerequisites: Agronomy 1–a to 4–c inclusive. Elective for Seniors. 1 to 3 credits.

14–b. Agricultural Seminar. Library and reference work, the preparation of bibliographies, a study of the work and history of agricultural colleges and experiment stations. Mr. Taylor.

Elective for Seniors in Agriculture. 1 credit: 1 lecture.

ANIMAL HUSBANDRY

JOHN C. MCNUTT, *Professor*
LORING V. TIRRELL, *Instructor*

1–a. Types and Breeds of Livestock. A study of the different breeds of horses, cattle, sheep, and swine in respect to their origin, history, development, characteristics, and adaptability to different conditions of climate and soil. One afternoon each week is devoted to judging the different breeds. Mr. McNutt and Mr. Tirrell.

Required of Freshmen in Agriculture. 4 credits: 3 recitations; 1 laboratory.

2–c. Livestock Judging. The work consists of a study of the principles and practice of judging horses, beef cattle, sheep, and swine, and of the market classes and grades of horses and meat animals.

For a part of the laboratory work, trips are taken to some of the best breeding establishments in New England. Mr. McNutt.

Prerequisite: Animal Husbandry 1–a. Required of Sophomores electing Animal Husbandry. 2 credits: 2 laboratories.

3–a. **Feeds and Feeding.** A study of the character, composition, and digestibility of feed stuffs, and the methods of feeding different kinds of farm animals. Numerous samples of grains and by-products are used for the purpose of familiarizing the students with the different feed stuffs. Practice is given in calculating rations for various purposes. Mr. Tirrell.

Required of Seniors in Animal Husbandry, Dairy Husbandry and Teacher Training courses. 3 credits: 2 recitations; 1 laboratory.

4–a. **Anatomy of Farm Animals.** Lectures and recitations upon the form and structure of the domesticated animals. Skeletons, various anatomical specimens, models, charts, and lantern slides are used to make the subject as practical as possible. The purposes of this subject are to show the relation between the skeleton and the form and function of the animal, and to serve as a foundation for the intelligent study of animal diseases and ailments. Mr. Tirrell.

Required of Juniors in Animal Husbandry. 3 credits: 2 recitations; 1 laboratory.

5–b. **Animal Diseases.** A study of the more common economic infectious diseases of farm animals, their prevention and treatment, and general sanitation. Mr. McNutt.

Prerequisite: Animal Husbandry 4–a. Required of Juniors in Animal Husbandry. 3 credits: 2 recitations; 1 laboratory.

6–c. **Animal Diseases.** Continuation of 5–b, together with a study of the common non-infectious diseases and ailments of farm animals, and their treatment: unsoundness of the horse; the principles of horseshoeing, and the practice of simple surgical operations. Mr. McNutt.

Prerequisite: Animal Husbandry 4–a. Required of Juniors in Animal Husbandry. 3 credits: 2 recitations; 1 laboratory.

7–a. **Animal Breeding.** A study of the principles and practices of breeding farm animals. Practice is given in tracing out and studying pedigrees. Mr. Tirrell.

Required of Seniors in Animal Husbandry. 4 credits: 3 recitations; 1 laboratory.

8–c. Livestock Markets and Products. A study of the various kinds of livestock markets and of the methods and regulations applying to the transportation of livestock. Some time will be spent in a study of the livestock centers, the stock yards, and the government inspection of animals before and after slaughter. The butchering of animals on the farm and the various cuts of meats will be discussed. References will be supplied to the student for individual work. Occasional trips will be taken to slaughter houses and packing plants. Mr. Tirrell.

Prerequisite: Animal Husbandry 1–a. Required of Seniors in Animal Husbandry. 3 credits: 3 recitations.

9–c. Sheep and Swine Husbandry. A consideration of the judging, breeding, feeding, management and preparation for the show ring of sheep and swine, with special reference to New Hampshire conditions. Mr. McNutt.

Prerequisites: Animal Husbandry 1–a and 3–a. Required of Juniors in Animal Husbandry. 4 credits: 3 recitations; 1 laboratory.

10–b. Management of Horses and Beef Cattle. Lectures and recitations upon the care of brood mares and cows, management of stallions and bulls, the breaking and training of colts, preparation of animals for the show ring, the management of pure bred beef herds, and the feeding and handling of steers and oxen. Mr. McNutt.

Prerequisites: Animal Husbandry 1–a and 3–a. Required of Seniors in Animal Husbandry. 4 credits: 3 recitations; 1 laboratory.

12–c. Animal Husbandry Seminar. Library and reference work and the preparation of papers on various animal husbandry subjects of timely importance. Mr. McNutt.

Prerequisites: Animal Husbandry 3–a, 5–b, 6–c, and 7–a. Required of Seniors in Animal Husbandry. 2 credits: 1 seminar; 1 laboratory.

13–c. Principles of Nutrition. The subject matter deals with the physiology of the digestive tract and its functions; the processes of digestion, absorption, and excretion. The relationship of energy to body activities and the balance between the nitrogen and energy of the feed and the requirement of the animal. Mr. Tirrell.

Prerequisite: Agricultural Chemistry 4–b. Required of Juniors in Animal Husbandry. 2 credits: 2 recitations.

14–a. Breeding and Management of Livestock. This subject is a brief consideration of the principles of breeding, feeding, marketing and management of beef cattle, horses, sheep and swine. Mr. McNutt.

Prerequisites: Animal Husbandry 1–a and 3–a. Offered and designed for students in the Teacher Training course only. Senior year. 3 credits: 2 recitations; 1 laboratory.

ARCHITECTURE AND DRAWING

ERIC T. HUDDLESTON, *Professor*
THOMAS J. LATON, *Assistant Professor*
PAUL H. SHRAMM, *Instructor*
CHESTER E. DODGE, *Instructor*

Major: 27 term hours of departmental subjects conforming to the requirements below.

Minor: 27 term hours of subjects taken in two departments approved by the advisor with not less than 9 hours in any one department.

Requirements: Major in Art. Those students who wish to prepare themselves as teachers of drawing and design in the public schools are required to take Art 1–a, 2–b, 3–c, or 10–a, 11–b, 12–c, and not less than 15 additional hours of Art, and 9 hours of Architecture.

Requirements: Major in Architecture. Those students who wish to major in Architecture either as a cultural course or as a preparation for more advanced study of architecture as a profession are required to take the Arts Course in Architecture. See curriculum.

Architectural and engineering students, except chemists, will be required to purchase their instruments. Other students may have instruments loaned to them upon a deposit, which will be returned to them with a small rental fee deducted, when the instruments are returned in good condition.

ARCHITECTURE

Schedule the following subjects as Arch. 1–a, 2–b, etc.

1–a, 2–b, 3–c. History of Architecture. A brief study of the important periods of architectural development and their relation to modern architecture. Text used: *A History of Architecture*, by Kimball and Edgell. Mr. Huddleston.

Required of Sophomores in Architectural Construction and Sophomores in the Arts course in Architecture. Elective to others only by permission of the instructor. 2 credits: 2 recitations.

10–a, 11–b, 12–c. Elements of Architecture. Drafting room exercises in the study of the classic orders of architecture, and elementary studies in architectural composition and design. Mr. Huddleston.

Required of Freshmen in Architectural Construction and Freshmen in the Arts course in Architecture. 2 credits: 2 drawing periods. Required of Sophomores (1924–25) in Architectural Construction; 3 credits: 3 drawing periods.

20–a. Domestic Architecture. Lectures and recitations devoted to a brief study of the history of domestic architecture; the relation of the house plan to home making and to the individual family; its relation to the individual site, to the garden, to accessory buildings, and to the community; supplemented by drafting room exercises in the use of drawing instruments as a preparation for further study in house planning. Mr. Huddleston.

Required of Juniors in Home Economics and Seniors in Architectural Construction and Seniors in Arts course in Architecture. 2 credits: 1 lecture; 1 drawing period.

21–b. Domestic Architecture. Drafting room exercises in architectural representation, followed by an analytical study of house plans. Problems are issued to the student for graphical solution such as would be presented to an architect by a prospective home builder. Mr. Huddleston.

Prerequisite: Arch. 20–a. Required of Juniors in Home Economics and Seniors in Architectural Construction and Seniors in Arts course in Architecture. 2 credits: 2 drawing periods.

22–c. Domestic Architecture. A continuation of Arch. 21–b, taking up the study of an individual building problem, and making working drawings for a small frame house designed by the student to conform to specified requirements. Mr. Huddleston.

Prerequisite: Arch. 21–b. Required of Juniors in Home Economics and Seniors in Architectural Construction and Seniors in Arts course in Architecture. 2 credits: 2 drawing periods.

30–a, 31–b, 32–c. Building Construction. Conferences, text-book study, and drafting room exercises in a comprehensive study of the fundamental principles involved in the different types of building construction, the different forms of elementary structures, and some idea

of the typical proportions imposed by the use of different kinds of materials. Mr. Dodge.

Prerequisite: Draw. 7–c. Required of Juniors in Architectural Construction and Juniors in the Arts course in Architecture. 3 credits: 2 recitations; 1 drawing period.

34–b. **Building Sanitation.** A study of water, soil, waste, and vent pipe systems within the building; plumbing fixtures, traps, etc., and their installation, and the fundamentals of the layout of the above in different types of buildings. Mr. Dodge.

Required of Juniors in Architectural Construction and Juniors in the Arts Course in Architecture. 1 credit: 1 lecture.

36–a, 37–b. **Structural Design.** Graded problems in structural design of buildings, giving special consideration to the practical analysis of each problem and the structural details involved in its design. Typical detailed working drawings are made such as would be required to execute the work under contract. Mr. Huddleston and Mr. Dodge.

Prerequisite: Arch. 32–c, and 52–c. Required of Seniors in Architectural Construction. 6 credits, 1st term; 9 credits, 2nd term; requiring a minimum of 15 and 23 hours per week respectively.

38–c. **Architectural Thesis.** A thesis will be required of each student, consisting of a set of original working drawings, complete in details and specifications, for a public building designed to meet certain specified requirements. This work must be done in the drafting room of the department and under the supervision of the instructor. Mr. Huddleston and Mr. Dodge.

Prerequisite: Arch. 37–b. Required of Seniors in Architectural Construction. 9 credits, requiring a minimum of 23 hours per week.

41–c. **Professional Relations.** Discussions and assigned reading covering the personal, ethical, business, and legal relations of the architect with clients, contractors, craftsmen, etc., and the relations that should exist between the architect and the community in which he lives. Mr. Huddleston.

Prerequisite: Arch. 37–b. Required of Seniors in Architectural Construction and Seniors in Arts course in Architecture. 1 credit: 1 recitation.

45–c. Contracts and Specifications. Discussions and assigned reading covering the principles and forms of building contracts and standard specifications. References are made to the various documents of the American Institute of Architects and to specifications which have been used in the construction of buildings. Mr. Huddleston.

Prerequisite: Arch. 37–b. Required of Seniors in Architectural Construction and Seniors in Arts course in Architecture. 2 credits: 2 recitations.

50–a, 51–b, 52–c. Architectural Design. A progressive series of problems in architectural planning and design, advancing from the small building to the more important classes of buildings and to the group problem. Mr. Huddleston.

Prerequisite: Arch. 12–c and Art 15–c. Required of Juniors in Architectural Construction and Sophomores in Arts course in Architecture. 3 credits, requiring a minimum of 8 hours per week.

53–a, 54–b, 55–c. Architectural Design. A continuation of 52–c with advanced problems in architectural design, composition and planning. Mr. Huddleston.

Prerequisite: Arch. 52–c. Required of Juniors in Arts course in Architecture and elective for Seniors in Architectural Construction. 3 credits, requiring a minimum of 8 hours per week.

56–a, 57–b, 58–c. Architectural Design. Competitive problems issued by the Beaux Arts Institute of Design will be used as a basis for advanced study of architectural design. Mr. Huddleston.

Prerequisite: Arch. 52–c. Elective by special permission. 6 credits, requiring a minimum of 18 hours per week.

INDUSTRIAL AND FINE ARTS

Schedule the following subjects as Arts 1–a, 2–b, etc.

1–a. Elementary Design. Studio exercises in the fundamentals of design, for the purpose of developing the student's ability to draw. Studies in pencil, pen and ink, and brush of lines, space arrangement, proportion of line and form, symmetry and balance, and their adaptation to motifs for decoration according to the laws of beauty, harmony and construction. Mr. Shramm.

Required of Sophomores in Home Economics. 2 credits: 2 drawing periods.

2–b. Decorative Design. Studio exercises devoted to an analytical study of historic ornament, flower and plant forms, and the human figure, supplemented with the study of color theories, harmonies and qualities based on spectral colors; practice in tinting, contrasting, and harmonizing colors. Mr. Shramm.

Prerequisite: Art 1–a. Required of Sophomores in Home Economics. 2 credits: 2 drawing periods.

3–c. Advanced Design. An elective offered to give a broader working knowledge of design principles; these principles to serve as a guide and for practical application in selection, adaptation and composition (both structural and decorative) in interior decoration and costume design.

Prerequisite: Art 2–b. Required of Sophomores in Home Economics. 2 credits: 2 drawing periods.

10–a, 11–b, 12–c. Elementary Free-hand Drawing. Studio exercises in the elements of design and the study of the principles of arrangement, proportion of line and form, symmetry and balance; followed by a study of the larger elements of design with brush and charcoal, and landscape composition in water color and pen and ink. Mr. Shramm.

Required of Freshmen in Architectural Construction and Freshmen in Arts course in Architecture. 3 credits: 3 drawing periods.

13–a, 14–b, 15–c. Free-hand Drawing. Studio exercises in pencil, charcoal, pen and ink, water color, and clay modeling from architectural details and plaster casts of the human form; sketching from nature and from memory. Mr. Shramm.

Prerequisite: Art 3–c or 12–c. Required of Sophomores in Architectural Construction and Sophomores in Arts course in Architecture. 2 credits: 2 drawing periods.

16–a, 17–b, 18–c. Advanced Free-hand Drawing. Studio work arranged to meet the needs of those students who show special ability and are judged capable of doing individual work of an advanced nature. Mr. Shramm.

Prerequisite: Art 15–c. Special permission must be obtained from the head of the department before registering in this subject. 3 credits: 3 drawing periods.

DRAWING AND DESCRIPTIVE GEOMETRY

Schedule the following subjects as Draw. 1–a, 2–c, etc.

1–a, 1.5–b, 2–c. Engineering Drawing. A study is made of the fundamentals of engineering drawing, including free-hand lettering, the use of drawing instruments, the solution of problems in orthographic projection, isometric drawing as an aid in sketching and representing the shape of machine parts, and different types of fastenings (bolts, screws, rivets, etc.) with reference to their use in machine drawing. Commercial drafting room methods are studied and employed in sketching machine parts, drawing from sketches, making of tracings and blueprints. Text: *Engineering Drawing*, by French. Mr. Laton.

Required of Freshmen in Electrical, Mechanical and Industrial Teacher Training courses. 2 credits: 2 drawing periods.

3–a. Machine Drawing. This subject covers the problem of developments and intersections as applied to sheet metal work, and a further study of isometric, oblique and axiometric systems of drawing. Mr. Laton.

Required in Electrical, Mechanical and Industrial courses. 2 credits: 2 drawing periods.

4–b, 4.5–c. Descriptive Geometry. An application of the principles of descriptive geometry to the solution of problems in points, lines, planes and solids. Mr. Laton.

Prerequisite: Draw. 3–a. Required of Sophomores in Electrical, Mechanical and Industrial courses. 2 credits: 2 drawing periods.

5–a. Mechanical Drawing. A study of the fundamentals of mechanical drawing, including free-hand lettering, the use of drawing instruments and a brief study of orthographic and isometric projection. Mr. Dodge. Text: *Architectural Drawing* by Field.

Required of Freshmen in Architectural Construction, Arts course in Architecture and Chemical Engineering. 2 credits: 2 drawing periods.

6–b, 7–c. Graphics. Exercises in constructive and descriptive geometry with applications to developments and intersections, shades and shadows, and perspective. Mr. Dodge.

Prerequisite: Draw. 5–a. Required of Freshmen in Architectural Construction and Art course in Architecture. 2 credits: 2 drawing periods.

10–c. Agricultural Drawing. Instruction in this subject includes drafting room exercises in free-hand lettering; the use of drawing instruments; a brief study of orthographic and isometric projection, together with the drawing of plans and elevations of simple farm structures. Mr. Dodge.

Elective for Sophomores in Agriculture. 2 credits: 2 drawing periods.

BOTANY

ORMOND R. BUTLER, *Professor*
MABEL M. BROWN, *Assistant Professor*
L. J. KLOTZ, *Assistant Professor*

Major: 27 hours exclusive of Botany 1–a, 2–b and 3–c. Chemistry 1–a, 2–b and 5–c must be elected and will be counted as part of the major.

Minor: 27 hours. Work may be taken in two departments, but not less than 9 hours' work can be taken in any one department. The minor work may be taken in Language and Literature, Education, Chemistry, Mathematics, Physics, Zoölogy. Agriculture (plant industry subjects) can be offered only as part of a minor.

1–a. Elementary Botany. This subject is devoted to a study of the seed plants, their morphology, physiology and classification. During the first term, seeds, seed germination, seedlings, and the form structure and function of roots, stems and leaves are studied. Miss Brown.

Required of Freshmen in Agriculture. 3 credits: 1 lecture; 2 laboratories.

2–b. Elementary Botany. Continuation of 1–a. During the second term a study of the kinds, form and function of buds, vegetative and sexual reproduction, fertilization and growth of the embryo, fruit and fruit dispersal is undertaken. Miss Brown.

Prerequisite: Botany 1–a. Required of Freshmen in Agriculture. 3 credits: 1 lecture; 2 laboratories.

3–c. Elementary Botany. Continuation of 2–b. The third term is devoted to a study of the effect of environment on growth, types of vegetation, classification of plants, with especial attention to genera of economic importance, theories of the origin of species, and the origin of our cultivated plants. Miss Brown.

Prerequisite: Botany 2–b. Required of Freshmen in Agriculture. 3 credits: 1 lecture; 2 laboratories.

4–b, 5–c. Plant Physiology. Structure and properties of the cell; absorption and movement of water; metabolism; growth and irritability. Mr. Klotz.

Prerequisite: Botany 3–c. Required of Juniors in Forestry and Seniors in Horticulture. 3 credits: 1 lecture; 2 laboratories.

6–a. Plant Histology. Characterization and differentiation of plant tissues; micro-technique. Mr. Klotz.

Prerequisite: Botany 3–c. Required of Juniors in Forestry. 3 credits: 3 laboratories.

8–a. General Bacteriology. The study of the morphology and physiology of bacteria and related organisms; the principles of sterilization; preparation of media; technique of staining; methods of isolation, cultivation and observation. Miss Brown.

Required of all Home Economics Juniors. 3 credits: 1 lecture; 2 laboratories.

8.5–b. Applied Microbiology. Standard methods of examination of milk and water; soil and sewage bacteria; the relation of microörganisms to the spoilage of food and food poisoning; organisms pathogenic to plants and animals. Miss Brown.

Prerequisite: Bacteriology 8–a. Required of all Home Economics Juniors. 3 credits: 1 lecture; 2 laboratories.

10–b, 11–c. Agricultural Bacteriology. A study of the morphology and physiology of the bacteria, and the practical application of bacteriology to agriculture, special attention being given to the relation of microorganisms to soil fertility, the dairy industry, diseases of plants and animals, and the maintenance of pure water supplies. Miss Brown.

Required of all Agricultural Sophomores. 3 credits: 2 lectures; 1 laboratory.

12–a. Plant Pathology. The bacterial and fungous diseases of plants; their symptoms, cause and prevention. Mr. Klotz.

Prerequisite: Botany 3–c. Required of Juniors in Horticulture and Seniors in Forestry and Teacher Training. 3 credits: 1 lecture; 2 laboratories.

13–b. Plant Pathology. A continuation of 12–a.

Prerequisite: Botany 12–a. Required of Juniors in Horticulture and Seniors in Forestry. 3 credits: 1 lecture; 2 laboratories.

15–a, 16–b, 17–c. Advanced Botany. The subject-matter will depend upon the training and desire of the student. It cannot be elected without previous consultation. Mr. Butler, Miss Brown and Mr. Klotz.

Credit and hours by arrangement, one or more terms.

18–b. Plant Pathology. Lectures on the fungous diseases of our economic plants, their symptoms, cause, and prevention. Mr. Klotz.

Prerequisite: Botany 12–a. Required of Teacher Training Seniors. 1 credit: 1 lecture.

19–c. Systematic Botany. A study of the higher plants of our native flora. The student is required to prepare an herbarium of 60 specimens.

Field trips; laboratory work; occasional lectures. 2 credits.

20–a, 21–b, 22–c. Seminar. A critical study of botanical investigations.

Elective. 1 credit per term.

CHEMISTRY

CHARLES JAMES, *Professor*
GEORGE A. PERLEY, *Associate Professor*
MELVIN M. SMITH, *Assistant Professor*
WALTER S. FROST, *Assistant Professor*
HEMAN C. FOGG, *Instructor*
JEREMIAH F. GOGGIN, *Assistant*
HERMAN M. PATRIDGE, *Assistant*
ANDREW C. RICE, *Assistant*

1–a, 2–b, 3–c. Inorganic Chemistry. Lectures and recitations on general and theoretical chemistry, illustrated by experiments, charts, specimens, lantern views, etc. Solution of chemical problems will be required. Mr. James, Mr. Perley, Mr. Smith, Mr. Frost, Mr. Goggin, Mr. Patridge and Mr. Rice.

Required of Freshmen in Agriculture and Engineering. 3 credits: 2 lectures; 1 laboratory.

5–c. Qualitative Analysis. Laboratory practice, with occasional lectures and recitations. The student is expected to become proficient in the separation and detection of the common acids and bases, and to keep a full set of notes. Mr. Fogg and Mr. Rice.

Prerequisite: Chemistry 2–b. Required of Freshmen in Agriculture. 3 credits: 3 laboratories.

6–a, 7–b, 8–c. Inorganic Chemistry. Similar to Chemistry 1–a, 2–b, 3–c. Mr. Smith.

Required of Freshmen in Home Economics. 3 credits: 2 recitations; 1 laboratory.

10–a. Qualitative Analysis. Laboratory work, with occasional lectures and recitations. The work covered includes the detection of the more familiar acids and bases in both simple and complex mixtures. Mr. Fogg.

Prerequisite: Chemistry 3–c. Required of Sophomores in Chemistry. 6 credits: 6 laboratories.

11–a. Qualitative Analysis. Similar to Chemistry 5–c, but adapted to the use of Sophomores in Electrical and Mechanical Engineering. Mr. Fogg and Mr. Rice.

Prerequisite: Chemistry 2–b. 3 credits: 3 laboratories.

12–b. Introduction to Quantitative Analysis. A brief course to acquaint the student with the fundamental principles and manipulations in quantitative analysis. Mr. Fogg and Mr. Rice.

Prerequisite: Chem. 11–a. 3 credits: 3 laboratories.

15–a, 16–b. Organic Chemistry. A study of the more important organic compounds from the viewpoint of the Home Economics student. Mr. Fogg.

Prerequisite: Chemistry 3–c or 8–c. Required of Sophomores in Home Economics. 3 credits: 2 recitations; 1 laboratory.

18–b. Quantitative Analysis. A preliminary study of quantitative analysis to familiarize the student with the general methods of chemical manipulation and analysis. Mr. Frost.

Prerequisites: Chemistry 10–a. Required of Sophomores in Chemistry. Elective for Sophomores, Juniors and Seniors in Liberal Arts, provided laboratory facilities permit. 5 credits: 5 laboratories.

19–c. Quantitative Analysis. A continuation of 18–b.

Prerequisite: 18–b. Required of Sophomores in Chemistry. Elective for Sophomores, Juniors and Seniors in Liberal Arts, provided laboratory facilities permit. 7 credits: 7 laboratories.

20–a. Organic Chemistry. Lectures and recitations. A study of the chemistry of the carbon compounds. Mr. James.

Prerequisite: Chemistry 3–c. Required of Sophomores in Chemistry. Elective for Liberal Arts students. 2 credits: 2 lectures.

21–b, 22–c. Organic Chemistry. A continuation of 20–a.

Prerequisite: Chemistry 20–a. Required of Sophomores in Chemistry. Elective for Liberal Arts students. 3 credits: 3 lectures.

23–c. Household Chemistry. This subject treats of the chemistry of foods, beverages, baking chemicals, preservatives and detergents. Mr. Perley.

Prerequisite: Chemistry 8–c. Required of Sophomores in Home Economics. 3 credits: 1 lecture; 2 laboratories.

***24–a, –c. Organic Chemistry Laboratory.** The work in this subject consists mainly of laboratory practice in preparing and purifying organic compounds. Lectures and recitations will be held from time to time in connection with the practice. Mr. Perley.

Prerequisite: Chemistry 22–c. Required of Juniors in Chemistry. Elective for Liberal Arts students. 2 credits: 2 laboratories.

25–b. Organic Chemistry Laboratory. A continuation of Chemistry 24–a. Mr. Perley.

Prerequisite: Chemistry 22–c. Required of Juniors in Chemistry. Elective for Liberal Arts students. 2 credits: 2 laboratories.

26–a. Advanced Quantitative Analysis. Mr. Frost.

Prerequisite: Chemistry 19–c. Required of students in Chemistry. Elective for Liberal Arts students. 4 credits: 4 laboratories.

27–b. Advanced Quantitative Analysis. A continuation of 26–a. Mr. Frost.

Prerequisite: Chemistry 19–c. Required of students in Chemistry. Elective for Liberal Arts students. 4 credits: 4 laboratories, for Arts students. 5 credits: 5 laboratories, for Chemical Engineers.

* Given as 24–c for students in the Arts Course in Chemistry.

28–c. Advanced Quantitative Analysis. A continuation of 27–b. Mr. Frost.

Prerequisite: Chemistry 19–c. Required of students in Chemistry. Elective for Liberal Arts students. 4 credits: 4 laboratories.

29–a, 30–b, 31–c. Physical Chemistry. Advanced study of chemical theory. Practical experiments will be performed in the determination of vapor density, molecular weights, specific heat, etc.; and the study of isomorphism, diffusion of gases, solutions, ionization, electrolysis, molecular and atomic volume, thermo chemistry, equilibrium, the phase rule, etc., will take up much of the time. Mr. Perley.

Prerequisite: Chemistry 3–c. Required of Juniors in Chemistry. Elective for Liberal Arts students. 3 credits: 3 lectures.

32–a, 33–b, 34–c. Advanced Inorganic Chemistry. Mr. James.

Prerequisite: Chemistry 3–c, for any term. Required of Seniors in the Arts course in Chemistry; and of Juniors in Chemical Engineering, unless they substitute Mil. Sci. 24–a, 25–b and 26–c. 3 credits: 2 lectures; 1 laboratory.

35–a, 36–b. Industrial Chemistry. Mr. Perley.

Prerequisite: Chemistry 3–c. Required of students in Chemical Engineering. Elective for students in the Arts course in Chemistry. 3 credits: 3 lectures.

38–a. Advanced Quantitative Laboratory. Gas analysis, etc. Mr. Frost.

Prerequisite: Chemistry 28–c. Required of Seniors in Chemical Engineering. 4 credits: 4 laboratories.

39–a. Thesis. The time is devoted to some selected subject, and the student is required to present a thesis showing him to be a careful manipulator and a person of independent thought. Mr. James.

For Seniors in Chemistry who have completed all quantitative analysis. Elective for Liberal Arts Seniors. 5 credits: 5 laboratories, for Arts and Science students. 4 credits: 4 laboratories, for Chemical Engineers.

40–b. Thesis. Similar to Chemistry 39–a. Mr. James.

Required of students in Chemical Engineering and students in Arts course in Chemistry. 5 credits: 5 laboratories, for Liberal Arts students. 6 credits: 6 laboratories, for Chemical Engineers.

41–c. Thesis. A continuation of 40–b. Mr. James.

Required of students in Chemical Engineering and students in Arts course in Chemistry. 5 credits: 5 laboratories, for Liberal Arts students. 6 credits: 6 laboratories, for Chemical Engineers.

42–a. Physical Chemical Laboratory. Mr. Perley.

Prerequisite: Chemistry 31–c. Required of students in Chemical Engineering. Elective for Liberal Arts students. 2 credits: 2 laboratories.

46–a, 47–b, 48–c. Advanced Research Work. Open only to graduate students. Hours to be arranged. Mr. James.

Prerequisites: Chemistry 31–c, 34–c and 41–c.

DAIRY HUSBANDRY

JOHN M. FULLER, *Professor*
HEBER F. DEPEW, *Assistant Professor*
BERT E. HUGGINS, *Assistant*

1–b. Farm Dairying. A general survey of the field of dairy husbandry. Such topics as the use of the Babcock test, farm separators, farm butter making and farm cheese making, and marketing dairy products, are included. Mr. Fuller.

Required of Sophomores in Agriculture. 4 credits: 3 lectures; 1 laboratory.

2–c. Dairy Cattle Judging. Animals in the college herd and in nearby herds will be judged. Mr. Fuller.

All students interested in the dairy cattle judging team should elect this subject. Required of students in Dairy Husbandry. 2 credits: 1 lecture; 1 laboratory.

3–a, 3.5–b. Milk Production. The field of dairy husbandry in its relation to the producer. Feeding dairy animals; systems of herd feeding; silage and soiling; raising dairy animals; dairy herd development; dairy barns; advanced registry management; fitting dairy animals for show; dairy cattle judging. Mr. Fuller.

Required of Seniors in Dairy Husbandry. 3–a, 4 credits: 3 lectures; 1 laboratory. 3.5–b, 3 credits: 2 lectures; 1 laboratory.

4–b. Testing Dairy Products. A thorough study of the Babcock test, with special work in testing various dairy products for butter fat; acidity tests for milk and cream; moisture tests for butter and cheese; use of lactometer. Mr. DePew.

Prerequisite: Dairy Husbandry 1–b or 8–a. Required of Juniors in Dairy Husbandry. 3 credits: 1 lecture; 2 laboratories.

5–a. Market Milk. Food value of milk; producing, handling, and distributing market and certified milk; dairy farm inspection; control of milk supply. Mr. DePew.

Prerequisite: Dairy Husbandry 1–b or 8–a. Required of Seniors in Dairy Husbandry. 4 credits: 3 lectures; 1 laboratory.

6–c. Ice Cream and Cheese Making. (1) Lectures and laboratory work covering the manufacture of the more important types of cheese; (2) The making, handling, and marketing of ice cream and ices. Mr. DePew.

Prerequisite: Dairy Husbandry 1–b or 8–a. Required of Seniors in Dairy Husbandry. 4 credits: 2 lectures; 2 laboratories.

7–a. Butter Making. A study of the secretion and of the chemical and physical properties of milk; pasteurization; cream ripening, starters, churning; organization and operation of factories. Mr. DePew.

Prerequisite: Dairy Husbandry 1–b. Required of Juniors in Dairy Husbandry. 4 credits: 2 lectures; 2 laboratories.

8–a. Domestic Dairying. Nutritive value of milk; market milk; modified milk; certified milk; condensed milk; milk powder; fermented milk; butter; cheese; and ice cream. Laboratory exercises are given in the manufacture of dairy products. Mr. DePew.

Elective for Juniors and Seniors in Home Economics and in Liberal Arts courses. 3 credits: 2 lectures; 1 laboratory.

9–a. Dairy Bacteriology. Methods of bacteriological analysis of milk and its products; relation of bacteria to milk and its products; study of effect on bacteria in milk of separation, clarification, pasteurization, aeration, and straining; and the application of bacteriological principles to the dairy industry. Mr. DePew.

Prerequisite: Botany 11–c. Required of Juniors in Dairy Husbandry. 3 credits: 1 lecture; 2 laboratories.

10–c. **Advanced Dairy Husbandry.** For students who are interested in some special phase of dairy husbandry. Requirements include a review of literature on subject chosen, together with original work by student. Proper arrangements must be made with department before subject is elected. Mr. Fuller.

Prerequisites: Dairy Husbandry 3–a and 3.5–b, or 5–b, or 6–c, or 7–c. Required of Seniors in Dairy Husbandry. 1 to 3 credits.

11–c. **Judging Dairy Products.** The various standards and grades of dairy products will be studied. Practice will be given in judging milk, butter, cheese, and ice cream. Mr. Depew.

Prerequisite: Dairy Husbandry 1–b. Elective for Agricultural students. 1 credit: 1 laboratory.

12–c. **Advanced Dairy Cattle Judging.** Comparative judging of dairy cattle. Written summary covering subject of judging. Mr. Fuller.

Prerequisite: Dairy Husbandry 2–c. Elective for Agricultural students. 2 credits: 1 lecture; 1 laboratory.

13–a. **Dairy Management.** Care and feeding of dairy animals; farm dairy buildings; dairy herd development; manufacturing and marketing of dairy products; cow test associations. Mr. Fuller.

Required of Teacher Training Juniors. 4 credits: 3 lectures; 1 laboratory.

ECONOMICS AND ACCOUNTING

HARRY W. SMITH, *Professor*
ARTHUR W. JOHNSON, *Assistant Professor*
NORMAN ALEXANDER, *Instructor*

Major: 27 hours of Economics. (See departmental requirements below.)

Minor: 27 hours of History, Political Science, Sociology, Mathematics, English or a Modern Language.

Purpose: The broadest purpose of college instruction in Economics is to contribute to the public welfare by cultivating intelligent citizenship. In a narrower way the study of Economics should prove indispensable to those who intend to devote themselves to business, law, journalism, agriculture, social work or the public service.

Parallel Subjects: Collateral work in American History, Political Science, Sociology, and Psychology would add greatly to the student's equipment for the most thorough work in Economics.

Departmental Requirements: Students majoring in the department of Economics are required to take the following courses as part fulfillment of their major requirements:

9 credits in Principles of Economics 1–a, 2–b, 3–c.
3 credits in each of the following three groups:

Group I. Economic History of U. S. 9–c
Economic History of Western Europe 11–c

Group II. Labor Problems 10–a
Corporation and Trust Problems 22–a

Group III. Money and Banking 14–b
Transportation 26–b

Required subjects: Beginning with September 1923, students majoring in Economics are expected to complete 9 hours of Mathematics.

ECONOMICS

Introductory Subjects. Group A

1–a, 2–b, 3–c. The Principles of Economics. In this subject the following will be considered: characteristics of the present economic system; evolution of economic society; production and consumption; value and price; money, credit and banking; international trade; protection and free trade; the kinds and nature of wealth; its distribution in the form of rent, wages, interest and profits. In addition certain selected economic problems such as transportation, insurance, socialism, agricultural problems and problems in elementary public finance will be studied.

Required of all students majoring in Economics. Elective for other Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

5–b. Rural Economics. Among the topics considered in this course are the following: the historic development of agriculture; agricultural labor; coöperation; agricultural credit; transportation; insurance; cold storage; marketing; conservation and taxation.

Prerequisite: Economics 1–a. Required of Juniors in Agriculture. 3 credits: 3 recitations. Will not be ac-

cepted as fulfilling major requirements in Economics, without written permission to the registrar. (Given as 8–b prior to 1923–24.)

9–c. Economic History of the United States. This subject aims to survey the economic development of the United States from colonial times to the present.

Prerequisite: Economics 3–c. 3 credits: 3 recitations. (Given in 1925–26.)

11–c. Economic History of Modern Europe. The purpose of this subject is to trace the origin, nature and effects of the important economic changes in Europe during the last four hundred years. Special attention will be paid to the economic development during the last century.

Prerequisite: Economics 3–c. 3 credits: 3 recitations. Given in 1924–25.

Secondary Subjects. Group B

10–a. Labor Problems. In this subject the historical background and the structure of labor organizations will be studied. Consideration will be given to strikes, their causes and effects, the closed and open shop, methods of dealing with labor disputes, labor legislation and labor parties. Labor conditions and labor movements since the war will receive adequate attention.

Prerequisite: Economics 3–c. Elective for Juniors and Seniors. 4 credits: 4 recitations. (Given as 4–a prior to 1923–24.)
NOTE: Attention is also called to a parallel course in Mechanical Engineering, M. E. 251–a, dealing with labor problems from the employer's point of view, and given by Dean Crouch.

14–b. Money and Banking. A subject to set forth the principles and functions of money and their importance to society, together with a study of the various banking systems of the world with special emphasis on the Federal Reserve System of the United States.

Prerequisite: Economics 3–c. Elective for Seniors. 3 credits: 3 recitations. (Given as 5–b prior to 1923–24.)

18–c. Marketing. A subject to acquaint the student with the importance and complications of the marketing function.

Prerequisite: Economics 3–c. Elective for Juniors and Seniors. 3 credits: 3 recitations. (Given as 25–c prior to 1923–24.)

Advanced Subjects. Group C

Prerequisites: Senior or Graduate standing. A satisfactory average in 18 or more hours in Economics. Exception: 9 hours required of Technology students.

22–a. Corporations. This subject deals with the evolution and forms of business organizaion. A study of selected types of business corporations will be made; and finally our public policy toward corporations will be traced and considered. Considerable attention will be paid to the Sherman Act, its interpretations and modifications.

3 credits: 3 recitations. (Given as 7–a prior to 1923–24.)

26–b. Transportation. This subject aims to give an historical account of the development of transportation agencies in the United States, including the early stagecoach routes, river and canal transportation, electric lines and railroads, coastal trade and international trade relations. Since railroad transportation is a vital problem in the social, political, and economic development of the United States, major consideration is given to the development of the problem and its post-war status.

3 credits: 3 recitations. (Given as 10–b prior to 1923–24.)

30–c. Principles of Public Finance. A brief survey will be made of the enormous increases in the expenditures of modern governments, together with a survey of the sources of public revenue. Particular attention will be paid to the theory and practice of taxation, recent taxation reforms, war loans, and taxation problems in New Hampshire.

3 credits: 3 recitations. (Given as 6–c prior to 1923–24.)

34–a and 35–b. History of Economic Philosophy. It is the aim of this subject to present a critical account of the development of economic thought in the leading nations of the Western world; to study the economic systems of Greece, Rome, Mediaeval and Modern Europe, including the manorial, guild, mercantile, physiocratic, laissez faire and socialistic systems; and to indicate the important relations of economic philosophy to historical and social environment.

NOTE: 34–a will cover this development from the earliest time to and including David Ricardo. 35–b will cover the period from David Ricardo to the present. 3 credits: 3 recitations. (Given as 26–a and 27–b prior to 1923–24.)

40–a, 41–b, 42–c. Seminar in Current Economic Problems. Elective for Seniors majoring in Economics who have attained a satisfactory average in the department. Credits to be arranged with the head of the department.

43–a, 44–b, 45–c. **Advanced Seminar in Economic Investigation.**

May be offered in connection with other allied departments. 1 credit: 1 conference. Extra credit must be duly authorized.

GRADUATE CREDIT: Any subject in Group C may be claimed for graduate credit if a special study or thesis connected with the subject is presented and a term grade of 85 is earned.

Special Subjects. Group D

205–b. **Traffic Management.** A specialized course in the theory and practice of traffic management.

1 credit: 1 recitation. (Not given in 1924–25.)

206–c. **Traffic Management.** Continuation of 205–b.

1 credit: 1 recitation. Not given in 1924–25.

ACCOUNTING

NOTE: Students who have completed two or more years of bookkeeping in preparatory school will be permitted to register for Intermediate Accounting (No. 115–a, 116–b, 117–c) upon passing an examination covering the material of Elementary Accounting (No. 112–a, 113–b, 114–c).

Schedule the following subjects as Acct. 112–a, 113–b etc.

112–a, 113–b, 114–c. **Elementary Accounting.** A thorough study of the basic principles and theory of accounting. Practice in writing up sets dealing with single proprietorship business, followed by a study of the partnership, and accounting methods as applied to that type of business. The subject is aimed to give the student a thorough grounding in accounting theory and practice.

Elective for Sophomores, Juniors and Seniors, 112–a is prerequisite to 113–b. 113–b is prerequisite to 114–c. 3 credits: 3 recitations.

115–a, 116–b, 117–c. **Intermediate Accounting.** This subject is designed to follow 114–c, continuing with the work in partnership, admission of a new partner, handling of columnar records, etc. A comprehensive study of the corporation, followed by incorporating the partnership and carrying through a corporation set of books based on the voucher system.

Prerequisite: Economics 114–c. 115–a prerequisite to 116–b. 116–b prerequisite to 117–c. Elective for such students as have completed Economics 114–c, or its equivalent. See note above. 3 credits: 3 recitations.

118–a, 119–b, 120–c. Public Accounting and Auditing. A study of the principles of auditing, duties of the public accountant and the legal phases of his work. Extensive practice in solving C. P. A. problems. Discussion of the Federal Income Tax Law and practice in computing returns.

Prerequisite: Economics 117–c. 118–a prerequisite to 119–b. 119–b prerequisite to 120–c. Elective for such students as have completed Economics 117–c, or its equivalent. 3 credits: 3 recitations.

121–a, 122–b, 123–c. Cost Accounting. The relation of cost accounting to general accounting. Study of various cost systems and their application to particular lines of business. Careful analysis of methods of distributing burden and overhead expenses.

Prerequisite: Economics 117–c. 121–a prerequisite to 122–b. 122–b prerequisite to 123–c. Elective for such students as have completed Economics 117–c, or its equivalent. 3 credits: 3 recitations.

SPECIAL COURSE IN ACCOUNTING FOR WOMEN STUDENTS

124–a, 125–b. Household and Institutional Accounting. This subject is designed for students of Home Economics and is, therefore, not as well adapted for students planning to enter the business world as subjects 112–a and following. It presupposes no previous knowledge of bookkeeping; hence the basic elements of accounts are first taken up, followed by their application to the management of households and institutions, and the principles of budget making.

Elective for Liberal Arts Seniors. 4 credits: 3 lectures, 1 laboratory.

EDUCATION AND PSYCHOLOGY

JOHN W. TWENTE, *Professor*
HERBERT F. RUDD, *Associate Professor*
EMMA A. BAIE, *Associate Professor in Home Economics Education*
*HOLLIE L. WHITTEMORE, *Assistant Professor in Agricultural Education*
*WALTER A. PIERCE, *Instructor in Industrial Education*

Major: For students in the College of Liberal Arts, 27 hours including an introduction to the problems of education, history of education, psychology of learning, and genetic psychology.

* Representing the State Department of Education in the administration of the Smith-Hughes Act.

Minor: 27 hours made up from either (a) courses in one college subject represented in the high school program; or (b) courses in one or two of the following departments; economics and accounting, history and political science, sociology, zoölogy and geology.

EDUCATION

The purpose of the subjects in Education is to unite and correlate the forces of the college which contribute to the preparation of educational leaders in teaching and supervision in the secondary schools.

The curriculum is based upon the assumption that teachers should have, first of all, and fundamental to all other preparation, a broad and liberal education; secondly, that they should be masters of the special subject they expect to teach; and, thirdly, that this training should be supplemented by professional subjects designed to give them a knowledge of the minds of the pupils to be taught and the problems to be met, with a thorough course in practice teaching under experienced critic teachers.

The study of the education subjects has marked cultural values and affords that liberal education with respect to educational ideals which every citizen should know. Those who later will be members of school committees, or will participate with other agencies in the solution of specific educational problems should know some of the demands of the modern science of education.

The prospective teacher of agriculture, engineering, home economics or any other subject should, with the advice of the staff members of the department, plan his course as soon as possible.

Smith-Hughes Teacher Training. The State of New Hampshire has accepted the provisions of the Smith-Hughes Act for training teachers of agriculture, home economics, and industrial education. The University of New Hampshire has been designated as the one state institution for the training of teachers in these subjects. Under the same act New Hampshire has accepted federal money for the purpose of paying increased salaries in schools to be known as Smith-Hughes high schools. Students wishing to be prepared to teach in these schools should confer with the head of the Department of Education.

Professional Training for Teachers. It is recommended that prospective teachers plan their courses of study so as to include 18 to 24 hours of Education and Psychology. The majority of states require

professional training before teachers are granted permanent certificates. "College graduates or other students with four years of post-secondary education will be given secondary licenses, provided that their course included fifteen semester hours of college work in Education." New Hampshire State Board of Education Regulation, effective July 1, 1923.

INTRODUCTORY SUBJECTS

12–a. Introduction to Education. This subject places the student in direct contact with general educational problems that he will meet in his teaching experiences. The aim of the subject is realized through a treatment of such problems as the money cost of education; delegating responsibility for carrying on schools; the school building; grouping pupils in classes; curriculum; individual differences; periodicity in the pupil's development; standardization; methods; class-room management; health supervision; the present status of teaching; present inequalities in educational opportunities; the movement toward the nationalization of education. Each problem considered will be definitely related to the welfare of the child as the central objective of all educational procedure. Lectures, assigned readings and discussions. Mr. Twente.

Open to all students except Freshmen. 3 credits: 3 recitations.

13–b. History of Education. A general survey of Greek, Roman and early history; Renaissance periods; intensive study of modern educational movements; evolution of the public school systems in the United States with special attention to the development since the Civil War as well as the growth of present organization and tendencies. Lectures, assigned readings and discussions. Mr. Twente.

Open to all students except Freshmen. 3 credits: 3 recitations.

ADVANCED AND GRADUATE SUBJECTS

14–b. Secondary Education. Evolution of secondary schools, their articulation with elementary schools, colleges, technical institutes, vocations, and the home; teaching staff; curriculum; student organizations; life guidance; aims and values of the various high school subjects; extra curricular activities. An extra section is provided to accommodate

Smith-Hughes students. Lectures, assigned readings and discussions. Mr. Twente.

Prerequisite: Permission of the instructor. Junior subject. 3 credits: 3 recitations.

14–c. **Principles of Education.** Selected biological, psychological, sociological and statistical material will be treated in such way as to give the student not only a survey of the fundamental principles of education, but also a good basis for more intensive courses in education. Educational theory stressing the more important principles involved in the process of education especially in the secondary schools. Lectures, assigned readings and discussions. Mr. Rudd.

Open to all students except Freshmen. 3 credits: 3 recitations.

15–c. **Class-room Management and Methods.** A consideration of the purposes of high school instruction; economy in class-room management; selection and arrangement of subject matter; types of learning involved in high school subjects; the place of practice or drill; the significance of reflective thinking and correct habit formation; the art of questioning; supervised study; the measurement of the results of teaching. An extra section is provided to accommodate Smith-Hughes students. Lectures, assigned readings and discussions. Mr. Twente.

Prerequisite: Permission of instructor. Junior subject. 3 credits: 3 recitations.

16–a–b–c. **Supervised Teaching.** The student participates in the conduct of class exercises and in the control of the class room, at first chiefly as an observer, but gradually entering into teacher responsibilities until complete charge of the class work is secured. Frequent conferences and discussions. The work will be under the direction of the head of the Department of Education.

Prerequisites: Permission of head of department. 2 to 15 credits.

17–b. **High School Administration.** The following topics will be covered: the legal status of the secondary high school; high school population; the problem of reorganization; the program of studies; vocational education and guidance in the high school; grading, measurement, classification, excess credit for quality; enrolling the student; social organization; community relationships; the high school library,

staff, buildings, costs and efficiency in general. Lectures, assigned readings and discussions. Mr. Twente.

Open especially to both men and women who wish to become principals or headmasters. Admission by consent of the instructor. 3 credits: 3 recitations.

20–a. History and Principles of Vocational Education. The historical development of vocational education. The psychological and sociological bases of vocational education; problems, institutions, methods, contemporary movements and legislation; applications of research in relating vocations and education. Lectures, assigned readings and discussions. Mr. Twente.

Required of Seniors in Home Economics, Agricultural and Industrial Teacher Training courses. Senior subject. 3 credits: 3 recitations.

27–a–b–c. School Hygiene. Same in content as 28–b. To be taken in absentia by Smith-Hughes Teacher Training students while doing supervised teaching. Assigned readings, problems and examinations. Mr. Twente.

Required of Seniors in Home Economics, Agriculture and Industrial Teacher Training courses. Not open to other students. 3 credits.

35–b. Agriculture in the High School. This subject deals with special methods of teaching agriculture in the high school, with emphasis upon New Hampshire requirements as set up by the State Board of Education. The chief topics considered are: planning and equipping of classrooms and shops, cataloging of bulletins for the library, selection of reference books, use and construction of charts and illustrative materials, the curriculum, the yearly plan of work; the presentation of materials of instruction through recitation, laboratory, field work and excursions; teaching through the home project, and supervised study. Mr. Whittemore.

Required of Seniors taking the Teacher Training course, and open only to these students. 3 credits: 2 lectures; 1 laboratory.

36–c. Supervised Teaching in Agriculture. Each senior in the Teacher Training course will spend at least ten weeks as an apprentice teacher in some agricultural high school selected by the State Commissioner of Education and the head of the Department of Education at the University of New Hampshire. This work will be under the regular

teacher of Agriculture in the high school, and will be supervised by the instructor in Agricultural Education at the University of New Hampshire. Mr. Whittemore.

Required of Seniors taking the Teacher Training course, and open only to these students. 15 credits.

TRADE AND INDUSTRIAL EDUCATION

40–b. Special Methods in Industrial Education. Special methods of class management, instruction, aims, educational values, etc., as occur in Smith-Hughes Industrial classes will be considered. Mr. Pierce.

Required of students taking the Smith-Hughes Industrial Teacher Training course, and not open to other students. 3 credits: 3 recitations.

41–c. Supervised Teaching in Industrial Education. During the third term of the senior year Industrial Teacher Training students will teach in some industrial school in the state, to be chosen by the State Commissioner of Education and the head of the Department of Education at the University of New Hampshire. At least nine weeks will be devoted to this and no work will be carried at the college during this term. Mr. Pierce.

Required of students taking the Smith-Hughes Industrial Teacher Training course, and not open to other students. 11 to 16 credits.

50–a. School Administration. A subject in the fundamental principles of school administration intended primarily for superintendents, for those who are preparing to become superintendents or supervisors, or directors of educational research. Topics: Principles of scientific management applied to school administration; organization of departments of education; school records and reports; problems of school finance including budget making; the use of score cards in judging school buildings; school building plans; the organization of special schools; the organization of special phases of school work as health education, compulsory attendance; the organization of the single school; the training of school superintendents and supervisors; the uses of school surveys; the publicity work of a school system. References, reports on special topics and discussions. Mr. Twente.

Open especially to men and women with teaching experience, or to those who have had several education courses and wish to prepare themselves for supervisory positions. Admission by consent of the instructor. 3 credits: 3 recitations.

52–a, 53–b, 54–c. Educational Problems. A research course pertaining to problems of instruction, administration, and supervision. Research problems may be carried over two or more terms.

Open to Seniors and graduate students who have majored in Education and Psychology. Experienced teachers who are fitted for this work may be admitted by special permission. Credit and hours to be arranged.

SPECIAL METHODS SUBJECTS

The Teaching of Composition in Secondary Schools (English 83–b, 84–c).

The Teaching of History in Secondary Schools (History 120–a).

The Teaching of Home Economics in Secondary Schools (H. E. 101–a, 102–b).

The Teaching of Manual Arts in Secondary Schools (Shop 8–a or 8–b).

The Teaching of Mathematics in Secondary Schools (Math. 13–a).

The Teaching of Modern Languages in Secondary Schools (Modern Lan. 13–a, 14–b, 15–c).

The Teaching of Physical Education (Phys. Ed. 19-a, 20-b, 21-c.)

The Teaching of Physics (Phy. 25–c).

The Teaching of Social Sciences (Sociology 31–b and Economics 44–b).

The Teaching of Zoölogy in Secondary Schools (Zoölogy 19–a, 20–b, 21–c).

PSYCHOLOGY

Schedule the following subjects as Psy. 1–a, 2–b, etc.

The importance which Psychology is assuming in the eyes of the practical and forward looking men is manifest by the application made of it to every important phase of human activity. Furthermore, no one nowadays can lay claim to a liberal education who has not at least an elementary knowledge of modern psychology. This is so widely recognized that even some of the large and better high schools have added psychology to their curriculum. Psychology as a science has been applied to personnel work in the army, industrial establishments, vocational guidance, criminal courts, juvenile courts, psychopathic institutions, advertising, selling, employment, education, welfare work, neurology, subnormal children, college entrance examination, etc. The courses offered in this subject aim to put this science on a par with the

physical and biological sciences and to give a general foundation for dealing with the problems suggested above. The courses in educational psychology consider topics which have a vital importance to the teacher and learning processes of the student. The applications of the laws of psychology to teaching will be stressed in a practical way.

INTRODUCTORY SUBJECTS

1–a, 2–b, 3–c. Introduction to Psychology. This course includes a study of the principles of Psychology and will be accompanied by demonstrations and class experiments. The following topics will be considered: Motivation factors in behavior; the nervous system; modification of innate disposition in learning; learning, its neural bases and relations to consciousness; attention and its relations to activity; the sense organs, sensations, and discriminative responses; the development of local signs and perceptual systems; ideation, memory, conception, reasoning, instincts and emotions, and their relations to self control or will; certain important abnormal phenomena. It is recommended that a course in science, preferably zoölogy, either precede or accompany this course in Psychology. Lectures, assigned reading and discussions. Mr. Rudd.

1–a and 2–b Required of Institutional Juniors. Open to all students except Freshmen. 3 credits: 3 recitations.

ADVANCED AND GRADUATE SUBJECTS

4–a. Genetic Psychology. An intensive study of the development of the mind from childhood to adolescence. A careful interpretation of the development of the individual's mental processes with a view to proper methods of education is given special attention. Lectures, assigned readings and discussions. Mr. Rudd. (Given as 5-b in 1923-24).

Prerequisite: Permission of instructor. Open to Juniors and Seniors. 3 credits: 3 recitations.

5-b. Psychology of Learning. This course considers the nature of learning and retention, and their neural bases; learning curves, their uses and significance; forms of learning; motives to learning; factors and conditions affecting the rate and permanency of learning; problems relating to learning capacity; transfer of training, and means of effecting beneficial transfers; applications to practical school work, and to the

training of persons requiring special treatment. Lectures, assigned readings and discussions. Mr. Rudd. (Given as 4-a in 1923-24).

Open to Juniors 3 credits: 3 recitations.

6–c. Measurements and Statistics. This course deals with the principles, methods and application of various types of scales for measuring general mental ability and educational achievement. It includes a brief survey of statistical methods essential to an understanding of testing. Sufficient practice in giving tests is provided to give the student an appreciation of psychological methods of procedure. Mr. Twente.

Prerequisites: Permission of instructor. 3 credits: 3 recitations.

8–a. Applied Psychology in Vocational Education. The purpose of this course is to assist the student in obtaining a more accurate and complete understanding of human nature. The elementary facts, laws and principles of psychology are considered with specific applications to professional and vocational education problems and to vocational guidance. Lectures, assigned readings and discussions. Mr. Rudd.

Required of Juniors in Home Economics, Agricultural and Industrial Teacher Training courses. Not open to other students. 3 credits: 3 recitations.

9–b. Psychology of Adolescence. The purpose of this course is to give high school principals and teachers a deeper, fuller appreciation of the habitual and impulsive life of boys and girls in their teens. Topics: Preadolescence; the physical and mental traits of high school pupils; individual differences among high school pupils and their implications; motor training, gymnastics, athletics, play, sport, and games as they function in the education of the youth; growth of social ideas; adaptation of school work to intellectual development; moral and religious training. Lectures, assigned readings and discussions. Mr. Rudd.

Required of Seniors in the Home Economics, Industrial and Agricultural Teacher Training courses. 3 credits: 3 recitations.

10–a. Applied Psychology in Commerce and Industry. The purpose of this course is to assist the student in obtaining a more accurate and complete understanding of human nature. The elementary facts, laws and principles of psychology are considered with specific applications

to commercial and industrial problems and to vocational guidance. Lectures, assigned readings and discussions. Mr. Rudd.

Required of Juniors in the Industrial Course. Open to a limited number of Juniors and Seniors in other courses. 3 credits: 3 recitations.

30–a, 31–b, 32–c. Special Problems in Psychology. In this course an opportunity is afforded for intensive experimental and statistical work in Psychology and Educational Psychology. Special problems may be carried over two or more terms.

Open to Seniors and graduate students who have 15 or more hours in Psychology. Students admitted by special permission. Credit and hours to be arranged.

PHILOSOPHY

The primary aim of the subjects offered in Philosophy is to give the student a point of view and the method for considering the fundamental problems of human life. These subjects endeavor to cultivate an attitude of thorough investigation, careful analysis, judicial evaluation, and an appreciative interpretation in dealing with many important and confusing problems of life. Philosophy lies nearer today than ever before to the various sciences on the one hand, and to the demands of practical life on the other.

1–a. Introduction to Philosophy—Historical Survey. This course deals with the more important attempts to find a rational explanation of the world. Each system of thought is studied in its relation to the systems which precede and follow it, as well as to the economic and social situation in which it was produced. Lectures, assigned readings, and discussions. Mr. Rudd.

Open to all students except Freshmen. 3 credits: 3 recitations.

5–b. Introduction to Philosophy—Systematic Organization. It is the purpose of this course to give a comprehensive point of view and an effective method for considering the meaning of the world and of human life. Many of our fundamental assumptions will be analyzed, criticized and systematized. Personal and social aims and objectives, standards of conduct, criteria of progress, methods of social organization, and problems of social reform will be among the topics discussed. Lectures, assigned readings,and discussions. Mr. Rudd.

Open to all students except Freshmen. 3 credits: 3 recitations.

8–c. Ethics. This course is a survey of the evolution of morality; the critical evaluation of ethical standards; and the motives for worthy conduct in the modern world. Mr. Rudd.

Open to all students except Freshmen. 3 credits: 3 recitations.

ELECTRICAL ENGINEERING

LEON W. HITCHCOCK, *Professor*
ARTHUR A. BRAINERD, *Instructor*
THOMAS J. MAITLAND, *Instructor*

1–a, 2–b, 3–c. Dynamo Electric Machinery. This subject includes a general study of electric and magnetic quantities, direct current circuits, magnetic circuits, direct current generators and motors, primary and secondary cells and batteries, electrolysis, electroplating, electrotyping, elements of photometry and electric illumination, electrical measuring instruments, inductance, capacity, alternating current circuits, the use of complex quantities, power factor, wave form, alternators and armature windings. A large number of problems are solved. One exercise a week is devoted to laboratory experiments illustrating the practical application of the theory. Mr. Hitchcock, Mr. Brainerd, Mr. Maitland.

Prerequisites: Physics 8–c and Mathematics 9–c. Required of Juniors in Electrical Engineering. 4 credits: 3 recitations; 1 laboratory.

4–a. Wire and Radio Communication. A study of the acoustic and electrical principles of telephony; transmitting and receiving apparatus; magneto and common-battery switchboards and accessories; selective party-line systems; intercommunicating systems; overhead and underground construction; phantom, simplex, and composite circuits; transpositions, etc.; the principles of telegraphy, sounders, repeaters, etc.; radio communication, including the properties of oscillating circuits, antenna systems, radiation, damped and undamped wave radio telegraphy, radio telephony and special applications of radio circuits; electric signalling for purposes of alarm, etc. Mr. Maitland.

Prerequisites: Electrical Engineering 3–c, 17–c, 27–c, or 102–c. Elective for Seniors in Engineering and Industrial courses. 3 credits: 3 recitations.

5–c. Application of Electricity to Agriculture. Arranged for and adapted to students in agriculture. The subject consists of a general

study of electric circuits; generators, motors and storage batteries, their care and operation; simple problems in transmission; methods of wiring for electric light and power including a study of the National Electrical Code Rules; electric bell wiring and signalling apparatus; the telephone, the general principles upon which it operates, and the different systems of installation; etc. Mr. Hitchcock.

Elective for Seniors in Agriculture. 4 credits: 3 recitations; 1 laboratory.

7–a, 8–b. **Electrical Engineering Practice.** This subject includes a detailed study of alternators, transformers, induction motors, regulators, synchronous motors, converters and rectifiers. Mr. Maitland, Mr. Hitchcock.

Prerequisite: Electrical Engineering 3–c. Required of Seniors in Electrical Engineering. 3 credits: 3 recitations.

9–c. **Transmission and Distribution Systems.** A study of the factors affecting the design, construction and operation of transmission lines and distribution circuits. This includes the electrical, mechanical and economic calculations involved; lightning protection methods and apparatus; etc. A study of existing installations will be made. Mr. Hitchcock.

Prerequisite: Electrical Engineering 8–b. Required of Seniors in Electrical Engineering. 3 credits: 3 recitations.

10–b. **Electric Railways.** The practicability of construction from an economic standpoint; determination of the size, type, and seating capacity of cars; track location and construction; train schedules; methods of control; train resistance; speed-time and current-time curves; selection of motors; the feeder system; electrolysis; power station and sub-station location; storage batteries; signal systems; electric track switches; etc. Illustrated by problems. Mr. Hitchcock.

Elective for Seniors in Electrical Engineering. 3 credits. 3 recitations.

11–a, 12–b, 13–c. **Electrical Laboratory.** This subject includes the operation and testing of direct and alternating current motors and generators, transformers, rotary converters, rectifiers, etc. A written report on each experiment or test is required. Mr. Maitland.

Prerequisite: Electrical Engineering 3–c. Required of Seniors in Electrical Engineering. 3 credits: 2 laboratories.

14–c. Thesis. An investigation conducted along lines in which the student is interested. A deposit of fifteen dollars to cover damage to instruments, apparatus, etc., is required; the unexpended balance is refunded at the close of the college year. Apparatus constructed as a part of a thesis shall remain the property of the department. Credits in this subject may be arranged to include credits in other required subjects for this term, depending upon the nature of the thesis. Mr. Hitchcock.

Permission to elect subject is optional with head of department. Open only to Seniors in Electrical Engineering. 1 to 8 credits.

15–a, 16–b, 17–c. Industrial Electricity. This subject consists of a study of the electric circuit; the magnetic circuit; direct current generators and motors; elementary electrochemistry, covering storage batteries, refining of metals, electrotyping, and electroplating; photometry; electrical measuring instruments; inductance; capacity; the alternating current circuit; alternating current generators, motors, starting devices, controllers, transformers, converters and rectifiers. Mr. Brainerd, Mr. Hitchcock, Mr. Maitland.

Required of Seniors in Chemical Engineering. 3 credits: 2 recitations; 1 laboratory.

18–b. Design of Electrical Machinery. A study of the design of the more important electrical machines, including the calculation of the dimensions of the machine, both electrical and mechanical, and the predetermination of its performance from the dimensions. Mr. Hitchcock.

Prerequisite: Electrical Engineering 8–b. Required of Seniors in Electrical Engineering. 3 credits: 1 recitation; 2 laboratories.

19–b. Illumination Engineering. A study of the National Electrical Code Rules for electrical wiring and apparatus; arc and incandescent lamps; the principles of photometry and illumination; shades and reflectors; residence, office, store and factory lighting; street lighting; flood lighting; electric signs; illumination calculations; rates; etc. Mr. Brainerd.

Prerequisite: Electrical Engineering 3–c. Elective for Seniors in Electrical Engineering. 2 credits: 2 recitations.

21–c. **Electrical Problems.** The solution of a large number of problems involving both direct current and alternating current circuits and machinery. Mr. Hitchcock.

Prerequisite: Electrical Engineering 8–b. Elective for Seniors in Electrical Engineering. 2 credits: 2 recitations.

23–c. **Abstracts.** Reports by students on assigned articles of engineering interest. Mr. Hitchcock.

Prerequisite: Electrical Engineering 8–b. Elective for Seniors in Electrical Engineering. 1 credit: 1 recitation.

25–a, 26–b, 27–c. **Electrical Machinery.** A study of the electric circuit; the magnetic circuit; direct current generators and motors; primary cells; storage batteries; illumination; electrical measuring instruments; inductance; capacity; the alternating current circuit; alternating current generators, motors, starting devices, controllers, transformers, converters and rectifiers. Mr. Maitland, Mr. Brainerd, Mr. Hitchcock.

Required of Juniors in Mechanical Engineering and of Juniors who entered the Industrial Course in 1923. 4 credits: 3 recitations; 1 laboratory.

100–a, 101–b, 102–c. **Elements of Electricity.** A study is made of the following subjects: the calculation of wire sizes for circuits; the wiring of buildings for lighting, power, and other domestic purposes; the requirements of the National Board of Fire Underwriters in connection with electrical installations; direct current dynamos and motors; batteries; signalling apparatus; bells; gas ignition; electrical measuring instruments; inductance and capacity and their effects in alternating current circuits; impedance; power and power factor; current and voltage relations in series and parallel circuits; single phase, two phase, and three phase systems; etc. (101–b and 102–c will not be offered after 1924–25.) Mr. Brainerd, Mr. Maitland.

Required of Juniors in the Industrial Course. 100–a is required of Seniors in Architectural Construction. 3 credits: 2 recitations; 1 laboratory.

103–a. **Electrical Machinery.** The subjects 103–a and 104–b include a study of single phase and polyphase alternators; the parallel operation of alternators; synchronous motors; induction motors; starters, compensators, and controllers for alternating current motors; transformers

for single phase and polyphase circuits; converters and rectifiers. (Not offered after 1925–26.) Mr. Hitchcock.

Prerequisite: Electrical Engineering 102–c. Required of Seniors in the Industrial Course. 3 credits: 3 recitations. (Not offered after 1925–26.)

104–b. Electrical Machinery. Continuation of 103–a. (Not offered after 1925–26.) Mr. Brainerd.

Prerequisite: Electrical Engineering 103–a. Required of Seniors in the Industrial Course. 2 credits: 2 recitations. (Not offered after 1925–26.)

105–a, 106–b, 107–c. Electrical Laboratory. The study, operation and test of alternating current generators, synchronous motors, induction motors, transformers, converters, etc. (Not offered after 1925–26.) Mr. Hitchcock, Mr. Brainerd.

Prerequisite: Electrical Engineering 102–c. Required of Seniors in the Industrial Course. 2 credits: 2 laboratories. (Not offered after 1925–26.)

ENGLISH

ALFRED E. RICHARDS, *Professor*
CLARENCE W. SCOTT, *Professor*
HAROLD H. SCUDDER, *Associate Professor*
LUCINDA P. SMITH, *Instructor*
WILLIAM G. HENNESSY, *Instructor*
RUTH E. BIXBY, *Instructor*
IRVING L. CHURCHILL, *Instructor*
LILLIAN BYRNES, *Instructor*

Major: 27 hours in English, inclusive of at least 6 hours of advanced composition, 3 hours of public speaking, 3 hours of Shakespeare, and exclusive of English, 1.5–a, 2.5–b, 3.5–c.

Minor: 27 hours which shall include a study of any two foreign languages combined with any related subject or subjects in Groups II and III. The decisions as to the integral relation of such subjects shall rest with the head of the English Department. Not less than 9 hours must be taken in any given subject.

COMPOSITION

1–a. First Year English. The chief purpose of this subject is to give the student drill in the mechanics and conventions of English com-

position. Stress is laid upon expository writing. At the same time the elementary principles of grammar, punctuation, paragraphing, etc., are reviewed. Mr. Richards, Miss Bixby, Mr. Churchill.

Required of Agricultural and Technology Freshmen. 3 credits: 3 recitations.

2–b. **First Year English.** A continuation of 1–a.

Prerequisite: English 1–a. Required of Agricultural and Technology Freshmen. 3 credits: 3 recitations.

3–c. **First Year English.** A continuation of 2–b.

Prerequisite: English 2–b. Required of Agricultural and Technology Freshmen. 3 credits: 3 recitations.

1.5–a. **English Reading.** This subject has for its chief aim the correlation of Freshman English with the required subjects in the other departments of the College of Liberal Arts. It consists of extensive reading (at least five books or their equivalent) in the fields of biography, fiction and history. Class drill in the elements of English grammar and composition is based upon the subject matter of the books read. Mr. Richards, Mr. Scudder, Mr. Hennessy, Mrs. Smith, Miss Bixby, Mr. Churchill, Miss Byrnes.

Required of Liberal Arts Freshmen. 3 credits: 3 recitations.

2.5–b. **English Reading.** A continuation of 1.5–a.

Required of Liberal Arts Freshmen. 3 credits: 3 recitations.

3.5–c. **English Reading.** A continuation of English 2.5–b.

Required of Liberal Arts Freshmen. 3 credits: 3 recitations.

4–a. **Second Year English.** This subject is a more advanced study, of the principles of good writing. The characteristics of exposition, description, and narration are studied. There will be frequent theme writing illustrating these forms of composition, and the work will be supplemented by a program of outside reading. Mr. Richards, Mr. Scudder, Mrs. Smith, Miss Bixby, Mr. Churchill.

Required of Liberal Arts Sophomores. 3 credits: 3 recitations. Prerequisite, English 1–a, or 1.5–a.

5–b. **Second Year English.** A continuation of English 4–a.

Required of Liberal Arts Sophomores. Prerequisite: English 4–a. 3 credits: 3 recitations.

6–c. Second Year English. A continuation of English 5–b.

Required of Liberal Arts Sophomores. Prerequisite: English 5–b. 3 credits: 3 recitations.

9–b. Advanced Composition. The purpose of this subject is to intensify the training offered in English 4–a and 45–b, and to supplement that offered in English 61–a, and 62–b. Mr. Richards, Mr. Scudder. (Given as 30–c prior to 1923–24.)

Required of Seniors in Technology, in the Architectural, Industrial and Teacher Training Courses. Prerequisite: English 3–c or 3.5–c. Elective for Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

15–a, –b, –c. Practice Work in Composition. This subject is required of any student, other than a Senior, whose work has been reported by instructors as being faulty in English, and has been so judged by a committee consisting of the deans of the divisions and the head of the English Department. This subject does not give credit toward graduation. (Given as 50–a, –b, –c prior to 1923–24.)

LITERATURE AND LANGUAGE

17–b. Introduction to English Literature. A general survey of English literature from its beginnings to the eighteenth century. To one who intends to teach English it is of fundamental importance. Lectures and recitations. Mr. Richards, Mr. Hennessy. (Given as 5–b prior to 1923–24.)

Elective for all classes. 3 credits: 3 recitations.

18–c. Introduction to English Literature. A continuation of 17–b. Mr. Scudder, Mrs. Smith. (Given as 26–c prior to 1923–24.)

Elective for all classes. 3 credits: 3 recitations.

21–c. History of the English Drama. A survey of the English drama from its beginnings to the closing of the theaters. Constant reading of the plays, with written criticisms and reports, is required. Mr. Scudder. (Given as 8–c prior to 1923–24.)

Elective for Sophomores, Juniors and Seniors. 3 credits: 3 lectures.

22–b. The English Novel in the Nineteenth Century. A study of the novel from Jane Austen to Thomas Hardy. There will be lectures,

recitations, and constant outside reading. Mr. Scudder. (Given as 9–b prior to 1923–24.)

English 22–b and 39–b will be given in alternate years (39–b in 1924–25). Elective for Juniors and Seniors. 3 credits: 3 recitations.

23–a, 24–b, 25–c. American Literature. Lectures and extensive outside reading. Mr. Scott. (Given as 10–a, 11–b, 12–c prior to 1923–24.)

Elective for Juniors and Seniors. 3 credits: 3 recitations.

26–a. English Poetry. A study of English poetry written between 1798 and 1900. Mr. Richards. (Given as 13–a prior to 1923–24.)

English 26–a and 41–a will be given in alternate years (26–a in 1924–25). Elective for Juniors and Seniors. 3 credits: 3 recitations.

28–b. Shakespeare's Plays. A study of the principal plays of Shakespeare. Recitations and occasional dramatic representations of famous scenes. A large amount of reading required. Mr. Richards.

Elective for Juniors and Seniors. 3 credits: 3 recitations. (Given as 14–b prior to 1923–24.)

31–b. Comparative Study of the Drama. Reading of selected dramas from Greek, Latin, Spanish, French, Italian, German and Danish literature; from Aeschylus to Ibsen. Constant reading, written criticisms and reports required. Miss Bixby. (Given as 15–b prior to 1923–24.)

English 31–b and 45–b will be given in alternate years (45–b in 1924–25.) Elective for Juniors and Seniors. 3 credits: 3 recitations.

32–b. The Bible as Literature. A study of various literary types found in the Bible. Emphasis is placed especially upon the Old Testament in order to avoid the confusion of doctrines which enters into the New Testament. Biblical history is read merely as a background for the literature of the Bible. Miss Bixby.

Elective for Juniors and Seniors. 3 credits: 3 recitations.

36–c. The Essay. A study of the essay as represented in the writings of Lamb, Newman, Ruskin, Hazlitt and Harrison, and as employed by the leaders in the literary and scientific world of today. Mr. Richards. (Given as 20–c prior to 1923–24.)

English 36–c and 37–c will be given in alternate years (37-c in 1924–25.) Elective for Sophomores, Juniors and Seniors. 3 credits: 3 lectures.

37–c. John Ruskin. The reading of selected essays by Ruskin which bear upon the literary, artistic and social problems of the present day. Lectures and recitations. Mr. Richards. (Given as 21–c prior to 1923–24.)

English 36–c and 37–c will be given in alternate years (37–c in 1924–25). Elective for Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

39–b. The American Novel. A survey of the novel in America from Charles Brockden Brown to the present time. There will be lectures and constant outside reading. Mr. Scudder. (Given as 22–b prior to 1923–24.)

English 22–b and 39–b will be given in alternate years (39–b in 1924–25). Elective for Sophomores, Juniors and Seniors. 3 credits: 3 lectures.

41–a. Modern Poetry. A study of American poetry written since 1900. Mr. Richards. (Given as 24–a prior to 1923–24.)

English 26–a and 41–a will be given in alternate years (26–a in 1924–25). Elective for Juniors and Seniors. 3 credits: 3 recitations.

45–b. Literary Types. This subject is closely related to 9–b. It includes a study of letter writing in its various forms, of biography, and of special types of magazine articles. Mr. Richards, Mrs. Smith.

Prerequisite: English 3.5–c. Elective for Sophomores and Juniors. 3 credits: 3 recitations. (Given as 25–b prior to 1923–24).

48–b. Contemporary Drama. The drama of Europe, England and Ireland, from Ibsen to Shaw, inclusive. The subject will be organized around the artistic motifs and social problems used as themes. American drama will be touched upon comparatively, but not studied as a unit. Lectures, oral reports, group discussions, and a term paper required of each student. Miss Bixby. (Given as 29–b prior to 1923–24.)

English 31–b and 48–b will be given in alternate years (48–b in 1923–24).

ORAL ENGLISH

60–c. Public Speaking. Training in the proper use of the voice, and instruction in the orderly arrangement and effective oral presentation of reports bearing upon the student's practical work, will be em-

phasized. Each student will be required to prepare and deliver at least one formal public speech. Mr. Hennessy.

Elective for Juniors and Seniors. 3 credits: 3 recitations.

61–a. Argumentation and Debating. A study of the theory and practice of argumentation. The work consists mainly in assembling material for and briefing arguments. A weekly conference is required of each student. Recitations, conferences and class room debate.

Prerequisite: English 3–c or 3.5–c. Elective for Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

62–b. Seminar in Debating. This subject deals with the training of teams for intercollegiate debate upon questions of national and international interest. Only qualified students chosen in preliminary trial contests will be eligible. Credit not exceeding three term hours to be arranged. Mr. Hennessy.

Prerequisite: English 61–a. Elective for Juniors and Seniors.

69–c. Dramatic Interpretation. This subject consists of intensive analysis of a single famous play with constant practice in stage technique and the dramatic interpretation of character. Recitations, outside reading, memory work. Mr. Hennessy. (Given as 28–c prior to 1923–24.)

Elective for Liberal Arts Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

JOURNALISM

73–a. Expository Writing. This subject deals with the principles of composition involved in the writing and in the presenting of bulletins, reports, and papers of scientific and popular interest. Mr. Richards, Mrs. Smith.

Prerequisite: English 3–c. Required of all Technology Seniors and of all Agricultural Seniors except those in the Teacher Training course.

76–a. Writing for Publication. A practical study of the preparation of articles for the newspapers and magazines. It is for all whose vocation will demand frequent writing for publication, and a preparation in part for those who intend to take up newspaper work after graduation. It does not cover the entire field of journalism, but the student will be

instructed in the duties of a reporter and be given constant practice in writing news stories. Mr. Scudder. (Given as 6–a prior to 1923–24.)

Elective for those who have attained a grade of 75 or higher in English 3–c or 3.5–c. 3 credits: 3 recitations.

ADVANCED AND GRADUATE COURSES

83–b, 84–c. The Teaching of High School English. This subject is especially designed for those who major in English. It offers training in the teaching of oral and written composition, poetry, prose, fiction, the essay, drama and oration. Attention is given to outside reading, the school paper, dramatics, and other aids to the teaching of English. Mrs. Smith.

Prerequisite: English 6–c and Education 15–c. Elective for Seniors. 3 credits: 3 recitations.

86–b, 87–c. The English Language. This subject deals with the history and development of the English language from Old English to that of today. Its purpose is to give the advanced student a knowledge of Old and Middle English grammar and syntax, and an insight into early English literature, by means of lectures and assigned reading. Open only to Seniors and graduates majoring in English. Mr. Richards.

89–b. Chaucer. Selections from Chaucer's works, and lectures upon the life and times of the poet. Lectures and recitations. Mr. Richards.

Prerequisites: English 6–c and 17–b. Elective for Seniors. 3 credits: 3 recitations.

ENTOMOLOGY

WALTER C. O'KANE, *Professor*
PHILIP R. LOWRY, *Assistant Professor*

Major: 27 hours, exclusive of Entomology 1–a from courses offered in the department and from additional related courses approved by the departmental head.

Minors: 27 hours in Botany, Zoölogy, Chemistry, Agricultural Chemistry, Bacteriology and Agricultural Subjects provided not less than 9 hours are elected in any one subject.

1–a. Principles of Economic Entomology. The relation of the structure and classification of insects to methods of insect control. The

preparation and application of insecticides. Spray machinery and appliances. Mr. O'Kane and Mr. Lowry.

Required of Sophomores in Agriculture. Elective for Sophomores, Juniors and Seniors in other courses. 4 credits: 3 recitations; 1 laboratory.

2–a. **Insects of Orchard and Garden.** The application of methods of insect control to typical injurious species. Studies in the life histories and habits of important insect pests of orchard, garden and certain field crops. Adapted especially for students in Horticulture and in General Agriculture. Mr. Lowry.

Prerequisite: Entomology 1–a. Required of Juniors in Horticulture. Elective for other Juniors and Seniors. 3 credits: 2 lectures; 1 laboratory.

3–b. **Insects of Domestic Animals.** The insect enemies of domestic livestock; their life histories, habits and means of control. Adapted especially for students in Animal Husbandry. Mr. Lowry.

Prerequisite: Entomology 1–a. Required of Seniors in Animal Husbandry. 3 credits: 2 lectures; 1 laboratory.

4–c. **Household Insects. Medical Entomology.** The life histories, habits and means of control of insects of the household and of stored products. The relation of insects to disease. Adapted especially for students in Home Economics. Mr. O'Kane and Mr. Lowry.

Required of Seniors in Institutional Management. Elective for Sophomores, Juniors and Seniors. 3 credits: 2 lectures; 1 laboratory.

5–a, 6–b, 7–c. **Advanced Economic Entomology.** Detailed studies of problems involved in applied entomology. The literature of economic entomology. Investigational methods. Practice in arranging projects. Original investigations in the life history and habits of one or more injurious species. Adapted for advanced students. Mr. O'Kane.

Elective for Juniors and Seniors. Open to students only by permission of head of department. Credit and hours to be arranged.

8–a, 9–b, 10–c. **Advanced Economic Entomology.** Continuation of Entomology 5–a, 6–b, 7–c, for students who are specializing in the subject. Mr. O'Kane.

Credits and hours to be arranged.

13–c. Forest Insects. Studies in the life histories and habits of the more destructive forest insects and the means of their control. Especially adapted for students in forestry. Mr. Lowry.

Prerequisite: Entomology 1–a. Required of Seniors in Forestry. Elective for others. 3 credits: 2 lectures; 1 laboratory. (Given as 8–c prior to 1922–23.)

FORESTRY

KARL W. WOODWARD, *Professor*
CLARK I. STEVENS, *Assistant Professor*

1–c. Principles of Forestry. This subject is intended to meet the needs of students of agriculture who desire an appreciation of the possibilities of the farm woodlot, and of others who wish to obtain a general knowledge of the principles of forestry. The value of forests, their protection, their utilization, their improvement and regeneration, are discussed with special reference to New Hampshire conditions. Mr. Woodward and Mr. Stevens.

Required of all Freshmen in Agriculture. 4 credits: 3 lectures; 1 laboratory.

2–a. Dendrology. In this subject are considered the characteristics of our native tree species, and the identification of trees in the field and from specimens. Mr. Stevens.

Required of Sophomores in Forestry. 3 credits: 2 recitations; 1 laboratory.

2.5–b. Wood Technology. A study of the uses and grades of lumber, together with the identification of the commercially important woods. Mr. Stevens.

Required of Sophomores in Forestry. 3 credits: 2 recitations; 1 laboratory.

3–a, 4–b, 5–c. Silviculture. The growing of timber crops, including the laws of forest growth, the improvement of immature stands, and forest regeneration both natural and artificial. Lectures and recitations, supplemented by field practice. Mr. Woodward.

Required of Sophomores in Forestry. 3 credits: 2 lectures; 1 laboratory.

6–b, 6.5–c. Forest Mensuration. Principles and methods of scaling logs and cordwood and estimating lumber; also a study of the diameter,

height, and volume growth and yield of the commercial tree species found in New Hampshire. Mr. Stevens.

Required of Juniors in Forestry. 3 credits: 2 lectures; 1 laboratory.

7–a, 8–b, 8.5–c. Forest Management. The management of woodlots and large forest tracts for the purpose of gaining the largest immediate and future returns; and the preparation of working plans to coördinate the lumbering, protection, improvement, and regeneration of forests so as to make them yield the highest net returns. Mr. Woodward and Mr. Stevens.

Prerequisites: Forestry 2–a, 5–c and 6.5–c. Required of Seniors in Forestry. 3 credits: 1 lecture; 2 laboratories.

10–a, 11–b, 12–c. Advanced Forestry. Thesis course; work to be arranged according to the needs of individual students. Mr. Woodward.

Prerequisites: Forestry 2–a, 5–c, and 6.5–c. Required of Seniors in Forestry. 3 credits: 3 recitations.

13–b. Forest Utilization. A study of the methods and costs of logging, sawmilling, and marketing, with special reference to the portable sawmill type of operation. Mr. Stevens.

Required of Juniors in Forestry. 3 credits: 2 recitations; 1 laboratory.

14–b, 14.5–c. Practice of Forestry. The history of forestry; its development and present status in different countries; the work of the federal government and its management of the national forests; state forest policies; the lumber industry in the United States. Lectures and special readings. Mr. Woodward.

Required of Seniors in Forestry. 3 credits: 3 recitations.

15–a. Farm Woodlot Problems. A detailed study of the local forest problems. Aimed to prepare those who are planning to settle in a definite locality to become expert in timber estimating and valuation, and artificial and natural regeneration in that locality. Individual conferences and reports. Mr. Stevens.

Prerequisites: Forestry 1–c. 3 credits: 1 recitation; 2 laboratories.

21–a. Forest Engineering. Plane and topographic surveying applied to forestry; the location of logging roads and railroads; the con-

struction of trails, bridges, telephone lines, fire towers, etc. Mr. Stevens.

Prerequisites: Mathematics 19–a and 20–c. Required of Juniors in Forestry. 3 credits: 1 recitation; 2 laboratories.

GEOLOGY

C. Floyd Jackson, *Professor*
Herbert M. Emery, *Instructor*

1–b. Elementary Geology. A general introductory course. Some of the topics discussed are: general features of the earth; the earth in space, its origin and relation to other heavenly bodies; igneous, sedimentary and metamorphic rocks; geologic structure, the geologic evolution of continents and ocean basins, the great periods of geologic history, with special reference to the development and evolution idea as exemplified in geological science by the origin of the earth and the appearance, development, and extinction of various organic forms. Mr. Emery.

Required of Sophomores, in Agriculture. Elective for other Sophomores, Juniors, and Seniors. 3 credits: 3 recitations.

2–c. Historical Geology. A detailed study of the history of various groups of plants and animals, as recorded in the rocks of the earth's surface. Special attention will be given to the phylogenetic development of the vertebrates. Recitations, lectures and written reports required. Mr. Emery.

Prerequisites: Zoölogy 1–a or equivalent. Elective for Juniors and Seniors. 3 credits: 3 recitations.

5–a. Economic Geology. A study of the origin and distribution of various economic products such as coal, petroleum, natural gas, building materials and various metals. Brief consideration will be given to the methods of mining, purification, and to the economic mineral resources of New Hampshire. Mr. Emery.

Elective for Agriculture and Liberal Arts students. 3 credits: 3 recitations.

6–a. Elementary Geology, Laboratory. In this course a laboratory study will be made of the most common rocks and minerals comprising the main mass of the earth's outer shell: of geologic structure as shown

by contoured geologic maps and models; and the life forms developed in each geologic period. Mr. Emery.

Elective for Sophomores, Juniors, and Seniors. 1 credit: 1 laboratory.

7–c. **Regional and Economic Geography.** This course includes a study of those fundamental factors, such as physiography, climate, and the distribution of natural resources, that exert an influence on the economic and political development of a region. Textbook: "Colby-Source Book of Economic Geography." Mr. Emery.

3 credits: 3 lectures. (Given in 1922–23 as 5–b and 5–c.)

100–b. **Clay Products and Building Stones.** A study of the origin and distribution of building stones and clay products with special reference to their economic importance. Laboratory work will consist of the examination and testing of samples. Tests and microscopical examination will be made with an attempt to determine their resistance to weathering, etc. Mr. Emery.

Required of Juniors in Architectural Construction. Elective for other Juniors and Seniors. 2 credits: 1 lecture: 1 laboratory.

HISTORY AND POLITICAL SCIENCE

CLARENCE W. SCOTT, *Professor*
DONALD C. BABCOCK, *Associate Professor*
JOSEPH T. LAW, *Instructor*

HISTORY

Major: 27 hours in history, including 101a–102b–103c.

Minor: 27 hours in any one of the following subjects: Economics, not including Accounting; Education and Psychology; English, French; German; Spanish, Sociology.

In the subjects in history an important place is given to historical reading carried on in the reference room. In some cases a considerable part of the work is written.

Students electing history subjects are referred to the introductory note under Social Science.

101–a. **Introduction to Modern Europe.** This and the two following subjects constitute the basic course, required of students majoring

in history, and recommended for all students intending to take other subjects in history. This subject begins at about the year 1500.

Elective for Freshmen who are taking Social Science 1–a, and for Sophomores who have had or are taking Social Science 1–a or 2–b. 3 credits: 3 recitations.

102–b. Introduction to Modern Europe. Continuation of 101–a.

Elective for Freshmen and Sophomores who have had or are taking Social Science 2–b. 3 credits: 3 recitations.

103–c. Introduction to Modern Europe. Continuation of 102–b.

Elective for Freshmen who are taking Social Science 3–c, and for Sophomores, without prerequisite. 3 credits: 3 recitations.

104–a. The United States from 1815 to 1850.

Elective for Sophomores who have had or are taking Social Science 1–a, or 2–b, and for Juniors and Seniors without prerequisite. 3 credits: 3 recitations.

105–b. The United States from 1850 to 1880.

Elective for Sophomores who have had or are taking Social Science 2–b, and for Juniors and Seniors without prerequisite. 3 credits: 3 recitations.

106–c. The United States since 1880.

Elective for Sophomores, Juniors and Seniors without prerequisite. 3 credits: 3 recitations.

107–a. England to 1485.

Prerequisite: 3 hours of history. Elective for Juniors and Seniors. 3 credits: 3 recitations.

108–b. England from 1485 to 1714.

Prerequisite: 6 hours of history. Elective for Juniors and Seniors. 3 credits: 3 recitations.

109–c. England since 1714.

Elective for Juniors and Seniors. 3 credits: 3 recitations.

110–a. English Colonies in America.

Prerequisite: 3 hours of history. Elective for Juniors and Seniors, and for Sophomores by special permission. 3 credits: 3 recitations. Offered in 1925–26.

111–b. The United States to 1815.

Prerequisite: 6 hours of history. Elective for Juniors and Seniors. 3 credits: 3 recitations. Offered in 1925–26.

112–c. **Spanish and Latin-American Civilization.**

Elective for Juniors and Seniors. 3 credits: 3 recitations. Offered in 1925–26.

113–b. **The Ancient Orient.**

Elective for Juniors and Seniors. 3 credits: 3 recitations. Offered in 1925–26.

114–b. **The Middle Ages.**

Prerequisite: 3 hours of history. Elective for Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

115–c. **Renaissance and Reformation.**

Prerequisite: 6 hours of history. Elective for Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

119–c. **Greek and Roman History.**

Elective for Juniors and Seniors. 3 credits: 3 recitations. Offered in 1925–26.

120–a. **History from the Teacher's Viewpoint.** This subject deals with methods of history teaching, historical geography, theories of historic interpretation, etc. Required of students majoring in history.

Prerequisite: 27 hours in the social sciences, including 9 hours of history. Elective on consultation with the instructor. 3 credits: 3 recitations.

POLITICAL SCIENCE

Major: 27 hours, consisting of nine hours of History and 18 hours of Political Science, approved by the major advisor.

Minor: 27 hours in any one of the following subjects: Economics, not including Accounting; Education and Psychology; English; French; German; Spanish; Sociology.

1–a. **Laws of Business.** Recitations, supplemented by the discussion of cases.

Elective for Sophomores, Juniors and Seniors in Liberal Arts, and Seniors in Agriculture. 3 credits: 3 recitations.

2–b. **American Constitutional Law.** Recitations, supplemented by a study of the decisions of the United States Supreme Court. Special attention is given to the connection between American constitutions and American political history.

Elective for Sophomores, Juniors and Seniors in Liberal Arts, and Seniors in Agriculture. 3 credits: 3 recitations.

7–c. Political Parties and Practical Politics.

Elective for Sophomores, Juniors and Seniors. 3 credits: 3 recitations.

5–a. American Government. This subject will deal with the Federal Government, taking up first the building of the Constitution and its general nature, and then in some detail its executive, legislative, and judicial departments.

Elective for Sophomores who have had or are taking Social Science 1–a or 2–b, and for Juniors and Seniors. 3 credits: 3 recitations.

6–b. American Government. A continuation of 5–a, dealing largely with state and municipal government in the United States. Political parties and local and rural government will also be considered.

Elective for Sophomores who have had or are taking Social Science 2–b, and for Juniors and Seniors. 3 credits: 3 recitations.

8–c. Municipal Government. The various types of city government will be studied. After an historical review of the city and its political nature, attention will be given to the major-council, commission, and city-manager forms of government. The various activities of the city will be studied, and comparisons made with European cities.

Prerequisite: 6–b. Elective for Sophomores, Juniors, and Seniors. 3 credits: 3 recitations.

9–a. Government of England. The historical background of the English government will be studied, followed by consideration of Parliament, the cabinet system, responsible government, the executive departments, the judiciary, local government, and imperial control.

Prerequisite: 5–a. Elective for Juniors and Seniors. 3 credits: 3 recitations.

10–b. Governments of Continental Europe. Among European governments, those of France, Italy, Switzerland, and Germany will be given most attention. The spirit of their various institutions will be noted, and comparisons made with England and the United States.

Prerequisite: 5–a and 9–a. Elective for Juniors and Seniors. 3 credits: 3 recitations.

11–c. Political Theory. The main interest is in the political philosophy of Plato, Aristotle, Polybius, Cicero, and the mediaeval scholastic

writers, but there will be some discussion of the rise of the state and of the political background of ancient and mediaeval times.

Prerequisite: 9–a and 10–b. Elective for Juniors and Seniors. 3 credits: 3 recitations.

13–b, 14–c. International Law. The general principles of public international law, treating of the legal relations of states and of individuals as developed by treaties, common usage, legislation, diplomatic practice, and by the decisions of municipal courts and international tribunals. Special emphasis will be placed upon the problems of International Law involved in the recent World War.

Elective for Juniors and Seniors. Three credits: three recitations.

HOME ECONOMICS

HELEN F. MCLAUGHLIN, *Professor*
EMMA A. BAIE, *Associate Professor*
IRMA G. BOWEN, *Instructor*

HOUSEHOLD ARTS

1–a, 2–b, 3–c. Elementary Clothing. Fundamental principles of hand and machine sewing. Cutting, fitting and making of undergarments. Study of pattern construction and design with adaptations to various styles of garments and changing fashions. Designing and making of summer dresses.

Required of all Freshmen taking Home Economics courses. Elective for other students. 3 credits: 2 laboratories; 1 recitation; 2 hours outside work. (Given as 30–a,–b,–c prior to 1923–24.)

4–a, 5–b, 6–c. Advanced Clothing. Study of line, silhouette, color and texture as applied to costume. Designing different types of costumes, suitable to various figures. Garments made of wool, silk, etc.

Prerequisite: Home Economics 1–a, 2–b, 3–c. Required of Sophomores in Teacher Training. Elective for other students. 2 credits: 2 laboratories; 2 hours outside work. (Given as 32–a, –b, –c prior to 1923–24.)

7–a, 9–c. Millinery. Making winter and summer hats. Renovating materials and remodeling frames. Making of flowers.

Required of Juniors in Teacher Training. Elective for other students. 2 credits: 2 laboratories; 2 hours outside work. (Given as 34–a, –b, –c prior to 1923–24.)

10–b. Laundry and House Care. History of laundering. A study of washing equipment. Methods of cleansing; removal of stains; study of washing agents; processes of washing the various fabrics; special cleansing; disinfection and dry cleaning. Care and cleaning of the house.

Required of all Juniors taking Home Economics courses. Elective for other Home Economics students. 2 credits: 2 laboratories. (Given as 36–b prior to 1923–24.)

11–a. Textiles. Study of growth, manufacture, physical and chemical properties of the four principal fibers. Identification, classification, mounting and recording of data of standard materials. Hand weaving.

Required of all Seniors taking Home Economics courses. Elective for other students. 3 credits: 1 recitation; 2 laboratories. (Given as 38–a prior to 1923–24.)

12–b. Home Furnishing and Decoration. Consideration of the home as the setting or background of family life. Study of color schemes, wall coverings, hangings and furnishings with estimated costs.

Required of Seniors in Teacher Training. Elective for other students. 2 credits: 2 laboratories. (Given as 40–a prior to 1923–24.)

13–b. Basketry. Making of woven reed and sewed Indian baskets. (Class limited to 20.)

Open to all college women. 2 credits: 2 laboratories. (Given as 44–b in 1922–23.)

14–b. Tailoring. Problems in making tailored garments.

Elective for Juniors in Home Economics courses. Prerequisite: Household Arts 6–c. 2 credits: 2 laboratories. (Given as 50–c prior to 1923–24 and as 14–b Dressmaking in 1923–24.)

16–c. History of Costume. A survey of the changes and development of costume, both ancient and modern.

2 credits: 2 lectures.

HOUSEHOLD SCIENCE

51–a, 52–b, 53–c. Food and Principles of Cookery. Food principles and their practical application in the healthful and economical preparation of food.

Prerequisites: Chemistry 8–c. Required of Sophomores in Home Economics. 2 credits: 2 laboratories. (Given as 31–a, –b, –c prior to 1923–24.)

54–a. Meal Preparation. Marketing of foods and preparation and serving of meals.

Prerequisite: Household Science 53–c. Required of all Juniors in Home Economics courses. 3 credits: 2 laboratories; 1 recitation.

56–c. Experimental Cookery. Comparative experimental cookery: Assignments in individual project work.

Prerequisite: Household Science 53–c. (Given as 33–b prior to 1923–24.)

57–c. Nutrition and Dietetics. Problems in dietary calculation; application of the principles of human nutrition in the adaptation of diet to varying physiological, social and economic conditions.

Required of all Juniors in Home Economics courses. Prerequisite: Household Science 54–a. 3 credits. 2 recitations; 1 laboratory. (Given as 35–c prior to 1923–24.)

58–a, 59–b. Institutional Management. A study of the organization, equipment and management of institutional groups; and the buying, planning, preparing and serving of meals. Trips to different institutions.

Required of Seniors in Institutional Management Course. Prerequisite: Home Economics 57–c. 2 credits: 2 lectures. (Given as 37–a, –b prior to 1923–24.)

60–c. House Management. A study of the organization of the house as a home, and the principles involved in its care and management.

Required of Juniors in Home Economics. Open to all college women. 2 credits: 1 lecture; 1 laboratory. (Given as 39–c prior to 1923–24.)

61–a, –b. Practice House. Students work in the house in groups and serve in the capacity of the different members of the family.

Required of Seniors in Teacher Training course. (If possible, no 8 o'clock classes should be scheduled while taking this subject.) 5 credits. (Given as 41–a, –b prior to 1923–24.)

62–a. Home Nursing. A study of the principles involved in home care of the sick.

Required of Juniors in Home Economics. 2 credits: 2 lectures. (Given as 45–a prior to 1923–24.)

63–b. Forestry Cookery. This subject aims to teach the principles of cookery as especially adapted to camp life.

Elective for Junior and Senior Forestry students. (Given in alternate years beginning 1924–25.) 2 credits: 1 lecture; 1 laboratory. (Given as 47–b prior to 1923–24.)

64–b. Food Selection. An introduction to the principles involved in selection of foods; food production and manufacture.

Required of all Freshmen in Home Economics courses. 2 credits: 2 lectures.

65–c. Survey of Home Economics.

Required of all Freshmen in Home Economics Courses. 2 credits: 2 lectures. (Given as 49–c prior to 1923–24.)

66–c. Institutional Practice. Practice work will be given in institutions of different types, such as hospitals, cafeteria, lunch rooms, dormitories, etc. Students interested in dietetics will be placed in approved hospitals and dispensaries as student dietitians, and those specializing in other institutional work will be placed in approved institutions for required practice.

Required of Seniors in Institutional Course. 12–15 credits. 8 weeks or more. (Not given in 1923–24.)

67–a, 68–b, 69–c. Food Selection and Preparation. A general course in the healthful and economical selection and preparation of food. Open to students not taking one of the prescribed courses in Home Economics.

3 credits: 2 laboratories, 1 lecture.

HOME ECONOMICS EDUCATION

101–a. Teaching Home Economics. Courses of study, lesson plans, equipment, text books and observation. Miss Baie.

Prerequisite: Education 11–c. Open only to Seniors in the Home Economics Teacher Training course. 3 credits: 3 recitations.

102–b. Home Economics in the High School. The present high school product, standard and means of improvement. Miss Baie.

Open only to Seniors in the Home Economics Teacher Training course. 3 credits: 3 recitations.

103-c. Supervised Teaching in Home Economics. Each senior will spend at least nine weeks as an apprentice teacher in some high school in the state. Miss Baie.

Prerequisite: Education. Required of Seniors in the Teacher Training course and open only to these students. 15 credits.

HORTICULTURE

GEORGE F. POTTER, *Professor*
J. RAYMOND HEPLER, *Assistant Professor*
SIDNEY W. WENTWORTH, *Assistant Professor*
JAMES MACFARLANE, *Instructor*

1-c. Vegetable Gardening. This subject is designed to give a working knowledge of the various phases of commercial vegetable production. It includes a study of garden soils, testing and planting of seeds, selection of varieties with reference to conditions in the state, construction and management of hotbeds and cold frames, and the fertilization and irrigation of the garden. Mr. Hepler.

Required of Sophomores in Agriculture. 2 credits: 3 recitations; 1 laboratory. Given in the last half of the term.

2-a. Floriculture: Greenhouse Construction and Management. This subject treats of modern methods of greenhouse work and the more important plants grown under glass. Varieties, culture, marketing, and enemies of greenhouse plants are studied. Each student is required to do practical work in propagating, potting, watering and ventilating plants. A study is made of the history and development of different types of greenhouses, including methods of heating and general management. Mr. Macfarlane.

Elective for any student. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

3-c. Practical Pomology. A study of the fundamental principles of fruit growing; such as location, choice of site, adaptability of soil for fruit growing, choice of varieties, soil management, planting of orchards, pruning, spraying and thinning. Harvesting and marketing are very briefly discussed. Mr. Wentworth.

Required of Sophomores in Agriculture. 2 credits: 3 recitations; 1 laboratory. Given in the first half of the term.

4–c. Viticulture and Small Fruit Culture. A comprehensive study of the grape and small fruits, such as the strawberry, raspberry, blackberry, currant and gooseberry. Each fruit is studied with reference to its history, propagation, planting, pruning, injurious insects and diseases, picking and marketing. Mr. Wentworth.

Elective for any student. 3 credits: 2 recitations; 1 laboratory.

Horticulture. 5–a. Systematic Survey of Fruits and Vegetables. A study of the more important species of fruits and vegetables and their botanical relationships. Mr. Potter and Mr. Hepler.

Required of Seniors in Horticulture. 2 credits: 1 recitation; 1 laboratory.

6–b. Commercial Pomology. This subject deals with the management of commercial orchards, problems of fruit production, marketing, transportation and coöperation. Special study is made of the experimental data which underlie orchard practices. Mr. Potter.

Prerequisite: Horticulture 3–c. Required of Seniors in Horticulture who do not elect Horticulture 17–a. Elective for other students. 3 credits: 2 recitations; 1 laboratory.

7–c. Landscape Gardening: General Principles. A study of the principles involved in ornamental and landscape gardening. Special attention is given to the beautifying of home surroundings. Laboratory work consists of landscape design and practice in laying out and planting home and public grounds. Mr. Hepler.

Required of Seniors in Horticulture. Elective for other students. 4 credits: 2 lectures; 1 recitation; 1 laboratory.

8–b. Plant Propagation. A study of the methods of propagation and the care of trees, shrubs and perennial plants in the nursery. Lectures, reference readings, and practice. Mr. Wentworth.

Elective for any student. 3 credits: 2 recitations; 1 laboratory.

9–b. Floriculture: Conservatory and Decorative Plants. A study of the classification, propagation, and culture of the tropical foliage and flowering plants such as ferns, palms, orchids, etc., for use in the conservatory and home. Mr. Macfarlane.

Elective for any student. 2 credits: 1 recitation; 1 laboratory.

9.5–c. **Floriculture: The Outdoor Flower Garden.** A study of flowering annuals, herbaceous perennials, bulbs and bedding plants, with instructions in their propagation, culture and use in the beautifying of the home grounds. Lectures, laboratory, and field trips. Mr. Macfarlane.

Elective for any student. 2 credits: 1 recitation; 1 laboratory.

10–c. **Evolution and Improvement of Plants.** The application of the modern principles of genetics to agricultural plant breeding. Hybridization and selection are studied as means of improving horticultural varieties of plants. It is preferably preceded by genetics (Zoölogy 17–c). Mr. Potter.

Required of Seniors in Horticulture. Elective for other students. 3 credits: 2 recitations; 1 laboratory.

11–b. **Vegetable Forcing.** A subject dealing with the study of special vegetables as grown under glass. Emphasis is placed upon the commercial phases of the work, including varieties, culture, and marketing. Each student is required to grow crops from seeding to maturity. Mr. Hepler.

Prerequisite: Horticulture 1–c. Elective for all students. 3 credits: 1 lecture; 2 laboratories.

12–a, 12.5–b. **Horticultural Seminar.** A review of the recent horticultural literature and methods of investigational work. Mr. Potter.

Required of Seniors in Horticulture. Other students must obtain permission to enter. 2 credits: 1 seminar meeting.

13–c. **Vegetable Gardening.** This subject takes up the problems of home and school gardening. It includes the study of methods of laying out and handling home, school and community gardens, choice of crops and varieties, their adaptation to local soil conditions, and the culture, displaying and judging of home garden vegetables. Mr. Hepler.

Elective for women students. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

14–a, 15–b, 16–c. **Advanced Horticulture.** Laboratory practice in seasonal horticultural work. Fruit packing may be practiced during the winter term.

In addition special or research work in any phase of horticulture may be taken by arrangement with the head of the department. Mr. Potter, Mr. Hepler, Mr. Wentworth, Mr. Macfarlane.

Elective for Juniors and Seniors. Students must obtain permission to register from the head of the department. Hours and credits to be arranged.

17–a. Commercial Vegetable Gardening. This subject deals with the management of commercial vegetable gardening. Special attention is given to storing, packing of vegetables for market, their display and judging. The classification and identification of the more common varieties of vegetables is also studied. Mr. Hepler.

Prerequisite: Horticulture 1–c. Elective for all students. 3 credits: 2 lectures; 1 laboratory.

18–a. Landscape Gardening: Plant Materials. The identification of trees, shrubs, and herbaceous perennials as they appear in the fall and early winter and their use in landscape design. Mr. Hepler.

Elective for any student. 2 credits: 2 laboratories.

19–c. Elementary Beekeeping. A study of the life history and habits of honey bees and their adaptation to apiary conditions. The laboratory work includes the construction and use of hives and hive fittings, and preparation of winter cases. The student is also given practice in handling bees. Mr. Hepler.

Elective for any student. 2 credits: 1 lecture; 1 laboratory.

20–a. Commercial Beekeeping. This subject deals with the principles and practices underlying the production of commercial crops of comb and extracted honey. The laboratory work consists of the handling of bees during the fall and winter, the extraction of honey and the preparation for market of extracted honey, comb honey and wax. Mr. Hepler.

Elective for any student. 2 credits: 1 lecture; 1 laboratory.

21–c. Supervised Horticultural Experience in Orchard, Garden, or Greenhouses. Supervised horticultural experience in orchard, garden, or greenhouses, April 1st to September 1st. Weekly reports are required. Mr. Potter.

Required of all Juniors in the 3rd term of the Junior year. 18 credits.

NOTE: Students who have previously had this experience may substitute 18 elective credits for this required subject.

LANGUAGES

HAMILTON F. ALLEN, *Professor*
J. HERBERT MARCEAU, *Associate Professor*
GEORGE H. BLAKE, *Instructor*
JOHN S. WALSH, *Instructor*
THORSTEN KALIJARVI, *Instructor*

Major: 27 hours of French, German, Spanish (exclusive of subjects 1–a, 2–b, 3–c in each), or Latin.

Minor: 27 hours selected from Group I (except English 1–a, 2–b, 3–c), and from Group III (subjects in Education, Psychology, History, and Social Science); not less than 9 hours must be taken in any given subject.

Students who are preparing to teach a foreign language will elect with profit a second foreign language and such subjects as English Poetry and Drama, History and Principles of Education, History of Europe and South America, Educational Sociology.

The following subjects may be counted toward requirements in Education: French 13–a, 14–b, 15–c; French 22–a; German 16–a, 17–b, 18–c; Latin 10–a, 11–b, 12–c; Spanish 13–a, 14–b, 15–c.

FRENCH

MR. ALLEN, MR. MARCEAU, MR. WALSH, AND MR. KALIJARVI

1–a, 2–b, 3–c. Elementary French. Elements of French grammar, reading of simple prose, oral practice, dictation.

3 credits: 3 recitations.

4–a, 5–b, 6–c. French Prose. Reading and translation, review of grammar, oral practice, composition, outside reading.

Prerequisite: French 3–c or its equivalent. Freshmen who offer two or more units of French for admission to college may take this subject. 3 credits: 3 recitations.

7–a, 8–b, 9–c. General View of French Literature. Prose and poetry of some of the more important writers with Doumic's Histoire de la littératuré française.

Prerequisite: French 6–c. 3 credits: 3 recitations.

10–a, 11–b, 12–c. French Drama. The rise and development of the drama in France with reading and study of plays indicative of the various tendencies from Corneille to the present.

Prerequisite: French 9–c. 3 credits: 3 recitations.

13–a, 14–b, 15–c. French Composition and Conversation. The use of written and spoken French is taught by careful attention to pronunciation; language phone records of words, sentences, and complete plays; composition, letter, and theme writing; memorization of songs, prose extracts, dialogs, poems, and short plays; stereopticon lectures; short talks given by individual students on assigned subjects.

This subject is especially valuable for students who wish to teach French and conduct French clubs. Such students will have the opportunity of coöperating with the instructor in the preparation and presentation of material to the class.

This subject is for students who have shown special aptitude for and desire to learn French. Enrollment is limited to twenty. Permission of the instructor is required before enrollment.

Prerequisite: French 6–c. 3 credits: 3 recitations.

16–a, 17–b, 18–c. Romanticism and Realism in French Literature of the Nineteenth Century. Prose and poetry of the more important writers with F. Strowski: Tableau de la littérature française au XIX siècle. (Given in 1925–26.)

Prerequisite: French 9–c. 3 credits: 3 recitations.

19–a, 20–b, 21–c. Recent Tendencies in French Literature. Prose and poetry of the end of the nineteenth and beginning of the twentieth centuries. This course is open to a limited number of qualified students.

3 credits: 3 recitations.
One additional credit in this subject may be gained by students who do a certain amount of outside reading and pass tests on the same. Students who desire this additional credit must register for it on Registration Day.

22–a. Methods of Teaching Modern Languages. Assigned reading, reports, discussion, and practice in teaching.

Prerequisite: 6–c in French, German, or Spanish. Elective for students who intend to teach Modern Languages.
2 credits: 2 recitations.

GERMAN

MR. BLAKE

1–a, 2–b, 3–c. Elementary German. Elements of German grammar, reading of simple prose, oral practice, dictation and composition.

3 credits: 3 recitations.

4–a, 5–b, 6–c. **German Prose.** Reading of modern prose, review of grammar, composition, oral practice.

Prerequisite: German 3–c or its equivalent. Freshmen who offer two or more units of German for admission to college may take this subject. Required of Sophomores in Chemical Engineering. 3 credits: 3 recitations.

7–a, 8–b, 9–c. **Goethe and Schiller.** Faust, Part I: Selections from the correspondence between Schiller and Goethe; Wallenstein; Die Jungfrau von Orleans. (Given in 1925–26.)

Prerequisite: German 6–c. 3 credits: 3 recitations.

10–a, 11–b, 12–c. **German Literature of the Eighteenth and Nineteenth Centuries.** Selections from the works of Lessing, Goethe, Schiller, Heine, Ballards and Lyrics.

Prerequisite: German 6–c. 3 credits: 3 recitations.

13–a, 14–b, 15–c. **German Contemporary Literature.** Sudermann, Hauptmann and other authors. (Given in 1925–26.)

Prerequisite: German 6–c. 3 credits: 3 recitations.

16–a, 17–b, 18–c. **German Composition and Conversation.** The aim of this subject is to train the student in writing, speaking, and understanding modern German. The work includes the essentials of phonetics, exercises in writing German, constant practice in speaking the language; memorization of songs, dialogs, poems, and short plays; stereopticon lectures illustrating German life and institutions.

Enrollment is limited to twenty. Permission of the instructor is required before enrollment.

Prerequisite German 6–c. 3 credits: 3 recitations.

LATIN

MR. WALSH

1–a. **Prose authors.** Cicero, Tusculan Disputations. Translation, lectures, and study of Roman life and philosophy.

Students who have offered advanced Latin for admission to college may take this course.

Prerequisite: 3 or 4 years of Latin. 3 credits: 3 recitations.

2–b, 3–c. **Works of Horace, Catullus and other poets.** Translation, lectures, and study of Latin influence on English poetry.

3 credits: 3 recitations.

4–a. Plautus. Study of ancient comedy; lectures on the literature and life of Rome.

Prerequisite: Latin 3–c. 3 credits: 3 recitations.

5–b. Pliny's Letters. Careful study of the historical background of the letters. Translation, lectures.

3 credits: 3 recitations.

6–c. Terence: Andria, and Phormio. Comparison with the comedies of Plautus.

3 credits: 3 recitations.

7–a. Horace, Satires and Epistles. Translation, and lectures. Study of Roman Society as portrayed in the literature of the time. (Given in 1925–26.)

Prerequisite: 6–c. 3 credits: 3 recitations.

8–b. Juvenal, Satires: Martial, Epigrams. Translation and lectures. Study of Roman society as portrayed in the literature of the time. (Given in 1925–26.)

3 credits: 3 recitations.

9–c. Lucretius, De Rerum Natura. Translation and lectures. Study of ancient views on philosophy, religion, and natural sciences. (Given in 1925–26.)

3 credits: 3 recitations.

10–a, 11–b, 12–c. Literature and History. This subject is primarily for those students who wish to be prepared to teach Latin in secondary schools, and for others who desire a comprehensive view of Latin Literature of the Golden Age.

The works of Caesar, Cicero, Virgil, and others will be studied for their literary value and historical content. Caesar's campaigns in Gaul will be studied by means of the "Commentaries," maps, stereopticon slides, and lectures. The history of Rome during the Golden Age will be studied in order to provide the background necessary to the student or teacher of the Classics.

Prerequisite: Latin 3–c. 3 credits: 3 recitations.

SPANISH

Mr. Allen, Mr. Blake, and Mr. Kalijarvi

1–a, 2–b, 3–c. Elementary Spanish. Elements of Spanish grammar, reading of simple prose, oral practice, dictation.

3 credits: 3 recitations.

4–a, 5–b, 6–c. Modern Spanish Prose and Poetry. Review of grammar, memorization, composition, oral practice.

Prerequisite: Spanish 3–c or its equivalent. Freshmen who offer two or more units of Spanish for admission to college may take this subject. 3 credits: 3 recitations.

7–a, 8–b, 9–c. The Spanish Novel in the Nineteenth Century. Book reports and theme writing. (Given in 1925–26.)

Prerequisite: Spanish 6–c. 3 credits: 3 recitations.

10–a, 11–b, 12–c. Modern Spanish Drama. Dramas of Nunez de Arce, Echegaray, the brothers Alvarez Quintero, Benavente and others. This course is carried on as far as possible in Spanish.

Prerequisite: Spanish 9–c. 3 credits: 3 recitations.

One additional credit in this subject may be gained by students who do a certain amount of outside reading and pass tests on the same. Students who desire this additional credit must register for it on Registration Day.

13–a, 14–b, 15–c. Spanish Composition and Conversation. The use of written and spoken Spanish is taught by careful attention to pronunciation; language phone records of words, sentences and complete plays; composition, letter, and theme writing; memorization of songs, prose extracts, dialogs, poems, and short plays; stereopticon lectures; short talks given by individual students on assigned subjects.

This subject is especially valuable for students who wish to teach Spanish and conduct Spanish clubs. Such students will have opportunity to coöperate with the instructor in the preparation and presentation of material to the class.

This subject is for students who have shown special aptitude for and desire to learn Spanish. Enrollment is limited to twenty. Permission of the instructor is required before enrollment.

Prerequisite: Spanish 6–c. 3 credits: 3 recitations.

LIBRARY SCIENCE

WILLARD P. LEWIS, *Librarian*

Lectures and problems on the Use of the Library followed by demonstrations to small groups will be given to members of the freshman class during the preliminary freshman week.

1–b. Elementary Library Science. A general introduction to library methods with a brief survey of cataloging, classification, reference work, bibliography, book order and selection, library history and practical work.

Elective for Sophomores, Juniors and Seniors. 3 credits: 2 lectures; and two hours of practice work per week.

MATHEMATICS

HERMON L. SLOBIN, *Professor*
EDMOND W. BOWLER, *Assistant Professor*
WALTER E. WILBUR, *Instructor*
HUBERT B. HUNTLEY, *Instructor*
HORACE A. GIDDINGS, *Instructor*

Major: 27 hours from Mathematical subjects between numbers 4 and 20.

Minor: 27 hours to be selected by the head of the department of Mathematics.

200–a. Elementary Analysis. A review of algebra through quadratics, geometrical theorems, circular functions.

Prerequisite: See requirements of mathematics for admission to College of Technology. Mathematics 200–a is required as introductory subject to 201 for all Freshmen in the College of Technology who are unable to carry creditably Course 201. 6 recitations: credits applicable only for removal of an entrance condition.

201–a, –b, 202–b, –c, 203–a, –c. Unified First Year Engineering Mathematics. This constitutes a unified course of algebra, trigonometry, analytic geometry, and an introduction to differential and integral calculus.

Prerequisite: See requirements of mathematics for admission to College of Technology. Required of all students in the College of Technology. Students who are unable to carry Course 201 creditably will be required to take Mathematics 200–a as introductory to 201. 6 credits: 6 recitations.

1–a. Trigonometry. The general angle; trigonometric functions of the general angle; radian measure; solution of right and oblique trian-

gles with and without logarithms; trigonometric identities and equations; inverse trigonometric functions.

Prerequisite: high school algebra and plane geometry. Required of all students whose major is Mathematics and of Freshmen in Arts course in Architecture. 3 credits: 3 recitations.

2–a, 3–b. **Algebra.** Review of fundamental operations; theory and use of logarithms; graphs of simple algebraic functions; variations, complex numbers; elements of determinants and theory of equations.

Prerequisite: high school algebra and plane geometry. Required of all students whose major is Mathematics. 2–a required of Freshmen in Arts course in Architecture, 3 credits: 3 recitations.

1.5–a, 2.5–b, 3.5–c. **Elements of Statistical Method.** The elementary mathematics of finance and statistical methods. This course is designed particularly for students whose major is Economics and Accounting. It will also meet the needs of students in the Department of Sociology and Psychology.

Prerequisite: high school algebra and plane geometry. 3 credits: 3 recitations.

4–b. **Analytic Geometry.** Cartesian and polar coördinates, graphs of algebraic functions; change of coördinate axes; graphs of transcendental functions; straight line; circle; conics.

Prerequisites: Mathematics 1–a. 3 credits: 3 recitations. Required of all students whose major is Mathematics and of Freshmen in Arts course in Architecture.

5–c. **Analytic Geometry.** A continuation of 4–b. Empirical equations; higher plane curves; analytic geometry of space.

Prerequisites: Mathematics 3–b and 4–b. Required of all students whose major is Mathematics. 3 credits: 3 recitations.

6–c. **Calculus.** Differentiation and integration of the standard elementary forms, with simple applications.

Prerequisites: Mathematics 3–b and 4–b. Required of all students whose major is Mathematics. 3 credits: 3 recitations.

7–a, –b, 8–b, –c, 9–c. **Calculus.** A continuation of 6–c or 203–c. More advanced applications of differentiation and integration; special

methods of integration; the definite integral; applications of the definite integral to geometry, physics and mechanics.

Prerequisite: Mathematics 5–c and 6–c, or 203–c. Required of Sophomores in Chemical, Electrical and Mechanical Engineering. Required of all students whose major is Mathematics. 7–a required in Arts and Science Chemistry. 3 credits: 3 recitations.

10–a, 11–b, 12–c. Advanced Calculus. A study of some of the more advanced topics of differential and integral calculus and of ordinary differential equations, especially those of the first and second orders with applications of geometry, physics and mechanics. Mr. Slobin.

Prerequisite: Mathematics 9–c. 3 credits: 3 recitations.

13–a. Teaching of Mathematics in Secondary Schools. Lectures and reports on assigned readings. Particular attention given to the teaching of first-year algebra and plane geometry. A term paper on some assigned topic will be required. Mr. Slobin.

Prerequisites: Mathematics 6–c or 203–c, and Education 1–a and 2–b. Required of Arts and Science students whose major is Mathematics. 3 credits: 3 recitations.

14–b, 15–c. Theory of Equations and Determinants. Definitions and properties of determinants; complex numbers; properties of polynomials and equations; solution of numerical equations; elimination. Mr. Slobin.

Prerequisite: Mathematics 9–c. 3 credits: 3 recitations.

16–a, 17–b, 18–c. Advanced Analytic Geometry. Coördinate systems; algebraic curves; application of the theory of invariants to higher plane curves of the third and fourth order; differential geometry. Mr. Slobin.

Prerequisite: Mathematics 9–c. 3 credits: 3 recitations.

19–a, 20–c. Surveying. Theory, use and adjustment of the chain, level, transit and plane table. The field work consists of measuring distances, angles and areas; establishing bench marks, running profiles, grade lines and cross-sections with the level; finding areas with the transit; laying out simple curves with the transit; and making topographic maps with the plane table and transit. Mr. Bowler.

Prerequisites: Mathematics 1 or 21. Required of Seniors in Mechanical and Electrical Engineering and Juniors in Architectural Construction. 19–a required of Juniors in Forestry. 3 credits: 3 laboratories.

21–b. **Elementary Mathematical Analysis.** Simpler elements of algebra, geometry and trigonometry.

Required of Freshmen in Agriculture. 3 credits: 3 recitations.

103–c. **Solid Geometry.** The elements of solid geometry.

Required of Freshmen in the Arts Course in Architecture. 3 credits: 3 recitations.

120–c. **Astronomy.** A brief course in the fundamental concepts of astronomy. Recitations, lectures and study of the constellations.

Prerequisites: Physics 1–a, and Mathematics 1–a, or 2–a. 3 credits: 2 lectures; 1 recitation.

MECHANICAL ENGINEERING

CALVIN H. CROUCH, *Professor*
EDWARD L. GETCHELL, *Assistant Professor*
FRANK A. BURR, *Instructor*
E. HOWARD STOLWORTHY, *Instructor*

1–c. **Mechanics.** Force; equilibrium; composition and resolution of forces; center of gravity; couples; non-current forces; stresses in cranes and framed structures; moment of inertia of areas and solids; motion of translation and rotation. Mr. Getchell.

Prerequisite: Mathematics 8–b. Required of Sophomores in Electrical and Mechanical Engineering. 3 credits: 3 recitations.

2–a, 3–b, 4–c. **Mechanics.** A continuation of Mechanical Engineering 1–c, and includes dynamics, work, energy and power, strength of materials, a study of the stresses and strains in riveted joints, beams and columns, and deals with graphical statics, roof trusses and reinforced concrete. Mr. Getchell.

Prerequisite: Mechanical Engineering 1–c. Required of Juniors in Electrical and Mechanical Engineering. 3 credits: 3 recitations.

11–a, 12–b, 13–c. **Elements of Mechanics.** Principles of mechanics as applied to engineering structures, involving composition of forces, analysis of stresses, concurrent forces, graphics, motion of translation and rotation, dynamics as applied to flywheels and rotating bodies,

strength of materials, beams, columns, etc. Graphical solutions of forces in roof trusses and other framed structures. Mr. Stolworthy.

Required of Sophomores in Architectural Construction and Juniors in the Industrial courses. 3 credits: 3 recitations.

41–b, 42–c. Hydraulics. The mechanics of liquids; pressure on submerged areas such as gates, dams, etc., measurement of the flow of water through weirs, nozzles, orifices, and the flow of water in pipes, channels, and streams; the application of the principles of hydraulics to water motors such as turbines, overshot and undershot wheels, Pelton wheels, etc.; also the consideration of the various types of rotary pumps. Mr. Getchell.

Prerequisite: Mechanical Engineering 3–b. Required of Seniors in Mechanical and Electrical Engineering. 3 credits: 3 recitations.

51–b, 52–c. Thermodynamics. A study of the principles of thermodynamics and the thermodynamic properties of steam, vapors and gases; the efficiencies of the various steam and gas engine cycles. A study of the different types of steam and gas engines, steam turbines, air compressors, refrigerating machines and condensers. It also includes a study of fuel combustion in furnaces and the producer gas generator. Mr. Crouch.

Prerequisite: Mathematics 8–b. Required of Juniors in Electrical and Mechanical Engineering, and of Seniors in Industrial and Chemical Engineering. 3 credits: 3 recitations.

76–a. Power Plant Engineering. Fuels and combustion and the losses due to incomplete combustion; boilers of various types; furnaces and stokers; methods of handling coal and ashes; design of stacks; and a study of the different types of reciprocating engines. Mr. Crouch.

Prerequisite: Mechanical Engineering 52–c. Required of Seniors in Mechanical and Electrical Engineering. 3 credits: 3 recitations.

77–b. Power Plant Engineering. A continuation of 76–a. The study of the various types of steam turbines, condensers, feed water purifiers and heaters, pumps and other auxiliary equipment of the steam power plant. Mr. Crouch.

Prerequisite: Mechanical Engineering 76–a. Required of Seniors in Mechanical and Electrical Engineering. 3 credits: 1 recitation; 2 laboratories.

81–a. **Boiler Design and Graphics.** A study of the graphical solution of forces acting on roof trusses and other framed structures, and the complete design of a return tubular boiler. Mr. Getchell and Mr. Stolworthy.

Prerequisite: Mechanical Engineering 12–b. Required of Seniors in the Industrial Course. 3 credits: 3 laboratories.

82–b, 83–c. **Power Plant Machinery.** A study of the steam engine and turbine, the gas engine, boilers, condensers, pumps, and other power plant auxiliary apparatus such as feed water heaters, economizers, etc.; also a study of fuel, combustion, mechanical stokers and boiler furnaces. Mr. Stolworthy.

Required of Seniors in the Industrial Course. 3 credits: 3 recitations.

126–b. **Heating and Ventilating.** A study of the heat losses of buildings, and the design of heating and ventilating systems for residences, factories, etc. Mr. Crouch.

Required of Seniors in Mechanical Engineering and Architectural Construction. 3 credits: 1 recitation; 2 laboratories.

151–a. **Materials of Construction.** Manufacture of iron and steel, brasses, and white metal alloys; heat treatment of steel; manufacture of cement; production of cast iron and cast steel, together with the proper arrangement of foundry and equipment; machinery for and arrangement of smithy; drop forging; wire drawing, etc. Mr. Getchell, Mr. Burr and Mr. Stolworthy.

Required of Juniors in Electrical and Mechanical Engineering. 3 credits: 3 recitations.

152–a. **Kinematics of Machinery.** A study of motion in machine construction; instantaneous centers and their application to the analysis of the direction and velocity of motion; velocity and acceleration diagrams; design of quick return mechanisms; study of tooth gearing; design of cams; and the study of trains of gearing. Mr Stolworthy.

Prerequisite: Drawing 4–a. Required of Juniors in Electrical and Mechanical Engineering. 3 credits: 1 recitation; 2 laboratories.

153–b. **Valve Gears and Boiler Design.** The Bilgram and Zeuner valve diagrams and their application to the design of slide valves and

Corliss valves. The study of various types of valve gears and governors. The design of a return tubular boiler. Mr. Getchell.

Prerequisite: Mechanical Engineering 152–a. Required of Juniors in Electrical and Mechanical Engineering. 3 credits: 1 recitation; 2 laboratories.

154–c. Machine Design. A study of friction, lubrication, belt, rope and chain transmission; analysis of the stresses and strains in machine members; and the design of a boiler. It also includes the design of some machine such as a steam engine. Mr. Getchell.

Prerequisite: Mechanical Engineering 1–c. Required of Juniors in Electrical and Mechanical Engineering. 3 credits: 1 recitation; 2 laboratories.

155–a, 156–b, 157–c. Machine Design. Advanced work in machine design, including an analysis of stresses in machine members, the proper proportioning of the machine parts, and the design of the same so they can be most cheaply produced in the various shops. Mr. Getchell.

Prerequisite: Machine Design 154–c. Required of Seniors in Mechanical Engineering. 3 credits: 1 recitation; 2 laboratories.

161–a. Machine Design. The application of the principles of mechanics to the design of some machine. Mr. Getchell.

Prerequisite: Students must have had Mechanical Engineering 13–c, 82–b, 83–c. Required of Seniors in the Industrial Course. Will not be offered after 1925. 2 credits: 2 laboratories.

201–a, 202–b, 203–c. Mechanical Laboratory. This consists of efficiency tests of simple machines; calibration of instruments used in laboratory practice; tension, transverse, and compression tests of steel, iron and wood; cement and concrete testing; testing of lubricants, valve setting, steam calorimetry, flue gas analysis; steam engine indicator practice and friction tests of steam engines. Mr. Burr.

Prerequisite: Mechanical Engineering 1–c. Required of Juniors in Electrical and Mechanical Engineering. 2 credits: 1 laboratory.

204–a, 205–b, 206–c. Mechanical Laboratory. Fuel analysis; gas and steam engine tests; tests of different types of injectors; pump tests, and boiler tests; special work of an advanced nature in testing machines,

and original work to be carried out under the direction of the instructor. Mr. Burr.

Prerequisite: Mechanical Engineering 203–c and 52–c. Required of Seniors in Mechanical Engineering. 3 credits: 2 laboratory.

207–a, 208–b, 209–c. Mechanical Laboratory. Testing of materials used in construction, and calibration of instruments used in the laboratory. Steam engine indicator practice, steam calorimetry. Advanced work in engine testing, boiler and economy tests of power plants. Mr. Burr.

Prerequisite: Mechanical Engineering 12–c. Required of Seniors in Industrial course. 3 credits: 2 laboratories.

210–a, 211–b, 212–c. Mechanical Laboratory. Testing of materials used in construction, and calibration of instruments used in the laboratory. Measurement of flow of air, steam calorimetry, etc. Mr. Burr.

Prerequisite: Mechanical Engineering 12–b. Required of Juniors in Architectural Construction and Industrial courses. 2 credits: 1 laboratory. Will not be offered after 1925.

213–a, 214–b, 215–c. Mechanical Laboratory. Advanced work in engine testing, boiler and economy tests of power plants. Mr. Burr.

Prerequisite: Mechanical Engineering 212–c. Required of Seniors in the Industrial Course. 2 credits: 1 laboratory. Will not be offered after 1926.

251–a. Industrial Engineering. A study of factory conditions, safety devices, sanitation, lighting, various methods of remunerating labor, and a study of various forms of scientific management as applied to factory supervision. Mr. Crouch.

Elective for Seniors in Mechanical Engineering. Required of Seniors in the Industrial course. 3 credits: 3 recitations.

276–b. Roads and Pavements. This consists of a study of the properties of materials used in the construction of roads and pavements, also a study of road construction and repair. Mr. Bowler.

Elective. 3 credits: 3 recitations.

281–a. Water Supplies and Purification. This consists of a study of the methods employed to purify drinking waters and the treatment of sewage. Mr. Stolworthy.

Elective for Seniors in Electrical, Mechanical Engineering and Industrial courses, and Sophomores in Architectural Construction courses. 2 credits: 2 recitations.

300–c. Thesis. Original research work under the direction of the head of the department. Mr. Crouch.

Open only to Seniors in Mechanical Engineering. 3 to 6 credits.

METEOROLOGY

CHARLES H. PETTEE, *Professor*

1–b. Meteorology. Recitations and lectures on wind systems, precipitation, humidity, laws of storms and tornadoes, and methods of prediction of atmospheric changes. Mr. Pettee.

Prerequisite: Physics. Required of Juniors in Forestry. Elective for others. 3 credits: 3 recitations.

MILITARY SCIENCE

MAJOR E. B. WALKER, *Coast Artillery Corps, Professor*
CAPTAIN CHARLES S. PETTEE, *Infantry, Assistant Professor*
FIRST LIEUTENANT ALFRED E. MCKENNEY, *Infantry, Assistant Professor*
FIRST LIEUTENANT JOSEPH E. MCGILL, *Coast Artillery Corps.*
SERGEANT PATRICK HODGE, *Coast Artillery Corps, Assistant*
SERGEANT FRED W. WOOD, *Coast Artillery Corps, Assistant*

Military Training is carried on concurrently with the academic work in order that the college man may be prepared for service in time of national emergency as well as for the pursuit of his business or profession.

Two courses in Military Science are offered, one in Coast (heavy) Artillery, and one in Infantry, each leading to a commission in the Officers' Reserve Corps of the United States. Each course, which covers four years, is divided into the basic course, covering the first two years, and the advanced course, covering the succeeding two years. The basic course is required of all male freshmen and sophomores who are physically fit. The advanced course is elective for those who have completed the basic course.

Exemptions or permission to be absent cannot be accorded to freshmen or sophomores; and any student who is absent from any part of the instruction will be required subsequently to make up the omitted training or its equivalent before being credited with the number of units necessary for graduation.

The student will have the opportunity, at the proper time, to elect either the Infantry or the Coast Artillery Course; and having entered upon that course, he will be expected to continue in it while taking military training. Both courses include the fundamentals of military training, the object of which is the development of those qualities which make for success in either civil or military life, as good health and an erect carriage, courtesy and agreeable manners, enthusiasm, honor, aggressiveness and leadership. In addition, each course pays particular attention to the special material and methods used in that arm.

The Coast Artillery Course covers the principles of the construction, and the use and care of the large caliber guns used in the coast defenses, and in the railroad and mobile artillery. The manning of these weapons requires a detailed knowledge of guns and their carriages, the forces involved in their firing, motor transportation, advanced surveying, gunnery, and artillery tactics. All heavy artillery material embodies the most advanced scientific principles and the most up-to-date practice in electrical, mechanical and chemical engineering. To the engineering student this course offers, in addition to military training, an excellent opportunity to observe practical applications of his classroom work and to enlarge his view of the engineering field. The War Department furnishes the necessary guns, tractors, motor vehicles and accessories to insure ample opportunity for practical work.

The Infantry Course provides application for many college classroom subjects. Physics, chemistry, and mathematics are applied in the study of the use and nomenclature of the various infantry weapons. Psychology and sociology enter in the study of troop leadership. Thus the Infantry gives a better understanding and a broader viewpoint to the student.

The War Department has furnished 4 machine guns, 1 light mortar, a 37 M. M. gun, automatic arms, grenades, range finders, etc., besides field equipment. The entire R. O. T. C. is equipped with the 1903 (Springfield) rifle, enabling the instructors to give a complete and interesting course.

The Reserve Officers Training Corps

Physically fit male students who take military training may enroll in the Reserve Officers Training Corps. Enrollments are for two years in either the Basic or the Advanced Course. Members of the Corps are

*loaned all uniforms and equipment necessary in the training. This will include:

1 U. S. Rifle, Cal. 30	1 Mess Kit	1 Pair Leggings
1 Bayonet	2 Collar Ornaments	1 Cap, over seas
1 Cartridge Belt	1 Coat, wool, O. D.	1 Belt
1 Pack Carrier	1 Breeches, wool, O. D.	1 necktie
1 Haversack	2 Shirts, wool, O. D.	

Advanced Course.—The students who are selected for the Advanced Course and who devote the prescribed time to this course, and to attend such summer training camps as may be prescribed by the Secretary of War, are allowed during their junior and senior years commutation of subsistence at such rate as the Secretary of War may prescribe. During the academic year of 1922–23 this was 30 cents per day, totalling about $178 for the 2 years. In addition, members of the Advanced Course are paid at the same rate of pay as privates of the Regular Army, while in actual attendance at the summer training camp.

Membership in the Corps does not require the student to enter into any agreement to continue in college a definite length of time, nor does it bind him to any military service. He is as much at liberty to leave college as though he were not a member. He is required, once having entered upon the course, to complete it as a requisite toward graduation in any college maintaining a unit of the Corps, and to observe the rules and regulations prescribed for the government of the Corps.

Commissions.—Each year upon the completion of the Advanced Course, all qualified students are tendered commissions in the Officers Reserve Corps.

Summer Camps.—The requirement of members of the advanced course to attend the summer training camps is prescribed from time to time by the Secretary of War. These camps are organized by bringing together members of the R. O. T. C. from several colleges. The training taken at the college is elaborated upon and special attention is paid to

* A deposit of $15 is required of each student registered for Military Science. At the end of the academic year or upon a student's severing his connection with the college, this deposit will be refunded to him upon the satisfactory return to the University of all military property loaned except that a reasonable deduction will be made to cover any damage beyond natural wear and tear or for the loss of any of the equipment.

the practical side of it. The student is furnished transportation to and from the camp and is given an additional clothing allowance, so that his only expenses are for laundry and such other personal expenditures as he may care to make. Excellent food is provided. Moral conditions are carefully controlled by the regular army officers in charge. The health and hygiene of the students is under direct supervision of medical officers and medical attendance is provided for those requiring it while at camp. Athletic contests are a feature of the camp and intercollegiate athletics between members of the different units is encouraged. The student agrees to observe the rules of the camp and to give his best efforts to the course of training. Thus he is offered at no expense an exceptional opportunity for physical and mental development.

Each spring the university unit holds a three day camp of its own. All members of the unit attend this camp. The camp for 1925 will begin Wednesday noon, May 27, continuing not to exceed three days.

MILITARY SCIENCE BASIC COURSE

Infantry

1–a. **Individual and Squad Drill.** The thorough development of the individual into an exact, disciplined soldier. The subject includes the school of the soldier and squad as prescribed in the 1919 Drill Regulations and training regulations. The students perform the duties of privates in the parades and various drills of the battalion. Considerable time is spent in teaching the duties of citizenship. Respect for flag and country and the national anthem is emphasized. Lectures and practical work.

No prerequisites. Required of Freshmen, 1½ credits: 3 periods (2 theory and 1 laboratory).

2–b. **Rifle Marksmanship.** Lectures explanatory of the general scheme and principles. Practical instruction in all the steps of marksmanship as prescribed in the Army Pamphlet, "Rifle Marksmanship." Special attention is given to the following: nomenclature and care of rifles, effects of weather, score book, coaching gallery practice, range practice.

Platoon Drill. A continuation of 1–a but being the theoretical science of drill. The duties of all non-commissioned officers, guides and the junior officers of the company are emphasized.

Military History. An elementary series of lectures to show our military policy to include the Revolution and War of 1812.

Required of Freshmen, 1½ credits: 3 periods (2 theory and 1 laboratory).

3–c. Platoon and Company Drill. A continuation of 2–b. Considerable time is given to extended order, ceremonies, and the higher drill. Discipline, control and order are exacted at all times. Students perform the duties incident to the grades of privates and non-commissioned officers. Opportunity is given every student to perform the duties of the non-commissioned officer or junior company officer.

1½ credits: 3 periods (2 theory and 1 laboratory).

Scouting and Patrolling. Includes the principles governing the composition, formation, and operations of various patrols by day and by night. Relief map exercises as well as those on the terrain give practical instruction.

Required of Freshmen, 1½ credits: 3 periods: (2 theory and 1 laboratory).

Second Year Basic, Infantry

4–a. Military Sketching. Considerable time is given to study of ground forms, critical points and the study of domestic and foreign maps. All mapping and sketching methods are thoroughly covered. The course requires the making by the student of several types of sketches. This course is valuable, not only to the military man but to all who would travel or whose work calls them to estimate areas.

Company and Battalion Drill. A continuation of 3–c. Practical instruction in the duties of non-commissioned officers and officers of the platoon and company in the higher drill. Individual instruction is given and the principles of command and leadership are mastered by all students.

1½ credits: 3 practical periods.

5–b. Infantry Weapons. This course includes a study of the bayonet, the automatic rifle, and the hand and rifle grenades. Lessons on the history, characteristics and use of the weapons are given as well as general lessons covering explosives and the manufacture of weapons.

Musketry. This subject covers the theory of fire, range estimation, target designation, fire distribution, fire discipline (cover, individual

movement, transmission of fire data, signals, replacement of casualties et cetera). Conduct of fire in attack and defense is combined with the duties of leaders. Combat practice is conducted by the use of the new landscape targets.

Leadership. In this course is taken up the psychology of leadership and command. The students taking the course are all non-commissioned officers or officers of the battalion. Not only is the subject taken up in a general way but work is done with each individual and the daily little problems that occur in the military work are disposed of.

1½ credits: 3 periods.

6–c. Command. A practical course in command and leadership. It is a continuation of 5–b. The aptitude of the individual student is carefully considered. The assignments to various duties with the battalion are very carefully planned.

Battalion Drill. This is a continuation of 4–a drill. Ceremonies, extended order, the making and breaking camp and the practical problems taken up in Musketry and Tactics are executed.

Sanitation, Camp Sites, First Aid. This subject includes instruction in personal hygiene, foods and their preparation, drinking water, et cetera. Statistics of this and foreign countries are studied as regards the fundamental importance of being physically, mentally, and morally sound for service. Demonstrations and exercises in first aid are given.

1½ credits: 3 periods.

Junior Year, Infantry

7–a. A study of the Browning Machine Gun, its history, nomenclature, stripping, assembling, drill, direct and indirect fire, night firing, problems. The Light Mortar: description, technique, drill, problems and actual firing. Infantry drill regulations are studied pertaining to the school of the company and battalion; duties of company officers or senior non-commissioned officers.

Prerequisites: 1–a, 2–b, 3–c, 4–a, 5–b, 6–c. 3 credits: 2 recitations; 2 lectures; 1 laboratory.

8–b. Field engineering is the principal subject taught. It includes trench warfare, defensive, offensive, selection of positions, trench types, machine gun and other emplacements, obstacles. Time is devoted to building model bridges and the use of common knots and lashings.

Camouflage general principles and demolition are given some study. Discussion of troop leadership and ability to command is encouraged. Military Law.

3 credits: 2 recitations; 2 lectures; 1 laboratory.

9–c. The one-pounder gun is thoroughly studied. This includes its nomenclature, characteristics, mechanics, kinds of fire, drill and problems. A review is also given of the subjects to be taught at the coming summer camp. Pistol Marksmanship.

3 credits: 2 recitations; 2 lectures; 1 laboratory.

Senior Year, Infantry

10–a. A study of our military history and national policy. This includes lectures, outside readings and various reports. Company administration is taught with the assumption that each student is a company commander; he is required to keep all the necessary records, property accounting and military correspondence exactly as is done in a company orderly room.

Prerequisites: Junior year. 3 credits: 2 recitations; 2 lectures; 1 laboratory.

11–b. This entire subject is devoted to minor tactics. It covers in detail the duties which junior officers of infantry will actually be called upon to perform. A theoretical study is first made then follows practical exercises.

3 credits: 2 recitations; 2 lectures; 1 laboratory.

12–c. Interior guard duty is studied in this subject with special emphasis being placed on the duties of a junior officer as officer of the guard and officer of the day. Terrain exercises are held at this time as it is impossible to hold them during the winter.

3 credits: 2 recitations; 2 lectures; 1 laboratory.

First Year, Coast Artillery

18–a. Individual and Squad Drill. Same as 1–a.

19–b. Instruction in 2nd Class Gunners work for C. A. C. Including:

Cordage and Knots	Mechanical Maneuvers
Guns	Mortars
Shears	Carriages
Explosives	Fuses
Projectiles	Primers
Blocks	Jacks

20–c. Platoon and Company Drill. Same as 3–c.

Second Year, Coast Artillery

21–a. Artillery matériel; standing gun drill; range and position finding drill with moving target; close order infantry drill; ceremonies; duties of non-commissioned officers, military history.

1½ credits: 1½ lectures; 1½ recitations; 1 laboratory.

22–b. Artillery matériel; cordage, blocks and tackles, mechanical maneuvers; range section drill with moving target; close order infantry drill; duties of non-commissioned officers; gallery range, military history.

1½ credits: 1½ lectures; 1½ recitations; 1 laboratory.

23–c. Map reading and sketching; standing gun drill and range section drill with moving target; subcaliber firing with heavy artillery using outdoor range; close order infantry drill; inspection, military history.

1½ credits: 1½ lectures; 1½ recitations; 1 laboratory.

Third Year, Coast Artillery

24–a. Orientation including practice work with transit, plane table and tape; gunnery to include standing gun drill, laying of guns and howitzers, and range section drill with moving target; coast artillery commands; military history; close order infantry.

Elective for Juniors. 3 credits: 2 recitations; 2 lectures; 1 laboratory.

25–b. Motor transportation, including theory of gasoline engines, automobiles and trucks. Gunnery problems; close order infantry drill; duties of officers and non-commissioned officers; military history.

Elective for Juniors. 3 credits: 2 recitations; 2 lectures; 1 laboratory.

26–c. Motor transportation, including practical driving of trucks and tractors; practical gunnery including subcaliber firing with heavy artillery on outdoor range; standing gun drill and range section drill; close order infantry drill; command; military history; ceremonies; small arms range; inspection.

Elective for Juniors. 3 credits: 2 recitations; 2 lectures; 1 laboratory.

Fourth Year, Coast Artillery

27–a. Orientation, gunnery, military law, infantry and coast artillery drill, military history.

3 credits: 2 recitations; 2 lectures; 1 laboratory, 2 hours practical.

28–b. Administration, military policy and history of United States, employment of artillery, practical infantry and artillery drill, military history.

3 credits: 2 recitations; 2 lectures; 1 laboratory, 2 hours practical.

29–c. Artillery drill and commands, practical gunnery, including emplacing guns and firing subcaliber problems, ceremonies, military history.

3 credits: 2 recitations; 2 lectures; 1 laboratory, 2 hours practical.

MINERALOGY

CHARLES JAMES, *Professor*
MR. ———

1–b. Mineralogy. A study of minerals, with special reference to their occurrence and economic value. Mr. ———

Prerequisite: Chemistry 3–c. Required of students in Chemical Engineering. 3 credits: 3 laboratories.

MUSIC

ROBERT W. MANTON, *Director*
MABEL M. REDMAN, *Instructor in Piano*
WALTER M. DALGLISH, *Instructor in Voice*

Major: 27 hours from subjects offered in the Department exclusive of Music 116–a, 117–b, 118–c.

Minor: 27 hours of work chosen from any two subjects in allied fields, i.e., Language and Literature, Architecture (History of) Physics (Accoustics) and Education provided that not less than 9 hours are offered in any one subject.

The courses offered by the Department for a major are of two kinds:

1. Courses which are technical and grammatical in nature and are meant to provide a thorough training for students intending to follow

the musical profession as teachers and composers. These are Music 107–a, 108–b, 109–c, 110–a, 111–b, 112–c, 113–a, 114–b, 115–c, 116–a, 117–b, 118–c, and the applied courses in pianoforte, voice and organ.

2. Courses which treat of the historical, literary and æsthetic side of music and are meant for those who wish to acquire a broad appreciation of the art and to familiarize themselves with the standard works of musical literature. These courses are Music 101–a, 102–b, 103–c, 104–a, 105–b, 106–c, and the educational activities of the Musical Clubs.

Students who intend to take only one course in Music, for the cultivation of musical taste and general knowledge, are recommended to elect either Music 101–a, 102–b, 103–c, or Music 104–a, 105–b, 106–c as best adapted to this end.

It is recommended that students consult the head of the Department as early in their freshman year as possible relative to the best disposition of order of courses in the Major.

3. The third phase is the musical activities which are open to all students interested in the individual organizations. These are the University Band, The Men's Glee Club, The Girl's Glee Club, and the University Orchestra.

THE MUSICAL ACTIVITIES

1. University Band.

Prerequisite: ability to play some band instrument. 2 credits: Upperclassmen. 1½ credits: Freshmen and Sophomores.

2. The Men's Glee Club.

1 rehearsal: 1 credit.

3. The Girls' Glee Club.

1 rehearsal: 1 credit.

4. University Orchestra.

1 rehearsal: 1 credit.

NOTE: In all these activities the educational values will be strongly stressed, the principles of ensemble, solo work, tone production, diction and above all sound musicianship, will be studied and concerts prepared separately and in combination to enhance and vitalize the university life. They may also be called upon to illustrate as the occasion arises the historical and cultural courses of the Department. Attendance at rehearsals will be in accordance with the rule covering class work.

101–a, 102–b, 103–c. The Evolution of Music and General History from the Earliest Times to the Present Day. This is a literary course and instruction is given in the form of lectures. The beginnings of music, systems of notation, beginnings of harmony and counterpoint, the Troubadours and Minnesingers, the Motet and Madrigal, Folk Song, the 17th, 18th, 19th and 20th century composers, modern tendencies are some of the topics treated together with many other phases. This course is open to Freshmen and others and presupposes a little knowledge of the fundamental principles of music. Mr. Manton.

Elective. 2 credits: 2 lectures.

104–a, 105–b, 106–c. The Appreciation of Music. This course will begin with a study of the elements of music such as: rhythm, melody, harmony, constructive formulæ and the musical forms employed in composition for upon the recognition of these depends the approach to intelligent appreciation. Comprehensive illustrations of the great musical literature, not necessarily exhaustive but emphasizing strongly these above principles will be played and jointly analyzed by the instructor and students from the point of view of the listener. This course is open and especially recommended to all students who wish to become familiar with the art of music in its many phases, and gain a wider acquaintance with the masterpieces. Mr. Manton.

Elective. 2 credits: 2 lectures.

107–a, 108–b, 109–c. Harmony, The Grammar of Music. The fundamental principles of the craft of music are embodied in the study of harmony. This course treats of the different chords in their natural and combined relations, triads, seventh and ninth chords with their inversions and resolutions; cadences, chromatically altered chords, augmented chords, suspensions; passing and auxiliary notes, modulation, melody writing, pedal point, etc.

The work consists of exercises on basses and harmonization of given melodies, dictation, etc. This course is open and especially recommended to Freshmen and others and ability to play some instrument will facilitate an understanding of this course. Mr. Manton.

Elective. 2 credits: 2 lectures.

110–a, 111–b, 112–c. Advanced Harmony and Analysis. This course is intended to supplement 107–a—109–c and to lay stress on the many significant innovations found in modern harmony and to give the

student a thorough grounding in preparation for contrapuntal writing. Mr. Manton.

Prerequisite: Music 107–a—109–c. 1 credit: 1 lecture.

113–a, 114–b, 115–c. **Counterpoint and Composition.** Counterpoint is the combining of several melodic voices, a horizontal conception of writing and is essential to all finished craftsmanship. The work will treat of the various orders of counterpoint, the treatment of cantus firmus in different voices, double counterpoint, etc.

The work in composition will include thorough training in detail relating to sentence formation, two and three part forms, inventions, dance forms and the various rondo forms up to sonata form. Mr. Manton.

Prerequisite: Music 107–a—112–c. 2 credits: 2 lectures.

116–a, 117–b, 118–c. **Public School Music, Sight Singing, etc.** This course deals with that part of the theory of music which is absolutely necessary for those who may be called upon to take charge of school singing in connection with their teaching in public schools. It consists of a study of the major and minor scales, keys, the measurement of intervals, teaching of rhythms, the technique of time beating and conducting, etc. Mr. Dalglish.

Elective. 1 credit: 1 lecture.

NOTE: No fee is attached to courses 101–a—118–c inclusive.

PIANOFORTE

22–a, 23–b, 24–c. **Elementary Course.** This course consists of a correct knowledge of such fundamentals as: notation, nomenclature, rhythm, elementary pedaling and technique, principles of phrasing, touches, stress, etc. This is supplemented by studies and simple compositions embodying the above elements and will be adapted to the needs of the individual student. Mrs. Redman.

Elective. 1 lesson.

25–a, 26–b, 27–c. **Intermediate Course.** This course consists of the developing and strengthening of Course 22–a—24–c, together with the fundamentals of freedom and relaxation, rotary and lateral movements, hand adjustments, principles of style, tonal production, uneven rhythms, embellishments, etc. Adapted to the needs of the individual

student and supplemented by interesting and vital pianoforte literature. Mrs. Redman.

Prerequisite: Piano 22–a—24–c or the equivalent. 1 lesson.

28–a, 29–b, 30–c. Advanced Playing, Interpretation, etc. This course presupposes the two previous courses and gives the student a grounding in the higher and more subtle phases of piano playing such as are necessary for finished execution. Advanced technique, bravura playing, individual interpretation, finished hand adjustment and absolute tonal command together with work on musical form and pianistic evolution as applied to recreation will dominate this course. Adapted to the individual needs and supplemented by the master works of pianoforte literature. Mrs. Redman.

Prerequisites: Piano 22–a—27–c. 1 lesson.

NOTE: 22–a—30–c inclusive are fee courses.

VOICE

31–a, 32–b, 33–c. Elementary Course. This course consists of a correct knowledge of such fundamentals as: breath control, resonance, flexibility of voice, attack, enunciation and articulation. It also consists of a practical knowledge of sight singing which enables the student to read and understand his music as fast as the voice acquires the ability to perform the same, supplemented by the correct singing of the simpler form of song or ballad. Mr. Dalglish.

Elective. 1 lesson.

34–a, 35–b, 36–c. Intermediate Course. This course consists of the development of the fundamentals of voice placing such as: breath control, resonance, etc., together with a progressive step in reading made by singing through the different keys. This is supplemented by songs and ballads of medium difficulty, church music, quartet work. Emphasis is placed on dramatic values from the singer's standpoint. Mr. Dalglish.

Prerequisite: Voice 31–a—33–c or the equivalent. 1 lesson.

37–a, 38–b, 39–c. Advanced Course. This course presupposes the two previous ones; furthers the fundamentals of voice placing, aids in the mastery of all modes, intervals and musical phrases; develops the voice and acquires control of it for finished execution. This is

supplemented by a study of the oratorio, opera, and the master works of song. Mr. Dalglish.

Prerequisites: Voice 31–a—36–c. 1 lesson.

NOTE: 31–a—39–c are fee courses.

ORGAN

40–a, 41–b, 42–c. Elementary Course. Manual and pedal technique. Short pieces presenting the fundamentals of registration, use of swells, etc. Mr. Manton.

Prerequisite: Piano 22–a—24–c or the equivalent. 1 lesson.

43–a, 44–b, 45–c. Intermediate Course. The smaller preludes and fugues of Bach; easier works of the modern French masters. Mr. Manton.

Prerequisite: Organ 40–a—42–c. 1 lesson.

46–a, 47–b, 48–c. Advanced Course. Master organ works of Bach: preludes, toccatas and fugues, choral preludes; master works of Cesar Franck, Widor, Vierne and the English and American schools together with a study of adaption, modulation, accompaniment, Gregorian chant, mediæval or modal harmony, conducting, hymnology, etc.; in relation to practical church service work. Mr. Manton.

Prerequisites: Organ 40–a—45–c. 1 lesson.

NOTE: 40–a—48–c inclusive are fee courses.

TUITION

Private instruction in piano, one-half hour lesson a week, $15 a term. Mrs. Redman.

Private instruction in voice, one-half hour lesson a week, $15 a term. Mr. Dalglish.

All tuition is payable at the Business Office at the time of registration.

PHYSICAL EDUCATION

PHYSICAL EDUCATION FOR MEN

WILLIAM H. COWELL, *Professor, Director of Physical Education and Athletics, Head Coach Football and Basketball*
HENRY C. SWASEY, *Assistant Professor of Physical Education and Head Coach Baseball*
HARVEY W. COHN, *Instructor and Coach Cross Country, Relay and Track*
RICHARD GUSTAFSON, *Instructor in Physical Education and Coach of Freshmen Football, Basketball and Baseball*

Aims.—1. To promote regulated exercise, and to provide an incentive and opportunity for every student to receive physical recreation.

2. To secure good posture, a uniform development and a reasonable amount of bodily skill and grace.

3. To stimulate the habit of exercise.

Equipment.—The gymnasium affords accommodation for training and indoor games.

On the ground floor are the lockers and various shower baths.

On the first floor are offices and the main gymnasium hall, which is 90 x 45.

On the second floor is the running track and offices of the athletic director and assistants.

An athletic field adjoins the gymnasium. The field, one of the best in New England, is equipped with a one-fourth mile cinder track, baseball and football field and other necessary features.

Requirements.—All men students in the freshman and sophomore classes are required to complete the prescribed work in Physical Education.

A regulation gymnasium suit, the cost of which is about three dollars, must be worn.

The minimum requirement of each term's work calls for participation in some form of approved physical exercise for at least two periods weekly for 9 weeks.

Students may elect any scheduled activity desired, either as a member of an organized athletic squad or as a member of regular sections of an approved activity which has the greatest appeal for the individual concerned.

The activities which are offered at various times of the year are, baseball, basketball, boxing, cross country, football, hockey, skating, skiing, snow shoeing, swimming, tennis, track, volley ball, indoor baseball and handball.

(*Consult Recreational Activity Booklet for Schedule of Approved Activities.*)

51–a. Physical Education. The program for the term consists of numerous seasonal activities. Students may elect activity desired. For students physically unfit, corrective gym work will be prescribed.

Required of all Freshmen. ½ credit: 2 hours' work.

52–b. Physical Education. Continuation of recreational activity program.

Required of all Freshmen. ½ credit: 2 hours' work.

53–c. Physical Education. Continuation of recreational activity program.

Required of all Freshmen. ½ credit: 2 hours' work.

54–a. Physical Education. Term's program consists of numerous seasonal activities. Students may elect activity desired. For students physically unfit, corrective gym work will be prescribed.

Required of all Sophomores. ½ credit: 2 hours' work.

55–b. Physical Education. Continuation of recreational activity program.

Required of all Sophomores. ½ credit: 2 hours' work.

56–c. Physical Education. Continuation of recreational activity program.

Required of all Sophomores. ½ credit: 2 hours' work.

PHYSICAL EDUCATION FOR WOMEN

MAYME MACDONALD, *Assistant Professor*
MARGARET KING, *Graduate Assistant*

1–a, 2–b, 3–c. Physical Education.

Fall term—hockey, rifle, archery, croquet.

Winter term—bowling, basketball, skiing, snowshoeing, corrective gymnastics.

Spring term—soccer, baseball, track, archery, croquet, advanced swimming, advanced rifle.

Required of Freshmen. 1 credit per term: 2 hours a week.

4–a, 5–b, 6–c. Physical Education.

Fall term—hockey, rifle, archery, croquet.

Winter term—bowling, basketball, skiing, snowshoeing, corrective gymnastics.

Spring term—soccer, baseball, track, archery, croquet, advanced swimming, advanced rifle.

Required of Sophomores. 1 credit: 2 hours a week.

7–a, 8–b, 9–c. Physical Education.

Fall term—hockey, rifle, archery, croquet.

Winter term—bowling, basketball, skiing, snowshoeing, corrective gymnastics.

Spring term—soccer, baseball, track, archery, croquet, advanced swimming, advanced rifle.

Required of Juniors. 1 credit: 2 hours a week.

10–a, 11–b, 12–c. Physical Education.

Fall term—hockey, rifle, archery, croquet.

Winter term—bowling, basketball, skiing, snowshoeing, corrective gymnastics.

Spring term—soccer, baseball, track, archery, croquet, advanced swimming, advanced rifle.

Elective for Seniors. 1 credit per term: 2 hours a week.

13–a. Health Problems. Lectures and discussions on health problems that arise in college. Reference readings and reports.

Required of all Freshmen women. 1 credit: 1 recitation. (Given in 1923–1924 as Personal Hygiene.)

17–b, 18–c. Natural Dancing. The work consists of dancing as based upon full and natural movements. It offers an opportunity for music interpretation and pantomimic dancing.

Elective for Sophomores, Juniors, and Seniors. 1 credit per term: 2 hours a week.

19–a, 20–b, 21–c. Methods in Physical Education. The lecture hours deal with subject-matter in physical education in the elementary and high schools with reference to development and needs of the child. The class will have practice in selecting and teaching material. Games, athletics, dances, formal and natural gymnastics, will furnish material.

The course is open to Juniors and Seniors, men and women who have completed at least one course in Education. 2 credits per term: 2 hours a week.

PHYSICS

HORACE L. HOWES, *Professor*
CLEMENT MORAN, *Assistant Professor*
RAYMOND R. STARKE, *Instructor*

Major: 27 hours of Physics 6–a, 7–b, 8–c, 9–a, 10–b, 11–c, 13–c, 15–b, and 25–c.
Minor: 27 hours of Chemistry and Mathematics, subject to the approval of the Department of Physics.

1–a, 2–b, 3–c. Introductory Physics. The properties of matter, mechanics, heat, magnetism, electricity, wave-motion, sound and light. The subject consists of experimental lectures, recitations and laboratories. Certain references to Kimball's "College Physics" are required. Mr. Howes, Mr. Moran, Mr. Starke.

Required of Sophomores in the Agricultural Course in the first two terms. Elective for Arts and Science students. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

6–a, 7–b, 8–c. General Physics. Mechanics and properties of matter the first term, followed by heat and a brief survey of sound and light the second term; magnetism and electricity the third term. Theory and problems pertaining. Mr. Howes, Mr. Moran, Mr. Starke.

Prerequisites: Mathematics 201–a, 202–b, 203–c, and Mathematics 7–a, 8–b, and 9–c either as prerequisites or as parallel subjects. Required of Sophomores in Electrical and Mechanical Engineering and the Industrial and Architectural Construction courses. Required of Juniors in Chemical Engineering. Elective for those Arts and Science students who have the above requirements in Mathematics or their equivalent and it is advised for those who have not had high school Physics that the Introductory Physics be elected the year preceding General Physics. 3 credits: 3 recitations.

9–a. General Physics Laboratory. Open only to students who are studying Physics 6–a or who have previously obtained credit in Physics 6–a. Experiments in mechanics and properties of matter with individual written reports on each experiment carefully criticized. The development of laboratory technique, the ability to appreciate the relative magnitudes of sources of error, and the appreciation of the physical laws when plotted as graphs is the aim. Mr. Moran, Mr. Starke, Mr. Howes.

Prerequisites: Mathematics 203–c, and Physics 6–a, either as prerequisite or as parallel subjects. Required of Sopho-

mores in Electrical and Mechanical Engineering and in the Industrial and Architectural Construction Courses, and of Juniors in Chemical Engineering. Elective for Liberal Arts students under the same conditions as specified for Physics 6–a. 3 credits: 2 laboratories.

10–b. General Physics Laboratory. A continuation of 9–a to include experiments in heat, sound and light. Mr. Moran, Mr. Starke, Mr. Howes.

Prerequisites: Physics 6–a and 9–a. Physics 7–b must precede or accompany this subject. 3 credits: 2 laboratories.

11–c. General Physics Laboratory. A continuation of 10–b to include experiments in electricity and magnetism. Mr. Moran, Mr. Starke, Mr. Howes.

Prerequisites: Physics 6–a, 7–b, 9–a, 10–b. Physics 8–c must precede or accompany this course. 3 credits: 2 laboratories.

13–c. Elementary Optics and Photography. Lectures and recitations on the fundamental principles of geometrical optics as applied to photographic instruments. The laboratory is devoted to the study of focal planes, images and general properties of lenses, together with considerable work in the taking and finishing of photographs. Students will furnish their supplies. Mr. Moran.

Prerequisites: Physics 1–a, 2–b, 3–c or the equivalent. This subject is not open to Freshmen. 3 credits: 2 lectures; 1 laboratory.

15–b. Theory of Electrons. A study of the theory of electricity, to include a study of the passage of a current through a gas by gaseous ions, the mobility of ions, the determination of the charge of an electron, the ratio of charge to mass, ionization by collision, the corona discharge, cathode rays, positive rays, thermionic emission, photo-electricity, X-rays. Mr. Howes.

Prerequisites: Physics 6–a, 7–b, 8–c, 9–a, 10–b, 11–c. Mathematics 7–a, 8–b, 9–c. Open to Juniors and Seniors only. 3 credits: 2 lectures; 1 recitation.

25–c. Advanced Physics for Teachers. Theory and problems from a standard college text. The aim is to study a few of the most difficult topics to teach. The laboratory will include work on the making and repair of the simpler forms of apparatus. Mr. Howes and Mr. Moran.

Prerequisites: Physics 1–a, 2–b, 3–c, or 6–a, 7–b, 8–c. Open to Juniors and Seniors only. 3 credits: 2 recitations; 1 laboratory.

32–a, 33–b, 34–c. **Household Physics.** A study of the principles with applications to household appliances and processes. Mr. Moran.

Required of Sophomores in Home Economics. Not open to Freshmen. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

POULTRY HUSBANDRY

ALTON W. RICHARDSON, *Professor*
PERLEY I. FITTS, *Instructor*
FRANCIS L. MCGETTIGAN, *Instructor*
HARRY J. BENNETT, *Instructor*

1–a. **Farm Poultry.** A general subject in poultry husbandry, taking up the breeds, housing, incubation, brooding, feeding, breeding, culling and selection, and management. Mr. Richardson and Mr. Fitts.

Required of Sophomores in Agriculture. 3 credits: 2 lectures; 1 laboratory.

3–b, 4–c. **Home Poultry for Girls.** A subject designed to aid in giving a practical knowledge of poultry to girls who are taking the course in Home Economics and also to any girls in the Arts and Science courses who may be interested. Mr. Richardson.

3 credits: 2 lectures; 1 laboratory.

5–a. **Poultry Management.** A subject in poultry management in which the students lay out plans for, and make drawings of, a 1,000-bird poultry plant, taking into consideration every phase of management. Mr. Richardson.

Prerequisites: Poultry 1–a, or 3–b, or 4–c. Required of all Poultry students; elective for others. 4 credits: 3 lectures; 1 laboratory.

6–b. **Poultry Diseases.** A subject treating of the anatomy of fowl, with clinics showing various common poultry diseases, and lectures giving methods of prevention and cure. Mr. Richardson.

Prerequisites: 1–b, or 3–a, or 4–b. Required of all Poultry students; elective for others. 3 credits: 3 lectures.

7–b. **Incubation.** A study of the theories involved in incubation and brooding, with each student running an incubator, keeping all the

necessary records, and taking care of a brood of 400 chicks. Mr. Richardson and Mr. Fitts.

Prerequisites: Poultry 1–a, or 3–b, or 4–c. Required of all Poultry students; elective for others. 4 credits: 3 lectures; 1 laboratory.

8–a. Poultry Seminar. A seminar subject where each student studies recent bulletins on poultry subjects, writes abstracts of them, and delivers to the class an opinion on these bulletins. An opportunity is given for students to do some research work. Mr. Richardson.

Prerequisites: Poultry 1–a, or 3–b, or 4–c. Required of all Poultry students; elective for others. 3 credits: 3 lectures.

9–c. Poultry Feeding. A subject dealing with the principles of feeding, and the comparative value of various grains and feeds used in poultry feeding. Each student is obliged to do practical work in feeding and caring for a flock of 500 hens. Mr. Richardson and Mr. Fitts.

Prerequisites: Poultry 1–a, or 3–b, or 4–c. Required of all Poultry students; elective for others. 3 credits: 2 lectures; 1 laboratory.

10–a. Poultry Breeding. A subject giving the theory and practice involved in breeding for egg production, including practical work in the selection of breeding stock. Mr. Fitts.

Prerequisites: Poultry 1–a, or 3–b, or 4–c. Required of all Poultry students; elective for others. 2 credits: 2 lectures.

11–b. Poultry for Teachers. This subject is designed to give to Teacher Training students the information which they will need in teaching Poultry in secondary schools. Open to Teacher Training students only. Mr. Richardson.

2 credits: 1 lecture; 1 laboratory.

12–c. Poultry Brooding. This is a laboratory subject designed to give to Teacher Training students special information in the care and management of a brood of chicks. Open to Teacher Training students only. Mr. Fitts.

1 credit: 1 laboratory.

13–c. Poultry Practice. This subject is designed to give the student practical work at a successful poultry plant, somewhere in the state of New Hampshire, in the hatching and rearing of chickens. The

student will be obliged to spend the time from April 1 to September 1 on a poultry plant to be selected by the head of the department.

Required of all Poultry students. Credit: 18 hours.

14–a, 15–b, 16–c. **Poultry Research.** In this subject the student makes a study of some poultry problem, getting such accurate and detailed information as will add materially to his fund of knowledge. Mr. Richardson and Mr. Fitts.

Required of all Poultry students. 3 credits per term: time to be arranged.

17–a. **Poultry Marketing.** A study of the market classes of poultry and eggs, their preparation for market, packages used, the storage of poultry, the storage and preservation of eggs and the judging and scoring of eggs and poultry.

Required of Poultry Husbandry Juniors; elective for others. 3 credits.

22–c. **Poultry House Design and Construction.** In this subject the students design and build a hen house. This house is to be used each year by some student who wishes to keep hens while at the college or who wishes to grow a brood of chicks to be sent home at the end of the college year. Mr. Fitts.

Required of all Poultry students; elective for others. 1 credit: 1 laboratory. (Given as 15–c prior to 1922–23.)

SHOPS

CALVIN H. CROUCH, *Head of Department*
LYMAN J. BATCHELDER, *Instructor in Wood Working*
NORMAN S. ATKINSON, *Instructor in Forging*
GEORGE W. A. BUTTERS, *Instructor in Machine Shop*

1–a, –b, 2–b, –c. **Wood Work.** Instruction in the care and use of wood-working tools and machinery, saw filing, plain pattern making. Mr. Batchelder.

Required of Freshmen in Electrical, Mechanical and Industrial Engineering courses. 2 credits: 2 laboratories.

3–a, –c. **Wood Work.** Plain cabinet making. Mr. Batchelder.

Required of all Freshmen in Industrial courses. 2 credits: 2 laboratories.

4–a. **Wood Work.** Architectural and cabinet wood turning, spindle, chuck and face plate work. Mr. Batchelder.

Required of Freshmen in Architectural Construction. 2 credits: 2 laboratories.

5–b. Wood Work. Advanced cabinet making and finishing, the use of stain, filler, shellac, and varnish as used in cabinet finishing and interior wood work. Mr. Batchelder.

Required of Freshmen in Architectural Construction. 2 credits: 2 laboratories.

6–c. Wood Work. Carpentry and building, including the laying out of foundations, the construction of buildings, a study of the steel square and its use in the laying out of rafters, stair stringers, trusses, etc. Also a study of the common woods used in building and cabinet work. Mr. Batchelder.

Required of Freshmen in Architectural Construction. 2 credits: 2 laboratories.

7–c. Wood Shop. Instruction in the care and use of tools in farm carpenter shop; saw filing; the making of various implements used on the farm; farm carpentry; use of steel square; laying out framing; care of lumber on the farm. Mr. Batchelder.

Elective for Juniors in Agriculture. 2 credits: 2 laboratories.

8–a, –b. Practice Teaching. Exercises, under supervision of the instructor, in teaching manual training in wood shop. Mr. Batchelder.

Elective for Seniors in the Industrial Course. 2 credits: 2 laboratories.

9–b. Wood Work. Advanced cabinet making. Mr. Batchelder.

Prerequisite: Shop 5–b. 2 credits: 2 laboratories. Elective for Juniors or Seniors in Industrial courses for training teachers.

10–c. Wood Work. Advanced pattern making, involving split and loose piece patterns, core boxes, etc. Mr. Batchelder.

Elective for Seniors in Mechanical and Electrical Engineering. 2 credits: 2 laboratories.

31–a, –b, –c. Forging. This is a study of the operations necessary in the forging of iron and steel, and is designed to teach the methods of drawing, upsetting, welding, twisting, splitting, and punching of iron; also the hardening, tempering, and annealing of steel, and the case hardening of mild steel as adapted to engineering work. Mr. Atkinson.

Required of Freshmen in Mechanical, Electrical and Industrial Engineering. 2 credits: 2 laboratories.

32–b. Forging. This is a study of the forging of iron and steel, and is designed to teach the operations of drawing, upsetting, welding, twisting, splitting, and punching of iron; the hardening, tempering, and annealing of steel; and the case hardening of mild steel as adapted to agricultural work. Mr. Atkinson.

Required of Juniors in Agricultural Teachers Training course. 3 credits: 3 laboratories.

33–b. Forging. Advanced work in forging, welding, tempering, case hardening, tool dressing and heat treatment of steels. Mr. Atkinson.

Prerequisite: Forging 31–a, –b, –c. 2 credits: 2 laboratories.

51–a, –b, 52–b, –c, 53–c, –a. Machine Work. Exercises in bench work, chipping, filing, and scraping, and the laying out of work from drawings. A study of cutting edges and tool adjustments, together with a study of the cutting speeds and feeds on lathes, drill presses, etc. Practice in operating machine tools, and simple lathe work. Mr. Butters.

Required of Sophomores in Teacher Training, Mechanical, Electrical and Industrial Engineering Courses, Engineering. 2 credits: 2 laboratories.

54–a, 55–b, 56–c. Machine Work. Advanced lathe work; also practice in the use of the milling machine, planer, shaper, and grinder, and the manufacture of some machine, using more advanced methods and special tools. Mr. Butters.

Required of Seniors in the Industrial Course. 2 credits: 2 laboratories.

57–b, 58–c. Machine Work. Advanced machine work, time study, production methods and shop management. Mr. Butters.

Prerequisite: Shop 55–b. 2 credits: 2 laboratories.

60–c. Machine Work. An elementary study of the operation of the principal machines suited to the chemist's needs. Mr. Butters.

Required of Juniors in Chemical Engineering. 3 credits: 3 laboratories.

SOCIAL SCIENCE

This subject has been organized to acquaint students with the broad field of social science. The need is recognized for an introductory subject surveying the whole field of these sciences before the students are

given an opportunity to pursue work in any of the more specialized fields of political science, sociology, history, education, and economics. In order to insure a common background for a further detailed study in related subjects, the following subjects are planned under the general supervision of the Dean of the College of Liberal Arts. In the case of Liberal Arts students entering as Freshmen in September, 1923 or 1924, the subjects here listed are prerequisite for any work catalogued in history, political science, sociology, education, and economics.

Social Science 1–a, 2–b, 3–c. Introduction to Social Science. The main factors of social progress will be considered: namely, population, geographic, biologic, genetic, hygienic, economic, political, historical, ethical, esthetic, intellectual, religious, and associative.

Required of Freshmen as prescribed on page 72. Elective for Sophomores. 3 credits: 3 periods.

SOCIOLOGY

ALBERT N. FRENCH, *Professor*
PHILIP B. PASQUALE, *Instructor*

Major: 27 hours from subjects offered in the department.

Minor: 27 hours of work chosen from any two subjects in allied fields i.e. Literature, Biology, Psychology, Education or a Social Science including History, provided that not less than 9 hours is offered in any one subject.

This department is primarily interested in general culture—in civic training, social ethics, social philosophy, social economics as aspects of social well-being. Vocationally limited opportunities are afforded to such majors as are inclined to follow certain specialized lines of social service.

Initial Subjects—Group A

2–c. Communities and Territorial Groups. An historical study of problems in social relations, in social change, in community organization, etc. A comparative study of the rural community and its problems, the city and its areas, communal organizations and human geography.

3 credits: 3 recitations. Social Science 1–a, 2–b, 3–c is desirable as a prerequisite.

3–c. Problems in Rural Sociology. A study of certain insistent problems, conditioning factors and influences of country life followed by

a preliminary survey of remedial measures—social amelioration through community organization and rural leadership.

3 credits: 3 recitations. Social Science 1–a, 2–b, 3–c is desirable as a prerequisite.

14–a, 15–b, 16–c. Principles of Sociology and Social Problems. A systematic and intensive study of certain fundamentals of general sociology like social contacts, social interactions, etc.; as they are based on human nature; followed by a study of conflict, coöperation, etc., as aspects of collective behavior.

Required of all majors in Sociology.
Prerequisite: Social Science 1–a, 2–b and 3–c. 3 credits: 3 recitations.

Secondary Subjects—Group B

Prerequisites: Junior standing or 9 hours of "initial subjects" (Group A) preferably 9 hours of Principles of Sociology 14–a, 15–b and 16–c.

17–a. Social Psychology. A study of human traits in so far as these are basic to a study of social personality and social psychology.

Required of all majors. 3 credits: 3 recitations.

18–b. Educational Sociology and Social Philosophy. A study of educational theory based on social principles.

3 credits: 3 lectures. (Not given in 1924–25.)

19–c. Primitive Culture and Social Change. A comparative study of social origins, of theories of human society, of social change and of adaptive culture.

3 credits: 3 recitations.

20–c. Social Ethics. A study of social ethics, social pathology and social engineering.

3 credits: 3 lectures.

21–b. Social Theory. A comparative study of theories of society in the light of social history.

3 credits: 3 lectures. (Not given in 1925–26.)

Advanced Subjects—Group C

Prerequisites: Senior or graduate standing. A satisfactory average in 18 hours of well distributed courses in Groups A and B.

30–a, 31–b, 32–c. Seminar—Sociological Research. Provision is here made for limited field investigations and for library research.

1 credit: 1 seminar period or conference. Extra credit for field work, library research or thesis when duly authorized. 31–b is professional research (Methods of Teaching Social Science).

35–a. Social Amelioration. A practical social survey course inclusive of field and library research. Field trips to Boston Social Centers, Settlements, etc.

1 credit: 1 recitation or conference. Extra credit when duly authorized.

36–b. Population Problems. An investigation of the trend of population, inclusive of a comparative study of underlying theories.

1 credit: 1 recitation or conference.

37–c. Practicum—Methods of Investigation. Inclusive of studies in one or more of the fields of statistics and graphic representations, mental and social measurements, case studies, mental and social hygiene, psycho-analysis, etc. (See Education 6–c.)

Given in coöperation with other Departments.
Prerequisite: graduate standing.
1 credit: 1 recitation or conference.
Extra credit when duly authorized.

ZOÖLOGY

C. Floyd Jackson, *Professor*
Alma D. Jackson, *Instructor*
Herbert M. Emery, *Instructor*
Edythe M. Tingley, *Assistant*

Major: 27 hours in Zoölogy, exclusive of the first year's work.

Minor: 9 hours Chemistry, and 9 additional hours in each of two of the following subjects: Psychology, Physics, Botany, Sociology.

Courses in the Department of Zoölogy are divided as follows:

Group A is primarily for Liberal Arts students, pre-medical students, and those majoring in Zoölogy. Students from other courses may, however, elect from this group, provided they have the proper prerequisites.

Group B includes the required subjects in Agriculture and Home Economics, as well as certain other electives for either Agriculture, Home Economics or Liberal Arts students.

Group C gives a list of Graduate subjects which will be recognized as major or minor work for a master's degree.

NOTE: Students desiring to prepare for Medical or Dental Schools, will consult the head of the department.

Group A. Liberal Arts Subjects

1–a, 2–b, 3–c. Principles of Zoölogy. An elementary study of the principles of life, its development, structural basis and physiological activity. The subject is continuous throughout the year. This subject is intended to give a practical knowledge of animal life, and is required of all pre-medical students and others intending to major in the Department of Zoölogy. Students are strongly advised to carry the laboratory work (Zoölogy 4–a, 5–b and 6–c) parallel with this subject. Mr. Jackson.

Freshman subjects. 3 credits: 3 lectures.

4–a, 5–b, 6–c. Elementary Laboratory. Laboratory exercises for the purpose of demonstrating the principles discussed in Zoölogy 1–a, 2–b and 3–c. A much clearer conception of life phenomena will be gained if the laboratory work is carried parallel to the lectures. Mr. Jackson and Assistant.

Prerequisite: Zoölogy 1–a, 2–b, 3–c, carried as parallel subjects. Freshman subject. 1 credit: 1 laboratory.

7–a, 8–b, 9–c. Comparative Physiology. A detailed study of human anatomy and physiology, compared briefly with the anatomy and physiology of lower animals. This subject is intended to give a practical knowledge of the human mechanism and its method of operation. Students are strongly advised to carry the laboratory work (Zoölogy 10–a, 11–b and 12–c) parallel with this subject. Mr. Jackson.

Prerequisite: Zoölogy 3–c. Required of all pre-medical students. Sophomore subject. 3 credits: 3 lectures.

10–a, 11–b, 12–c. Physiological Laboratory. Laboratory exercises for the purpose of demonstrating the principles in Comparative Physiology (Zoölogy 7–a, 8–b and 9–c). The laboratory work should be carried parallel with the lectures when possible. Mr. Jackson and Assistant.

Prerequisite: Zoö'ogy 7–a, 8–b, 9–c, carried as parallel subjects. Sophomore subject. 1 credit: 1 laboratory.

13–a, 14–b, 15–c. Hygiene and Sanitation. A detailed study of the principles of health preservation. This subject is continuous throughout the year and should, if possible, be preceded by work in Physiology, although that subject is not a prerequisite. Mr. Jackson.

Prerequisite: Zoölogy 3–c except for Juniors and Seniors. 3 credits: 3 lectures.

16–a, 17–b, 18–c. Evolution and Genetics. Lectures and Assignments dealing with the various problems of evolution and their relation to human life. Evidence of man's origin based on anatomical, embryonic and paleontological data will be discussed. A special emphasis will be given to the racial identity, origin and derivation of the English-speaking people. Work in evolution should, if possible, be preceded by a study of Comparative Physiology (Zoölogy 7–a, 8–b and 9–c). Mr. Jackson.

Prerequisite: Zoölogy 3–c except for Juniors and Seniors. 3 credits: 3 lectures.

19–a, 20–b, 21–c. Advanced Zoölogy. Arranged to suit the need of students who wish to specialize in Zoölogy. One lecture a week will deal with the teaching of Zoölogy, methods of presenting the subject both in high schools and colleges; methods of conducting laboratory classes; the grading of examination papers; and the preparation of laboratory material. In addition students may choose for laboratory work some special subject for investigation as noted below.

Prerequisites: This subject may not be elected except by students who have completed at least 18 hours in Zoölogy or Entomology with an average grade of at least 80; and then only on the presentation of a detailed outline of the problems they wish to study. The subject is primarily for graduate students. Open only to students by special permission. Credit and hours to be arranged.

22–a, 23–b, 24–c. Research Work. Open only to graduate students with the following fields as major work:

a. Taxonomy of limited groups of invertebrate and vertebrate animals. In this work the student will have the coöperation of the specialists connected with the Boston Society of Natural History and will be expected to confer with these men as often as necessary.

b. Comparative Anatomy of limited groups depending upon local forms.

c. Ecological Problems of local restricted areas.

Prerequisites: Degree of B.S. or B.A. Credit and hours to be arranged.

25–a, –b, –c. Thesis. A thesis on some approved topic is required of all graduate students majoring in Zoölogy.

Prerequisites: Degree of B.S. or B.A. Credit and hours to be arranged.

Group B. Agricultural and Home Economics Subjects

30–a, 31–b. General Zoölogy. A detailed study of the fundamental principles of life; the nature and physiology of protoplasm; the structure of the cell and the processes of cell division. The structure and physiology of man will be discussed in detail. Mrs. Jackson and Mr. Emery.

Required of Freshmen in Agriculture. Open only to students of this division. 3 credits: 2 lectures; 1 laboratory.

32–c. Systematic Zoölogy. A detailed study of the classification of animals, their characteristics, habits and habitat, and the methods of identification. This subject should be elected by all students who intend to teach Zoölogy in the high school. Mrs. Jackson.

No prerequisites. Freshman subject. 3 credits: 2 lectures; 1 laboratory.

33–a, 34–b, 35–c. Human Anatomy and Physiology. A survey of the structure and function of the human body, with a study of the fundamental principles of hygiene as applied to the different systems. Collateral readings, written reports and conferences required. Miss Tingley.

Required of Sophomores in Home Economics. Not open to students having credit in 2–b and 3–c. 3 credits: 2 lectures; 1 laboratory.

36–a, 37–b, 38–c. Histology. A detailed study of the structure of the tissues of vertebrate animals, cell specialization and the manner in which tissues are combined into organs. The subject is primarily for students intending to teach Zoölogy, a great deal of attention being paid to preparing microscope slides and general histological technique. Mrs. Jackson.

Prerequisites: Zoölogy 3–c or 35–c. Junior subject. 3 credits: 1 lecture; 2 laboratories.

39–a, 40–b, 41–c. Embryology. A detailed study of the invertebrate and vertebrate embryo, its method of development, and the relation of the embryo to the parent. The work will be prefaced by the study of the details of cell structure, oögenesis, spermatogenesis, fertilization and

segmentation; thus tracing the gradual development of the embryo from the single cell to maturity. The laboratory work will be primarily with the frog and chick embryo. The lectures will include human embryology. Mrs. Jackson.

Prerequisites: Zoölogy 3–c or 35–c. Junior subject. 3 credits: 2 lectures; 1 laboratory.

42–b. Physiology of Nutrition. An advanced subject in the nature and physiology of nutrition. The anatomy and physiology of the alimentary tract and the allied organs of digestion will be discussed in detail. The work will consist of lectures, assigned topics and laboratory experiments on digestion. Mrs. Jackson.

Prerequisite: Open only to Juniors and Seniors having at least 9 hours credit in Zoölogy. Elective for Juniors and Seniors. 3 credits: 2 lectures; 1 laboratory.

43–c. Physiology of Circulation and Respiration. An advanced subject in the nature and physiology of the organs of circulation and respiration. The subject will consist of lectures, assigned topics and laboratory experiments on the circulatory and respiratory processes within the body. Mrs. Jackson.

Prerequisite: Open only to Juniors and Seniors having at least 9 hours credit in Zoölogy. Elective for Juniors and Seniors. 3 credits: 2 lectures; 1 laboratory.

45–a. Comparative Anatomy of the Vertebrates. A study of the detailed anatomy of typical vertebrates. This is a fundamental course for pre-medical students or those interested in advanced Zoölogy.

Prerequisites: Zoölogy 1–a, 30–a or 33–a. Junior subject. 3 credits: 3 laboratories.

Group C. Graduate Subjects

Subjects which will be recognized as major or minor work for a Master's Degree.

Zoölogy 13–a, 14–b, 15–c. Hygiene and Sanitation. This subject accepted for minor only under the following conditions: (1) a mark of 85 must be obtained; (2) an additional thesis required for each term's work.

Zoölogy 16–a, 17–b, 18–c. Evolution and Genetics. Major or minor credit with a mark of 80 and additional thesis for each term's work.

Zoölogy 19–a, 20–b, 21–c. Advanced Zoölogy. Major or minor credit.

Zoölogy 22–a, 23–b, 24–c. Research Work. Open only to graduate students.

Prerequisites: Degree of B.S. or B.A. Credit and hours to be arranged.

Zoölogy 25–a, –b, –c. Thesis. A thesis on some approved topic is required of all graduate students majoring in Zoölogy.

Prerequisites: Degree of B.S. or B.A. Credit and hours to be arranged.

Zoölogy 36–a, 37–b, 38–c. Histology. Credit for major or minor only with mark of 80 and additional laboratory work.

THE TWO-YEAR COURSE IN AGRICULTURE

FREDERICK W. TAYLOR, *Dean*

The University offers a two-year course in Agriculture, established in 1895 for the purpose of affording an opportunity for the boys of the state to acquaint themselves with the fundamental principles and with the latest and most approved practices of agriculture. This course is arranged especially for the young men who wish to make a business of dairying, livestock raising, poultry, horticulture or general farming, but who do not have the time, money or preparation to take a regular four-year course.

The classes of the two-year course are separate and distinct from those of the four-year courses. The work of the first year is in part a study of the sciences like chemistry, botany and physiology which underlie successful plant and animal production. In short, the student is made to understand the scientific reasons for our common farm practices. The second year contains numerous elective subjects which make it possible for students to spend at least a third of their time in specializing along some particular line of work in which they expect to engage later on.

The two-year course consists of two terms of twelve weeks each for two years. Students may enter at the beginning of any term, although we advise them to enter only at the beginning of the course in January. The course closes each year at Commencement time in June, which enables the student to have about six months in which to earn money for his second year's work.

The work of this course is made as thorough and practical as the limited time will permit. The students are given practice in both the laboratory and in the field in doing the very things which are taught them in the classroom. At least ten hours per week are devoted to practical work in the shops, the orchard and gardens, the barns, the poultry plant or the woods.

Military Art is not required of two-year students, but any student desiring to take this subject may elect it with the four-year students.

Entrance Requirements.—The two-year course is open to both young men and young women. The only entrance requirements are a common school education involving a reasonable knowledge of reading, writing, spelling, arithmetic, English grammar, geography and United States history. The course is best adapted to students from 17 to 21 years of

age. Older students frequently take the course, but younger ones are not encouraged to enter.

Tuition and Fees. The tuition for students who are residents of New Hampshire is $50 per year and the general fees are $35. For out-of-state students the tuition is $100 per year, with general fees of $35. One-half the tuition and $20 of the fees is payable at the beginning of the winter term; the other half and $15 of the fees at the beginning of the spring term.

Scholarships.—The University grants to residents of the state a limited number of scholarships which cover the tuition charges, but not the general fees. Students desiring to secure scholarships should apply to the secretary of their local grange or write to the Dean of the Faculty, Durham, N. H.

Expenses.—The expenses of this course will vary with the tastes and frugality of the students. An estimate of the expenses for one year is as follows:

	High	Average	Low
Tuition	$100		
Fees	35	$ 35	$ 35
Books	20	15	10
Room	60	50	40
Board	140	120	100
Laundry	20	15	10
Incidentals	30	20	10
	$405	$255	$205

Farm Experience Requirement.—In order to graduate from this course every student must present satisfactory evidence of having had practical experience in farm work, either through having worked on a farm for at least two years after he was 12 years of age, or through having worked on a farm for at least four months after he was 15 years of age.

Opening—Closing.—The course for this year will open Friday, January 2, 1925, and will close Tuesday, June 23, 1925. A Spring recess of ten days is given.

Certificate of Graduation.—No degree is given at the end of this course, but a "Certificate of Graduation" is presented to all students who complete the prescribed course or its equivalent.

TWO-YEAR COURSE IN AGRICULTURE

TWO-YEAR COURSE OF STUDY

First Year	*First Term ("B")*	*Second Term ("C")*
Eng. 201–b, 202–c (*Grammar and El. Composition*)	3	3
Bot. 201–b (*Elements of Botany*)	3	
Bot. 202–c (*Fungus Diseases of Plants*)		2
Chem. 201–b, 202–c (*Chemistry*)	3	3
D. H. 201–b (*Farm Dairying*)	3	
Hort. 201–c (*Fruit Growing*)		3
Zoöl. 201–c (*Physiology and Hygiene*)		3
A. H. 201–b (*Types and Breeds*)	4	
Draw. 201–b (*Agricultural Drawing*)	2	
Shop 202–c (*Forge*)		1
Shop 201–c (*Wood Work*)		2
P. E. 52–b, 53–c (*Physical Education*)	½	½
	18½	17½

Second Year		
Agron. 201–c (*Farm Equipment*)		3
Agron. 203–b (*Soils*)	3	
Agron. 202–c (*Field Crops*)		3
For. 201–c (*Farm Forestry*)		3
P. H. 201–b (*Farm Poultry*)	3	
Ent. 201–b (*Economic Entomology*)	3	
P. E. 55–b, 56–c (*Physical Education*)	½	½
Electives from subjects listed below	8½	8½
	18	18

Electives		
A. H. 203–b (*Anatomy of Farm Animals*)	3	
D. H. 202–c (*Milk Production*)		3
D. H. 203–c (*Butter making*)		3
Hort. 202–c (*Vegetable Gardening*)		3
Hort. 203–b (*Greenhouse Management*)	3	
Hort. 207–b (*Advanced Horticulture*)	3	
Hort. 209–c (*Beekeeping*)		3
Agron. 204–b (*Manures and Fertilizers*)	3	
Agron. 205–b (*Farm Management*)	3	
A. H. 202–b (*Feeds and Feedings*)	3	
A. H. 204–c (*Animal Diseases*)		3
A. H. 205–c (*Animal Breeding*)		3
D. H. 204–b (*Market Milk*)	3	
D. H. 205–b (*Cheese and Ice Cream*)	4	
Hort. 204–b (*Home Decoration*)	3	
Hort. 205–b (*Orchard Problems*)	3	
Hort. 206–c (*Small Fruits and Plant Propagation*)		3
Hort. 208–c (*Advanced Horticulture*)		3
P. H. 202–c (*Farm Poultry*)		3
P. H. 203–b (*Poultry Disease*)	3	
P. H. 204–c (*Poultry Feeding*)		3

*DESCRIPTION OF SUBJECTS OF TWO-YEAR COURSE IN AGRICULTURE

FREDERICK W. TAYLOR, *Dean*

AGRONOMY

201–c. Farm Equipment. This subject will include the mapping of farms, leveling for drains, a study of farm implements and of farm buildings. Practical exercises are given in map making, laying out drains, comparing farm machines, rope splicing, etc. Mr. Taylor.

Required second year. 3 credits: 2 recitations; 1 laboratory.

202–c. Field Crops. Lectures and recitations on the culture, uses and value of the field crops grown in New England. Laboratory practice will include seed testing, seed identification, corn and potato judging, hay judging, and a study of the different legumes, grasses and grains.

Required second year. 3 credits: 2 lectures; 1 laboratory.

203–b. Soils. Text-book and recitations upon the physical and chemical properties of soils. The subject will be made as practical as possible in its application to farm work. Laboratory experiments will be performed to illustrate the principles studied. Mr. Eastman.

Required second year. 3 credits: 2 recitations; 1 laboratory.

204–b. Manures and Fertilizers. Text-book and recitations upon the constituents of farm manures, the home-mixing of fertilizers, and the modifications required by different soils and crops. Mr. Taylor.

Elective second year. 3 credits: 3 lectures.

205–b. Farm Management and Accounting. Text-book, lectures and recitations upon different types of farming, size of farms, cropping systems, livestock problems, marketing farm products, choice of a farm, and farm records and accounts. Practical work in laying out farms, keeping cost accounts on farms, and analyzing and organizing the farm business. Mr. Eastman.

Elective second year. 3 credits: 2 lectures; 1 laboratory.

* Only Two-Year students in Agriculture are admitted to these subjects, except by special arrangement with the dean.

ANIMAL HUSBANDRY

201–b. Types and Breeds of Livestock. A study of the different breeds of horses, cattle, sheep, and swine in respect to their origin, history, development, characteristics, and adaptability to different conditions of climate and soil. One afternoon each week is devoted to judging the different breeds. Mr. Tirrell.

Required first year. 4 credits: 3 lectures; 1 laboratory.

202–b. Feeds and Feeding. An elementary study of the laws of nutrition, the character, composition, and digestibility of feed stuffs, and the methods of feeding different kinds of farm animals. Numerous samples of grains and by-products are used for the purpose of familiarizing the students with the different feed stuffs. Practice is given in calculating rations for various purposes. Mr. McNutt.

Required second year. 3 credits: 2 recitations; 1 laboratory.

203–b. Anatomy of Farm Animals. Lectures and recitations upon the form and structure of the domesticated animals. Skeletons, various anatomical specimens, models, charts, and lantern slides are used to make the subject as practical as possible. The purposes of this subject are to show the relation between the skeleton and the form and function of the animal, and to serve as a foundation for the intelligent study of animal diseases and ailments. Mr. Tirrell.

Elective. 3 credits: 2 recitations; 1 laboratory.

204–c. Animal Diseases. A study of some of the more common economic infectious and non-infectious diseases of farm animals, their prevention and their treatment. Mr. Tirrell.

Elective. 3 credits: 2 recitations; 1 laboratory.

205–c. Animal Breeding. A study of the principles and practices of animal breeding. Practice is given in tracing pedigrees. Mr. Tirrell.

Elective second year. 3 credits: 2 recitations; 1 laboratory.

BOTANY

201–b. Elements of Botany. In this subject the student is given a succinct account of the form and structure of plants, and of how plants grow and feed. Mr. Klotz.

Required first year. 3 credits: 1 lecture; 2 laboratories.

202–c. Fungous Diseases of Plants. The principal fungous diseases, their cure and their prevention. Mr. Klotz.

Required first year. 2 credits: 1 lecture; 1 laboratory.

AGRICULTURAL CHEMISTRY

201–b. Agricultural Chemistry. A study of the elementary principles of chemistry, with special emphasis upon the elements of importance in agriculture. Mr. Kraybill and Mr. Spaeth.

Required first year. 3 credits: 2 recitations; 1 laboratory.

202–c. Agricultural Chemistry. Elements of the chemistry of plants, soils, fertilizers, manure, lime, foods, animal physiology, spray materials and dairy products. Mr. Kraybill and Mr. Spaeth.

Prerequisite: Agricultural Chemistry 201–a. Required first year. 3 credits: 2 recitations; 1 laboratory.

DAIRY HUSBANDRY

201–b. Farm Dairying. A general survey of the field of dairy husbandry. Such topics as the use of the Babcock test, farm separators, farm butter making, and marketing dairy products, are included. Mr. DePew.

Required first year. 3 credits: 2 lectures; 1 laboratory.

202–c. Milk Production. The field of dairy husbandry in its relation to the producer. Feeding dairy animals; systems of herd feeding; silage and soiling; raising dairy animals; dairy herd development; dairy barns; advanced registry management; fitting dairy animals for show; dairy cattle judging. Mr. Fuller.

Elective second year. 3 credits: 2 lectures; 1 laboratory.

203–c. Butter Making. A study of the secretion, and of the chemical and physical properties of milk; pasteurization; cream ripening, starters, churning; organization and operation of factories. Mr. DePew.

Elective second year. 3 credits: 2 lectures; 1 laboratory.

204–b. Market Milk. Food value of milk; producing, handling and distributing market and certified milk; dairy farm inspection; control of milk supply. Mr. DePew.

Elective second year. 3 credits: 2 lectures; 1 laboratory.

205–b. Ice Cream and Cheese Making. (1) Lectures and laboratory work covering the manufacture of the more important types of cheese.

(2) The making, handling, and marketing of ice cream and ices. Mr. DePew.

Elective second year. 4 credits: 2 lectures; 2 laboratories.

DRAWING

DEPARTMENT OF ARCHITECTURE AND DRAWING

Draw. 201–b. Agricultural Drawing. A brief study of the use of drafting instruments, followed by sketches and working drawings of wood and concrete construction as applied to farm mechanics and farm buildings. Mr. Dodge.

Required first year. 2 credits: 2 drawing periods.

ENGLISH

201–b, 202–c. Grammar and Elementary Composition. Mr. Richards.

Required first year. 3 credits: 3 recitations.

ENTOMOLOGY

201–b. Principles of Economic Entomology. The relation of the structure and classification of insects to methods of insect control. The preparation and application of insecticides. Spray machinery and appliances. Mr. O'Kane and Mr. Lowry.

Required second year. 3 credits: 2 recitations; 1 laboratory.

FORESTRY

201–c. Farm Forestry. The care and management of farm woodlots; log and board scaling; logging and milling; estimating standing timber; protection from fire, insects, fungi, etc.; thinning immature stands; seeding and planting; natural regeneration. Mr. Woodward.

Required second year. 3 credits: 2 lectures; 1 laboratory.

HORTICULTURE

201–c. Fruit Growing. This subject embraces a study of commercial orcharding. Each fruit is studied with reference to planting, cultivating, pruning, fertilizing, picking, packing, storing and marketing. Mr. Wentworth.

Required first year. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

202–c. **Vegetable Gardening.** A study of the commercial methods of vegetable growing. Special attention is given to the home garden. Mr. Hepler.

Elective second year. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

203–b. **Greenhouse Management.** Combined lecture, demonstration and laboratory work in greenhouse management. Mr. Hepler.

Elective second year. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

204–b. **Home Decoration.** A study of ornamental trees, shrubs and flowers; their culture, proper arrangement and decorative value, with special reference to the home surroundings. Mr. Hepler.

Elective second year. 3 credits: 1 lecture; 1 recitation; 1 laboratory.

205–b. **Orchard Problems.** This subject deals with the principal problems of farm and commercial orchard management. It is designed to show the application of the principles of fruit growing to practical conditions. Mr. Potter.

Elective second year. 3 credits: 2 lectures; 1 laboratory.

206–c. **Small Fruits and Plant Propagation.** A study of the propagation of horticultural plants and the culture and marketing of miscellaneous small fruits including the strawberry, cranberry, raspberry, blackberry, grape, and blueberry. This subject will also include a brief study of the principles of plant breeding. Mr. Wentworth.

Elective second year. 3 credits: 2 lectures; 1 laboratory.

207–b, 208–c. **Advanced Horticulture.** Special work in any phase of horticulture may be taken by arrangement with the head of the department. Messrs. Potter, Hepler, Wentworth, and Macfarlane.

Prerequisites will depend upon the work taken. Elective second year. Credits and hours to be arranged.

209–c. **Beekeeping.** This subject deals with the life history and habits of honey bees with special reference to apiary conditions. The laboratory work consists of practice in handling bees, construction and use of hives, and hive fittings, and the extraction and preparation of honey for market. Mr. Hepler.

Elective second year. 3 credits: 2 lectures; 1 laboratory.

POULTRY

201–b, 202–c. Farm Poultry. A general subject designed especially for two-year students who are going back to the farm to take up practical poultry work. The subject will include work in managing, feeding, housing, breeding, incubation, brooding, and marketing, with laboratory work as practical as can be made. Mr. Richardson.

3 credits: 2 lectures; 1 laboratory.

203–b. Poultry Diseases. A subject treating of the anatomy of fowl, with clinics showing various common poultry diseases, and lectures giving methods of prevention and cure. Mr. Fitts.

Prerequisite: 201–a. 3 credits: 3 lectures.

204–c. Poultry Feeds and Feeding. A subject dealing with the principles of feeding, and the comparative value of various grains and feeds used in poultry feeding. Each student is obliged to do practical work in feeding and caring for a flock of 500 hens. Mr. Richardson.

Prerequisite: 201–a. 3 credits: 2 lectures; 1 laboratory.

SHOP WORK

201–c. Wood Work. Farm carpentry and joinery. Care and use of tools, making of implements for the farm, and care of lumber on the farm. Mr. Batchelder.

Required first year. 2 credits: 2 laboratories.

202–c. Forging. This is a study in the forging of iron and steel, and is designed to teach the operation of drawing, upsetting, welding, twisting, splitting, and punching. A study is made of the construction, care and management of the forge, and instruction is given in tempering, case hardening and annealing. Mr. Atkinson.

Required first year. 1 credit: 1 laboratory.

ZOÖLOGY

201–c. Human Anatomy and Physiology. A general survey of the structure and physiology of the human body. The most important principles of hygiene will be pointed out from time to time as various systems are discussed. Mr. Emery.

Required first year. 3 credits: 3 lectures.

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION

JOHN C. KENDALL, *Director*

HISTORICAL SKETCH

In order that research work on agricultural problems might be undertaken in New Hampshire, a branch of the University, known as the New Hampshire Agricultural Experiment Station, was established by the state, August 4, 1887, under an act of congress of March 2 of that year, known as the Hatch Act, in honor of its author. This act appropriated $15,000 annually for the maintenance of an agricultural experiment station in each state, providing as follows:

"That it shall be the object and duty of said experiment stations to conduct original researches or verify experiments on the physiology of plants and animals; the diseases to which they are severally subject with the remedies for the same; the chemical composition of useful plants at their different stages of growth; the comparative advantages of rotative cropping as pursued under a varying series of crops; the capacity of new plants or trees for acclimation; the analysis of soils and water; the chemical composition of manures, natural and artificial, with experiments designed to test their comparative effects on crops of different kinds; the adaptation and value of grasses and forage plants; the composition and digestibility of the different kinds of food for domestic animals; the scientific and economic questions involved in the production of butter and cheese; and such other researches or experiments bearing directly on the agricultural industry of the United States as may in each case be deemed advisable, having due regard to the varying conditions and needs of the respective states and territories." The act also provides that the results of such work shall be published in bulletins and reports.

A further endowment of the experiment stations to provide specifically for research work was made by the Adams Act, passed by congress and approved March 16, 1906, which amounts to $15,000 each year. This appropriation is specifically limited to the "necessary expenses of conducting original researches or experiments," and the rulings of the United States Department of Agriculture, which is vested with the supervision of the expenditures under this act, require that this appropriation be spent in fundamental investigations or researches to deter-

mine the underlying causes and principles of agricultural science, rather than for mere experiments to secure results of immediate practical application as contemplated under the Hatch Act appropriation. The purposes of the two acts are, therefore, supplementary but distinct. The State Legislature in 1921 recognized the value of the agricultural research work by passing an additional appropriation of $5,000 for the year 1921–22, and $7,000 for the year 1922–23, the latter sum being repeated annually during the present biennium.

The New Hampshire Agricultural Experiment Station is organized as a department of the University of New Hampshire and is administered by a board of control, elected by its board of trustees.

WORK OF EXPERIMENT STATION

The investigations conducted by the New Hampshire Agricultural Experiment Station vary according to their nature, some lasting through one season only and some covering a period of years. Projects carried on under the Adams Act are limited by the act of congress to fundamental investigations to determine the underlying principles of agricultural science, while those under the Hatch Act may be of more immediate practical application. The station thus aims to contribute not only to the universal fund of knowledge relating to agriculture, but also to the problems peculiar to farming in New Hampshire. Experiments having the latter end in view have been conducted not only at Durham but in various sections of the state.

Advantage of the opportunities offered by the experiment station has been taken by the state in connection with the tests of seeds, fertilizers, and feeding-stuffs; and samples of these collected by the State Department of Agriculture are tested at the station laboratories each year, in accordance with legislative enactments.

Information relating to agricultural practices is supplied by the various departments and entails a large volume of correspondence in answer to individual inquiries. Samples of soil are tested, and plants and insects are identified. During the past year blood samples from 40,000 hens have been tested in connection with the campaign against white diarrhea of chickens.

EXPERIMENT STATION LIBRARY

The experiment station library, which is open daily to students and visitors, contains complete files of all bulletins issued by experiment stations in other states, all United States Department of Agriculture

bulletins, and many other reports, bulletins and records as well as books of agricultural value.

PUBLICATIONS

The publications of the station comprise 211 bulletins of the regular series and 22 circulars, 25 technical bulletins, 21 scientific contributions, and 4 school bulletins. The bulletins are issued at irregular intervals and notices of publication are sent to all residents of New Hampshire requesting them. Back numbers will be sent as long as the supply lasts. Lists of available publications will be supplied upon request.

LIST OF PROJECTS

Following is a list of some of the principal projects conducted by the departments of the experiment station during the past year. Adams projects are printed in italics. A more complete description of the station work may be found in the latest printed report.

Agronomy Department.—Variety tests of ensilage corn. Potash tests on potatoes. Top dressing hay land. Pasture improvement. Tests of foreign clovers. Improvement of timothy by selection and breeding. F. W. Taylor, agronomist, and M. G. Eastman, assistant agronomist.

Animal Husbandry Department.—*Sheep breeding. Nutrition investigations.* E. G. Ritzman, animal husbandman.

Botany Department.—*Studies of the effect of fungicides and insecticides on plants. Study of the toxic action of fungicides to parasitic fungi.* Snap-dragon rust and its control. Potato spraying experiments. Effect of Climate on Productiveness. Apple scab. Bean anthracnose. O. R. Butler, botanist, and L. J. Klotz, assistant botanist.

Chemistry Department.—*Plant metabolism studies. Relation of light to fruit bud formation.* Soil rejuvenation of neglected hay lands. Effect of phosphorus upon time of maturity of tomatoes. Study of lime requirements of New Hampshire soils. H. R. Kraybill, chemist, T. O. Smith, associate chemist, and C. P. Spaeth, assistant chemist.

Entomology Department.—*Study of European corn borer.* Spraying for apple maggot. Control of black flies. Insect record. Study of termites. W. C. O'Kane, entomologist, and P. R. Lowry, assistant entomologist.

Forestry Department.—Immature forest stands. K. W. Woodward, forester.

Horticultural Department.—*Fruit bud formation. Winter injury to fruits.* Adaptation of varieties of tomatoes to New Hampshire conditions. Variety tests of apples, plums, and small fruits. Experiment on use of manures, commercial fertilizers and green crops for maintaining soil fertility in vegetable gardens. Experiment on storage pits and trenches for root crops and cabbage. Experiment in pruning young apple trees. Experiment in fertilizing peach orchards. Effect of disbudding on apple trees. G. F. Potter, horticulturist, S. W. Wentworth, assistant horticulturist, and J. R. Hepler, assistant in vegetable gardening.

Poultry Department.—Elimination of white diarrhea. A. W. Richardson, poultryman, and P. I. Fitts, assistant poultryman.

UNIVERSITY OF NEW HAMPSHIRE EXTENSION SERVICE

JOHN C. KENDALL, *Director*

WORK OF EXTENSION SERVICE

What the colleges and universities are to those young men and young women who come within their walls, the extension service is, only to a lesser degree, to the thousands who are beyond the reach of the classroom.

The teachings of the college and the findings of the experiment station and the United States Department of Agriculture are now being carried to farms and homes throughout the state by a regularly established force of field workers. As a result of the coöperative arrangement, first made possible by the Smith-Lever Law, between the United States Department of Agriculture, the state college and the counties of the state, there are at present county agricultural agents in all ten counties, home demonstration agents in eight counties, and boys' and girls' club agents in six counties of the state. Farm management demonstrations and cow-test associations are also conducted with specialists in charge.

The extension service works largely through the organization of the Farm Bureaus, one of which has been formed in each county. The Farm Bureau is composed of farmers and farm women; and so far as possible the extension work is conducted along the lines requested by the people whom it is designed most to help.

With its own corps of thirty-two men and women the extension service relieves the college teaching staff and station workers from much of the miscellaneous extension work which they, of necessity, have been compelled to carry on in the past. It also carries the work to a much larger public and in a much more intimate way than it would otherwise be possible to do. It is very difficult to place any just estimate upon the value of such service to a state or to the nation. It is recognized today as never before that upon the prosperity of the farmer depends quite largely the general prosperity of all classes of people. The present high cost of living has done much to attract the attention of people to the relation which the farmer and his interests bear to them personally.

EXTENSION SERVICE

PUBLICATIONS

The publications of the extension service comprise 134 press bulletins, 56 circulars and 22 bulletins. Notices of new bulletins are sent to a mailing list, which is maintained in coöperation with the experiment station. Bulletins are sent free to all who request them.

Reading courses in fifteen subjects in agriculture and home economics, prepared by members of the resident college staff, are offered during the winter months.

LIST OF EXTENSION PROJECTS

Following is a brief description of the principal projects conducted by the extension service during the past year. Further information regarding the extension work may be found in the printed extension reports.

Work of the Central Office.—Matters of relationships are arranged by the director, who has charge of the general administration of extension activities. A bureau of information is maintained, connecting the people of the state with the college departments. Publications are issued, reading courses handled, informational articles sent to newspapers, and arrangements made for speakers and demonstrators.

Work of County Agricultural Agents.—Each county now has an agricultural agent. Work has been conducted in lime demonstrations, home mixing of fertilizers, legume demonstrations, variety tests, seed improvement, potato blight, orchard management, elimination of insect pests and plant diseases, dairy improvement, poultry improvement, elimination of scrub sires, tuberculosis eradication, farm management work, coöperative marketing, farm credits, and community improvement. The work is under the supervision of E. P. Robinson, county agent leader.

Work for Dairy Improvement.—Ten cow-test associations are operated in the state under this project. Elimination of low-producing cows, the introduction of better breeding methods, better feeding and care are emphasized. The work is under the supervision of G. L. Waugh, agent in dairying.

Farm Management Demonstrations.—This project is devoted largely to demonstrations in the keeping of farm accounts, and to the possibilities shown by such accounts for better farm management. Figures on the cost of milk production, cost of hay production and labor prices have also

been obtained. The work is under the supervision of H. C. Woodworth, farm management demonstrator.

Home Demonstration Work.—Eight counties now have home demonstration agents, and the leader and assistant leader cover in a less intensive way the other two counties. Work has been done on balanced rations for the family, a general nutrition campaign, hot school lunches, preservation of foods, child feeding, health, home care of the sick, home sanitation, clothing construction, labor-saving conveniences, household accounts, marketing of home products, community rest-rooms and work for community improvement. The work is under the supervision of Miss D. D. Williamson, home demonstration leader, and Miss A. F. Beggs, assistant leader.

Boys' and Girls' Club Work.—Instruction to juniors through boys' and girls' club organizations has been given in the planting of home gardens, the raising of sweet corn, field corn and potatoes, the keeping of pigs, dairy cows and poultry, the canning of food, cooking and sewing. The work is under the supervision of C. B. Wadleigh, state club leader, and Miss M. L. Sanborn, assistant state club leader.

Reading Courses.—The reading courses given by the resident staff are as follows:

Soils and Fertilizers. Mr. M. G. Eastman.
Farm Crops. Mr. M. G. Eastman.
Farm Stock. Mr. J. C. McNutt.
Orchard Management. Mr. G. F. Potter.
Dairy Farming. Mr. J. M. Fuller.
Poultry Husbandry. Mr. A. W. Richardson.
Swine Husbandry. Mr. J. C. McNutt.
The Farm Woodlot. Mr. K. W. Woodward.
Vegetable Gardening. Mr. J. R. Hepler.
Beekeeping. Mr. J. R. Hepler.
Small Fruits. Mr. S. W. Wentworth.
Farm Management. Mr. M. G. Eastman.
Feeding the Family. Mrs. H. F. McLaughlin.
Clothing the Family. Miss Irma Bowen.
Household Management. Miss Emma A. Baie.

DEGREES AND HONORS, 1923

ADVANCED DEGREES

MASTER OF SCIENCE

Agriculture

Charles Philip Spaeth, B.S. ..... Durham

Arts and Science

Dorothy Alice Flanders, A.B. ..... Laconia
Philip Bernard Pasquale, A.B. ..... Durham

MASTER OF ARTS

Perley Chesman Perkins, A.B. ..... Durham

DEGREES CONFERRED

BACHELOR OF SCIENCE

Agricultural Division

Mills Chase Aldrich ..... Whitefield
Dwight Kilton Andrew ..... Littleton
Kenneth Horatio Bassett ..... Fremont
Harry James Bennett ..... Winchester
George Lawrence Campbell ..... Medford, Mass.
Clarence Cummings ..... Colebrook
Wilbur Cummings ..... Colebrook
Earl Poole Farmer ..... Malden, Mass.
Ernest Fred Forbes ..... Colebrook
Alfred Levi French ..... Contoocook
Leon Conrad Glover ..... Brookline
Harvey Hamblet Goodwin ..... Leominster, Mass.
Stanley Weston Hamilton ..... Kearsarge
Leroy James Higgins ..... Littleton
Kenneth Francis Hill ..... Center Strafford
Hubbard Everett Howard ..... Pike
Arthur Noyes Lawrence ..... Durham
Earl Herbert Little ..... Colebrook
Howard Haley Meserve ..... Durham
George Edward Middlemas ..... Brighton, Mass.

Achilles John Nassikas.....Hooksett
Paul Standish Newcomb.....Swampscott, Mass.
Samuel Patrick, Jr.....Winthrop, Mass.
Oscar Harris Pearson.....Stratham
Roy Scott Pulsifer.....Plymouth
Chester Arthur Randlett.....Laconia
Herman Alonzo Rodenhiser.....Henniker
Howard Arthur Rollins.....West Alton
Gordon James Savage.....Riverton
John Prentiss Weston.....Bennington

Arts and Science Division

Costas D. Anagnostopoulos.....Durham
Mildred Mae Bangs.....Manchester
Herbert Francis Barnes.....Manchester
Jennie May Boodey.....East Barrington
Henry Paul Callahan.....Concord
George Hazelton Came.....Somersworth
Lawton Brown Chandler.....Concord
Guy Kenneth Chesley.....Rochester
Walter Thomas Conefrey.....Brockton, Mass.
Stafford Joseph Connor.....Exeter
Rose Marie Corriveau.....Concord
Clyde Rolland Cotton.....Center Strafford
Milton Frederick Crowell.....Manchester
Alvin Thomas Dares, Jr.....Portsmouth
Andrew McGrouther Dawson.....Methuen, Mass.
Wilford Arthur Dion.....Tilton
Irving Warren Doolittle.....Portsmouth
Harold Norman Farrar.....Framingham, Mass.
Grace Eastman Flanders.....East Andover
Carl Friborg, Jr.....Manchester
Richard Leon Gustafson.....Manchester
Michael Edward Hayes.....Cliftondale, Mass.
Vivian Eloise Hewitt.....Durham
Bernice Mary Hill.....Center Strafford
Margaret Eagen Hoben.....Manchester
Robert Samuel Horner.....Manchester
Ruth Hancock Kemp.....Kingston
David Levine.....Portsmouth

Oscar Levingston.....Concord
Louis Brooks Litchfield.....Brunswick, Me.
Charles Edward Lord.....Laconia
Janet Mann McKenney.....Durham
George Henry Clay Marsh.....Nashua
Hamden Currier Moody.....Bradford
Clifton Cole Morrison.....Ashland
Ralph Whipple Newell.....Keene
Frances Katherine Pease.....Laconia
Elna Iris Perkins.....Pittsfield
Charles Grandison Platt.....Stratford
Ruth Catherine Prescott.....Winchester
Gertrude Burke Roberts.....Manchester
George Waldron Russell.....Fairfax, Vt.
Pearle Agnes Sargent.....Henniker
Alice Gertrude Saxton.....Manchester
Joseph Clarence Silver.....New Ipswich
Charles Wesley Smith.....Portsmouth
Walter Harry Spear.....Nashua
Laurence Melbern True.....Hampton
Marion Dunlap Williams.....Portsmouth

Engineering Division

Horace Bromley Ambler.....Natick, Mass.
Arnold Carl Ball.....Nashua
Floyd Eugene Bishop.....Newport
Delmer Frederic Borah.....Rutland, Vt.
Alvin Edward Chase.....Keene
Ernest Waldemar Christensen.....Gloucester, Mass.
Joseph Bradley Varnum Coburn, Jr.....Lowell, Mass.
John Freeman Dockum.....Newmarket
Lester Joseph Ellis.....Brockton, Mass.
Charles Albert Fitts, Jr.....Peterboro
Horace Alpheus Giddings.....Conway
Charles Edward Graves.....Exeter
Edward Joseph Hobert.....Marlboro
Robert William Holmes.....Dover
Leo DeForest Hyde.....Littleton
Donald Richardson Jones.....Nashua
Warren Thatcher Kelley.....Dennisport, Mass.

Harold William Loveren ..... Durham
Martin Edward McGreal ..... Somersworth
Weyman Everett Maxwell ..... Agawam, Mass.
John Edward Morrill ..... Nashua
Ralph Edward Parkhurst ..... Peterboro
Herman Milton Patridge ..... Newfields
Ellsworth Blake Philbrick ..... Epsom
George Osborn Phelps ..... Nashua
Ray Pike, Jr. ..... Exeter
Andrew Carl Rice ..... Whitefield
James Arnold Roberts ..... Dover
Charles Augustus Ropes ..... Salem, Mass.
Edward Frederick Rumazza ..... Rochester
Edward Banks Sheridan ..... Lowell, Mass.
Clarence George Shuttleworth ..... Portsmouth
Harry Heath Spencer ..... Plymouth
Theodore Whithouse Stafford ..... Berlin
Harold Nelson Stevens ..... Andover
Angelo Vincenzo Volpe ..... Plymouth
Clifford Dewey Walker ..... Littleton
Ralph Joseph Wallis ..... Laconia
George Samuel Yeaton ..... Short Falls

BACHELOR OF ARTS

Arts and Science Division

Gertrude Vienna Allen ..... Ashuelot
Marjory Ames ..... Somersworth
Florence Madeline Basch ..... Winchester
Josephine Estelle Berry ..... Newmarket
Ida Marilla Boodey ..... East Barrington
Evelyn Ruth Browne ..... West Rye
Daniel John Byrne ..... Concord
Ronald Burns Campbell ..... Jamaica Plain, Mass.
John Spencer Carr ..... Milford, Mass.
Nicholas Richard Casillo ..... Keene
Karl Brock Dearborn ..... Belmont
Arthur Harrison deCourcy ..... Portsmouth
Catherine Elizabeth Dodge ..... Contoocook
Marion Lula Downing ..... Milton
Harold Merrill Evans ..... South Hampton

DEGREES

Mabel Elois Fortune.....Sunapee
Gladys Holt.....Suncook
Marion Lizzie Holt.....Rumney Depot
Hugh Marshall McKenzie Huggins.....Ottawa, Canada
Ingeborg Laaby.....Franklin
Abigail Meserve.....Framingham Center, Mass.
Helen Elizabeth Murphy.....Dover
Mark Anthony Neville.....Portsmouth
Evan Merritt Post.....Lincoln
Mary Catherine Reilly.....Dover
Dorothy Frances Rundlett.....Portsmouth
Mildred Elizabeth Sanderson.....Greenland
Helen Katherine Sherry.....Dover
Angela Catherine Thomas.....Durham
Robert Atkinson Wilson.....Dorchester, Mass.
Viola Esther Worster.....Dover

CERTIFICATES

Two-Year Students in Agriculture

Certificates were awarded to the following students upon the completion of the work of the Two-Year course in Agriculture March 29, 1923:

Roy Howard Blake.....Concord
James Brigham Carter.....Keene
Lawrence Francis Clarke.....Manchester
Ormond Monroe Dodge.....Manchester
Clarence Wesley Hill.....Laconia
Gilbert Dearborn House.....Littleton
Donald Frederick Parker.....Littleton
George Fred Rohan.....New Durham
Clifford Arthur Sawyer.....Warner
Howard Leslie Sawyer.....Warner
Philip Warren Sawyer.....Madbury
Charles Warren Webster.....Farmington
Robert Parkman Wheeler.....Temple

PRIZES AWARDED 1923

BAILEY PRIZE

Horace Alpheus Giddings, Conway

ERSKINE MASON MEMORIAL PRIZE

Mark Anthony Neville, Portsmouth

NEW HAMPSHIRE COLLEGE MILITARY HONOR MEDAL

Wilford Arthur Dion, Tilton

CHASE-DAVIS MEMORIAL MEDALS

Gold Medal

Theodore Whitehouse Stafford, Berlin

Silver Medal

Stafford Joseph Connor, Exeter

VALENTINE SMITH SCHOLARSHIP

Eleanor Frances Batchelder, '24, Portsmouth
Mary Georgene Hoitt, '25, Durham
Robert Bartlett Folsom, '26, Dover
Robert Thayer Phelps, '27, Jefferson

DIETRICH MEMORIAL CUP

Mabel Elizabeth Hayes, Exeter

PHI MU MEDAL

Alice Gertrude Saxton, Manchester

BARTLETT PRIZE

Gordon Robert Ballantyne, Dover

KATHARINE DEMERITT MEMORIAL PRIZE

Helen Briggs Burnham, Henniker

CHI OMEGA PRIZE

Marjorie Emma Thompson, Athol, Mass.

PI GAMMA PRIZE

Alice Gertrude Saxton, Manchester

HOOD ALL-AROUND ACHIEVEMENT PRIZE

Earl Poole Farmer, Malden, Mass.

HOOD DAIRY CATTLE JUDGING PRIZES

First—Howard Haley Meserve, Durham
Second—Dwight Kilton Andrew, Littleton
Third—Leroy James Higgins, Littleton

INTERFRATERNITY SCHOLARSHIP CUPS

Women—Alpha XI Delta
Men—Sigma Beta

THE RESERVE OFFICERS TRAINING CORPS

UNIVERSITY OF NEW HAMPSHIRE R. O. T. C. REGIMENT
1923–1924

CADET OFFICERS

Regimental Headquarters

Lieutenant Colonel Ruben F. Draper, *Commanding*
Captain Richard D. Stevens, *Adjutant*
Captain Ralph E. Cox, *Supply Officer*
Second Lieutenant Hervey D. Columbia, *Assistant Adjutant*

First Battalion

Headquarters

Major Raymond F. Gunn, *Commanding*
First Lieutenant William S. Phillips, *Adjutant*

Company "A" (Color Company)

Captain Merton W. Rowe, *Commanding Company*
First Lieutenant William W. Smith
Second Lieutenant Joseph J. Bloomfield

Company "B"

Captain Samuel Stowell, *Commanding Company*
First Lieutenant George L. Boulay
Second Lieutenant Harold L. Johnson

Company "C"

Captain Arthur R. Wilson, *Commanding Company*
First Lieutenant William E. Langley
Second Lieutenant Clarence L. Allard

Second Battalion

Headquarters

Major John B. Severence, *Commanding*
First Lieutenant John O. Morton

Company "E"

Captain Leon J. Lemieux, *Commanding Company*
First Lieutenant Herman H. Boisclair
Second Lieutenant Norman E. Briggs

Company "F"

Captain Harry D. Hardy, *Commanding Company*
First Lieutenant Dixi C. Hoyt
Second Lieutenant Frank C. Hilberg

Company "G"

Captain Curtis P. Donnell, *Commanding Company*
First Lieutenant Harold M. Lander
Second Lieutenant John P. Sullivan

Band

Warrant Officer Edward Y. Blewett

STUDENTS, 1923–1924

ABBREVIATIONS DESIGNATING COURSES

Agr. Ch.—Agricultural Chemistry
A. Ch.—Arts Chemical
A. Cn.—Architectural Construction
A. G.—Arts General
Agr.—General Agriculture
Agr. Tr.—Agriculture, Teacher Training
A. H.—Animal Husbandry
Ch. E.—Chemical Engineering
D. H.—Dairy Husbandry
Ed. Tr.—Education, Teacher Training
E. E.—Electrical Engineering
Engr.—Engineering
For.—Forestry
H. E. D.—Home Economics, Dietitian
H. E. I.—Home Economics, Institutional
H. E. Tr.—Home Economics, Teacher Training
Hort.—Horticulture
I. E.—Industrial Engineering
I. Tr.—Industrial, Teacher Training
M. E.—Mechanical Engineering
P. H.—Poultry Husbandry

GRADUATE STUDENTS

NAME	COURSE	P. O. ADDRESS
Blood, Paul Tolman	*Major Hort.* *Minor Agr. Ch.*	*Lisbon*
Crowell, Milton Frederick	*Major Ento.* *Minor Zoöl.*	*Durham*
Cushing, Helen Grant	*Major Botany* *Minor Chem.*	*Durham*
Goggin, Jeremiah Francis	*Major Chem.* *Minor Chem.*	*Dover*
Kemp, Ruth Hancock	*Major Zoöl.* *Minor Agr. Ch.*	*Kingston*
King, Margaret	*Major Zoöl.* *Minor English*	*Montclair, N. J.*

SENIORS

Name	Course	P. O. Address
Patridge, Herman Milton	*Major Chem.*	*Newfields*
	Minor Agr. Ch.	
Pearson, Oscar Harris	*Major Hort.*	*Stratham*
	Minor Agr. Ch.	
Pennock, Grace Lavinia	*Major Agr. Ch.*	*Durham*
	Minor Home Econ.	
Perkins, Elna Iris	*Major Zoöl.*	*Center Barnstead*
	Minor Agr. Ch.	
Rice, Andrew Carl	*Major Chem.*	*Whitefield*
	Minor Educa. Psych.	
Rollins, Howard Arthur	*Major Hort.*	*West Alton*
	Minor Econ.	
Sullivan, Joseph Timothy	*Major Agr. Ch.*	*Lawrence, Mass.*
	Minor Botany	
Tingley, Edythe May	*Major Zoöl.*	*Durham*
	Minor Agr. Ch.	
Whittemore, Hollie Leon	*Major Educa.*	*Londonderry*
	Minor Soci. Econ.	

SENIORS

Adams, Grace Louise	*A. G.*	*Providence, R. I.*
Adams, John Vose	*E. E.*	*Pittsfield*
Allard, Clarence Lord	*A. G.*	*Center Conway*
Avery, Helen Bethana	*H. E. Tr.*	*Wolfeboro*
Bachelder, Doris Abbie	*A. G.*	*Concord*
Bacon, Leslie Randolph	*Ch. E.*	*Henniker*
Baker, Elizabeth	*A. G.*	*Concord*
Ball, George Harold	*A. G.*	*Fremont*
Ballantyne, Gordon Robert	*A. G.*	*Dover*
Barraclough, Seth Dale	*E. E.*	*Durham*
Bartlett, Dorothy Frances	*A. G.*	*Fremont*
Batchelder, Eleanor Frances	*A. Ch.*	*Portsmouth*
Batchelder, Stanley Parkman	*I. E.*	*Portsmouth*
Berry, Kenneth	*M. E.*	*Wolfeboro Falls*
Bickford, Hester Emma	*H. E. Tr.*	*Gossville*
Boisclair, Herman Harry	*A. Cn.*	*Manchester*
Boulay, George Louis	*A. G.*	*Concord*
Briggs, Norman Edward	*Agr.*	*Reading, Mass.*
Brown, Mary Ella	*A. G.*	*Exeter*

Name	Course	P. O. Address
Burnham, Helen Briggs	*A. G.*	*Henniker*
Butler, Philbrook Rand	*E. E.*	*Portsmouth*
Callahan, Ruth Virginia	*A. G.*	*Rochester*
Calpin, Jack Leslie	*E. E.*	*Manchester*
Caulstone, Albert Romeo	*A. G.*	*Farmington*
Cleaves, Chester Freeman	*A. G.*	*Center Harbor*
Cox, Isaac Newton	*I. E.*	*Manchester*
Cox, Ralph Everett	*M. E.*	*Portsmouth*
Cree, Rachel Florence	*H. E. I.*	*Colebrook*
Curtis, Glenna Frances	*A. G.*	*Manchester*
Cutler, Henry Everton	*I. E.*	*Keene*
Daniell, Robert Lovekin	*A. G.*	*Franklin*
Darrah, Carl George	*E. E.*	*Concord*
Davis, Adeline Genevieve	*A. G.*	*Sunapee*
Dillon, Elvira Parthena	*A. G.*	*Manchester*
Donnell, Curtis Pierce	*A. G.*	*Hampton*
Donovan, Patrick Bernard	*A. G.*	*Exeter*
Draper, Reuben Foster	*A. G.*	*Wakefield, Mass.*
Dudley, Alice Evelyn	*A. G.*	*Newmarket*
Dunn, Helen Irma	*A. G.*	*Manchester*
Emerson, Reginald Hill	*A. G.*	*Fitzwilliam*
Fernald, Harold Thompson	*A. G.*	*Laconia*
Fernald, Langdon Dewey	*A. G.*	*Laconia*
French, Albert Harrison	*E. E.*	*New Hampton*
French, Katharine Moses	*H. E. Tr.*	*Exeter*
Gilmore, Laura Belle	*A. G.*	*Exeter*
Gould, Malcolm Piper	*A. G.*	*Lakeport*
Grimes, Eustis Bernard	*M. E.*	*Belmont, Mass.*
Hardy, Harry Dudley	*A. G.*	*Nashua*
Hartford, Marjorie Laura	*A. G.*	*Dover*
Hayes, Mabel Elizabeth	*A. G.*	*Exeter*
Heller, Samuel Earle	*A. G.*	*Claremont*
Hoffses, Ruth Houghton	*A. G.*	*Manchester*
Huckins, John Leslie	*P. H.*	*Rochester*
Joy, Mildred Ann	*H. E. Tr.*	*Newmarket*
Kelley, Roger Milton	*A. G.*	*Lawrence, Mass.*
Kelsey, Alice Agnes	*A. G.*	*Meriden*
Kimball, Emma M.	*H. E. I.*	*Exeter*
Kimball, Rupert David	*D. H.*	*Hopkinton*

Name	Course	P. O. Address
Langdale, Edith Isabel	*H. E. I.*	*Cincinnati, Ohio*
Lauriat, Frederick Thornton	*M. E.*	*Durham*
Lemieux, Leon Joseph	*E. E.*	*Berlin*
Libbey, Anne	*A. G.*	*Wolfeboro*
Loughlin, Thomas Daniel	*A. G.*	*Portsmouth*
Lunderville, Doris	*H. E. Tr.*	*Littleton*
Lyford, Ruth	*A. G.*	*Concord*
Lynch, Sheridan Bernard	*A. G.*	*Atkinson*
McDanolds, Martha	*A. Ch.*	*Littleton*
Maddern, Marion	*H. E. Tr.*	*Norwood, Mass.*
Mansell, Maurice Ames	*For.*	*Durham*
Marston, Margaret	*A. G.*	*Center Sandwich*
Marston, Philip Mason	*A. G.*	*Ashland*
Martin, Franklin Goodall	*A. G.*	*Grasmere*
Martin, Lawrence	*A. G.*	*Pembroke*
Melendy, Walter Stevens	*Agr.*	*Bedford*
Menke, Bernhard Howard	*A. G.*	*Wolfeboro*
Merchant, Harriet Ruby	*A. G.*	*Northampton, Mass.*
Merrill, Forrest Winn	*E. E.*	*Durham*
Morton, John Ordway	*A. G.*	*Concord*
Nakos, Arthur John	*E. E.*	*Nashua*
Osgood, Margaret Lillian	*A. G.*	*Concord*
Otis, Addie Emma	*A. G.*	*Rochester*
Page, Gladys	*H. E. Tr.*	*Rochester*
Page, Marian Irene	*H. E. Tr.*	*Newton*
Paine, Wilma Marion	*A. G.*	*Wolfeboro*
Parkhurst, Wayne Louis	*D. H.*	*Colebrook*
Pennell, Rachel Florence	*A. G.*	*Suncook*
Philbrook, Ernest Wilfred	*I. E.*	*Center Conway*
Pichette, Charles Francis	*Ch. E.*	*Concord*
Pingree, Ruth Elizabeth	*A. G.*	*New London*
Pratt, Harold Arthur	*A. G.*	*Alton Bay*
Price, Frank Walter	*A. G.*	*Amesbury, Mass.*
Rice, Lee Laughna	*A. G.*	*Durham*
Richards, Sarah Caroline	*A. G.*	*South Lyndeboro*
Rogers, Olive Mae	*A. G.*	*Manchester*
Rowe, Merton Willis	*A. G.*	*Newton*
Roy, Gedeon Charles	*E. E.*	*Rochester*
Sargent, Maurice James	*I. E.*	*New London*

Name	Course	P. O. Address
Severance, John Bean	*A. G.*	*East Andover*
Sheldrick, Helen Mary	*A. G.*	*Wilton*
Smith, Alfred Willard	*A. G.*	*Exeter*
Smith, Mary Blanche	*A. G.*	*Manchester*
Smith, Rodney Perkins	*Ch. E.*	*Plymouth*
Smith, William Watson	*Hort.*	*Lakeport*
Snow, Thomas Leonard	*A. G.*	*Claremont*
Sprague, Kimball Dearing	*A. G.*	*Brooklyn, N. Y.*
Steeves, Reginald VanTassell	*E. E.*	*Dover*
Sterling, Ruth Harriman	*H. E. Tr.*	*Dover*
Stevens, Elsie Rickert	*A. G.*	*Laconia*
Stevens, Richard Don	*For.*	*Colebrook*
Stewart, Morris Albion	*A. G.*	*Portsmouth*
Stone, Rena Mildred	*H. E. Tr.*	*Candia*
Studley, Robert Allen	*A. G.*	*Rockland, Mass.*
Summerville, Hazel Mary	*A. G.*	*Manchester*
Thompson, Marjorie Emma	*A. G.*	*Athol, Mass.*
Tucker, Harris Wiggin	*A. G.*	*Sanbornville*
Wadleigh, Ruth	*H. E. Tr.*	*Milford*
Walker, Frank Arthur	*I. E.*	*Manchester*
Welcome, Arthur Louis	*P. H.*	*West Chesterfield*
Whitcomb, Warren, Jr.	*Hort.*	*Bath*
Whiting, Frederic William	*Agr.*	*Framingham Center, Mass.*
Whittemore, Ruth Caroline	*A. G.*	*Manchester*
Williams, Priscilla Alden	*A. G.*	*Exeter*
Winkler, Louis Benedict	*A. G.*	*Exeter*
Woodin, Ernest Nelson	*D. H.*	*Hollis*
Young, Adaline Roberts	*H. E. Tr.*	*Dover*
Young, Edward Hale	*E. E.*	*Dover*

JUNIORS

Akmakjian, Elliott	*Hort.*	*Salem Depot*
Alexander, Eleanor Margaret	*H. E. Tr.*	*Derry*
Alexander, Everett Humphrey	*E. E.*	*Salem*
Allquist, John William	*Ch. E.*	*Concord*
Anderson, Paul Howard	*E. E.*	*Berlin*
Atkinson, Thomas W. C.	*E. E.*	*Tilton*
Avery, Dean Proctor	*A. G.*	*Hanover*
Ayers, Sidney Seymour	*A. G.*	*Newport*

JUNIORS

Name	Course	P. O. Address
Barnard, Doris May	*H. E. Tr.*	*Kittery Depot, Me.*
Barnett, Harriet Isabelle	*H. E. Tr.*	*Whitefield*
Bartlett, Francis William	*A. G.*	*Manomet, Mass.*
Barton, Donald Gilfillan	*A. G.*	*Croydon*
Bixby, Arthur March	*M. E.*	*Wolfeboro*
Blass, Louis, Jr.	*A. G.*	*Manchester*
Bloomfield, Benjamin	*A. G.*	*Laconia*
Boucher, Kathryn Natalie	*A. G.*	*Lancaster*
Bridges, Webster Easterbrook	*A. G.*	*Concord*
Brooks, Lester Fordyce	*M. E.*	*Errol*
Bruce, Arthur Philip	*A. G.*	*Milton*
Bryant, John Sherwood	*I. E.*	*Portsmouth*
Burnham, Evelyn Hazel	*H. E. Tr.*	*Henniker*
Buxton, Elizabeth Ruth	*A. G.*	*Nashua*
Caldwell, Audrey Loraine	*A. G.*	*Newburyport, Mass.*
Cassidy, James Patrick	*Agr.*	*Concord*
Chase, Carl Eddie	*A. H.*	*Londonderry*
Chickering, Elsie	*H. E. Tr.*	*West Chesterfield*
Clark, George Blair	*A. G.*	*Boston, Mass.*
Clark, Kenneth Malcolm	*A. H.*	*Colebrook*
Colby, Salome Evlyn	*A. G.*	*Franconia*
Columbia, Hervey Dow	*E. E.*	*Canaan*
Conant, Dorothy	*A. G.*	*Canterbury*
Coombs, Albert Linscott	*A. G.*	*Hampstead*
Coughlin, William Edward	*A. Ch.*	*Concord*
Cowles, Ethel Lydia	*H. E. Tr.*	*Claremont*
Craig, Anne Kirkwood	*H. E. I.*	*Portsmouth*
Cronin, John Joseph	*A. Ch.*	*Concord*
Cunningham, Madeline	*A. G.*	*Franklin*
Cuthbertson, Doris Bertha	*A. G.*	*Valley Falls, R. I.*
Davis, Paul Owen	*Ch. E.*	*Concord*
Dooley, Helen Ward	*A. G.*	*Somersworth*
Eastman, Esther Beard	*A. G.*	*Manchester*
Engel, John Nicholas	*A. Cn.*	*Concord*
Farnum, Paul Ervin	*D. H.*	*Penacook*
Farnum, Robert Bachelder	*A. H.*	*Penacook*
Floyd, Iva Sybil	*A. G.*	*Amesbury, Mass.*
French, Charles Cyrus	*P. H.*	*Laconia*
French, Harold Campbell	*A. G.*	*West Lebanon*

Name	Course	P. O. Address
Frizzell, Theodore Justin	*Agr. Tr.*	*Keene*
Geremonty, Francis Howard	*A. G.*	*Stoneham, Mass.*
Goggin, Kathleen Mary	*A. G.*	*Dover*
Gordon, Howard French	*I. E.*	*Goffstown*
Gould, George Reuben	*A. G.*	*Colebrook*
Gove, Ira Newman	*E. E.*	*Concord*
Gray, Frederick Scarborough	*A. G.*	*Portsmouth*
Griffin, Elizabeth	*A. G.*	*Durham*
Groah, Marjorie Delia	*A. G.*	*Dover*
Gunn, Raymond Frederick	*A. G.*	*Newport*
Hall, Raymond Lee	*A. G.*	*Dover*
Hammond, Lester Fremont	*For.*	*East Jaffrey*
Haubrich, Frederick Rockwell	*A. G.*	*Claremont*
Hewitt, Charles Elbert	*Hort.*	*Durham*
Hoitt, Mary Georgene	*H. E. Tr.*	*Durham*
Holland, Lawrence Stover	*A. G.*	*Walpole*
Horn, Joseph Anthony	*A. H.*	*Laconia*
Hoyt, Dixi Crosby	*A. G.*	*Leominster, Mass.*
Hubbard, Carroll Chauncey	*Ch. E.*	*Dover*
Hudon, Camille Alexandra	*A. G.*	*Salmon Falls*
Hurford, Archibald Walter	*A. G.*	*Keene*
Hussey, Ivan Daniels	*A. Cn.*	*West Campton*
Jennings, Charles Winslow	*A. G.*	*Winchester, Mass.*
Johnson, Richard Schofield	*A. Cn.*	*Lisbon*
Johnson, William Dudley	*A. G.*	*Saugus, Mass.*
Jones, Warren Dodge	*E. E.*	*Rochester*
Kelly, Helen Lois	*A. G.*	*Portsmouth*
Kimball, Harold Stanley	*A. G.*	*Farmington*
Kimball, Helen Mae	*H. E. Tr.*	*Somersworth*
Kizirian, Vaughn Eli	*A. G.*	*Nashua*
Lander, Harold McKinley	*I. E.*	*South Hampton*
Langley, William Edwin	*A. G.*	*Dover*
Lawrence, Frederic Stanton	*A. Ch.*	*Newmarket*
LeBlanc, Mederick Joseph	*A. G.*	*Concord*
Lombard, Bernice May	*H. E. Tr.*	*Winchester*
Lufkin, Wilfred Weymouth, Jr.	*A. G.*	*Essex, Mass.*
MacDonald, Harold William	*A. G.*	*Salem, Mass.*
McDuffee, James Millard	*For.*	*Dover*
McGlynn, Leo James	*A. G.*	*Nashua*

JUNIORS

Name	Course	P. O. Address
McIntire, Bradford William	*A. G.*	*Durham*
McNally, Gertrude Elizabeth	*A. G.*	*Salmon Falls*
Magwood, Alice Anne	*A. G.*	*Epping*
Mann, Frederic White	*A. G.*	*East Concord*
Martin, Carl Libbey	*A. H.*	*Colebrook*
Merritt, Roy Leon	*M. E.*	*Hinsdale*
Minehan, Samuel Augustus	*A. G.*	*Somersworth*
Moore, William Ephraim	*A. G.*	*Jackson*
Morrissette, Merina Virginia	*A. G.*	*Newmarket*
Neil, Ida Mae	*A. G.*	*East Kingston*
Newell, Raymond Earl	*A. G.*	*Whitefield*
Norcross, Austin Sibley	*M. E.*	*Keene*
Noyes, Beatrice Ellen	*A. G.*	*Nashua*
Nutting, Louise	*H. E. I.*	*Manchester*
O'Kane, Elizabeth Wells	*A. G.*	*Durham*
Page, Emily Wills	*A. G.*	*Newburyport, Mass.*
Paine, Florence Alice	*A. G.*	*Wolfeboro*
Pascoe, Thomas Ellsworth	*I. E.*	*Chocorua*
Patridge, Eva Small	*A. G.*	*Newfields*
Pettee, Donald Abner	*D. H.*	*Francestown*
Phillips, William Stanley	*A. G.*	*Marblehead, Mass.*
Pray, Eleanor Frances	*A. G.*	*Somersworth*
Putnam, Pauline	*A. G.*	*Milford*
Putney, Charles Henry	*I. E.*	*East Andover*
Rasnick, Julius	*A. G.*	*Dorchester, Mass.*
Redden, John Daniel	*A. G.*	*Dover*
Redmond, William Patrick	*A. G.*	*North Rochester*
Ried, Edith	*A. G.*	*Manchester*
Riley, Mary Elizabeth	*A. G.*	*Somersworth*
Robinson, Ruth	*H. E. Tr.*	*Pembroke*
Sampson, Donald Lewis	*A. G.*	*Worcester, Mass.*
Sargent, George Eaton	*A. G.*	*Bennington*
Sawyer, Blanche Eliza	*H. E. I.*	*Milford*
Sawyer, John Thomas	*M. E.*	*Dover*
Seaman, Ralph Henry	*A. G.*	*Portsmouth*
Shand, Wesley Bruce	*P. H.*	*Manchester*
Shea, Edward Augustine	*A. G.*	*Nashua*
Shepard, Morrill Francis	*A. G.*	*Concord*
Simpson, James Sharples	*A. G.*	*Richmond, Me.*

Name	Course	P. O. Address
Smith, William Alfred	*A. G.*	*South Royalton, Vt.*
Sneierson, Morris Frank	*A. G.*	*Laconia*
Spaulding, Ernest Frank	*A. Cn.*	*Concord*
Sprague, Roger Edmund	*A. G.*	*Plaistow*
Stearns, Glenn Atherton	*A. G.*	*Winchester*
Stowell, Samuel	*M. E.*	*Marlboro*
Sullivan, John Patrick	*A. G.*	*Manchester*
Thurston, Dorothy Chase	*A. G.*	*Manchester*
Tinker, Jeanie Mildred	*A. G.*	*Manchester*
Tirrell, Alice Dorothy	*A. G.*	*Manchester*
Tuttle, Eleanor Jane	*A. G.*	*Dover*
Tuttle, Weare Fred	*Agr.*	*Grafton*
Voyagis, Michael Harry	*Agr. Ch.*	*Manchester*
Walker, James Edward	*A. G.*	*Concord*
Walker, Susan	*A. G.*	*Durham*
Wheeler, Kenneth Cushman	*E. E.*	*Lebanon*
White, Emma Louise	*H. E. I.*	*Durham*
Wiggin, Elmer Stoddard	*A. G.*	*Penacook*
Wilkinson, Charles Henry	*P. H.*	*Lyme*
Woodbury, Marjorie Helen	*H. E. I.*	*Manchester*
Woodman, George Bartlett	*E. E.*	*Plymouth*
Wormwood, Henry Francis	*E. E.*	*Raymond*

SOPHOMORES

Abbot, Charles Mack	*Agr.*	*Wilton*
Agrafiotis, Chris John	*Agr.*	*Manchester*
Allen, Hamilton Ford, Jr.	*A. G.*	*Durham*
Allen, Ralph Leonard	*I. E.*	*Portsmouth*
Ames, Asa Edward	*A. G.*	*Piermont*
Andrews, Paul Morgan	*Agr. Ch.*	*Dover*
Applin, Henry Beehler	*M. E.*	*Providence, R. I.*
Arnold, Constance	*A. G.*	*Wakefield, Mass.*
Arthur, Marian Elizabeth	*A. G.*	*Manchester*
Atherton, Raymond Putnam	*Agr.*	*Winchester*
Aulis, George Edgar	*A. G.*	*Hanover*
Avery, Chester Stuart	*A. G.*	*Milton, Mass.*
Avery, Howard Clifton	*I. E.*	*Wolfeboro*
Baker, Edgar Fisher	*A. G.*	*Concord*
Balch, West Steele	*E. E.*	*Lyme*

Name	Course	P. O. Address
Barnes, Ernest Edward	*For.*	*Mason*
Barton, Philip Shaw	*Agr.*	*Cumberland Center, Me.*
Batchelder, Bertha	*A. G.*	*Wilton*
Batchelder, Ila Grace	*H. E. Tr.*	*Manchester*
Bean, Joseph Demeritt	*E. E.*	*Rochester*
Beaton, Gladys Marjorie	*A. G.*	*Milton*
Bell, Lyle Wallace	*For.*	*Dover*
Bemis, Ralph Bernard	*P. H.*	*Chesham*
Benjamin, George Franklin	*A. G.*	*Portsmouth*
Bennett, Bernice Madeline	*A. G.*	*Concord*
Berkover, Jacob	*Engr.*	*Taunton, Mass.*
Bessette, George Fred	*E. E.*	*Haverhill, Mass.*
Bethune, John Sylvester	*M. E.*	*Lynn, Mass.*
Betz, Joseph Alexander	*A. G.*	*Peterboro*
Bidwell, Evelyn Beatrice	*H. E. Tr.*	*Derry*
Blewett, Edward York	*A. G.*	*Braintree, Mass.*
Bloomfield, Joseph Jacob	*A. G.*	*Laconia*
Bogle, Alexander Patrick	*A. G.*	*Derry*
Bolduc, Albert Edward	*I. E.*	*Derry*
Bonaiuto, Louis	*A. G.*	*Wakefield, Mass.*
Bowles, Armand Clinton	*Ch. E.*	*Claremont*
Boyd, Richard Harold	*E. E.*	*Chelmsford Center, Mass.*
Brady, Harriet Fiske	*A. G.*	*Union Hill, N. J.*
Britton, Beatrice Vivian	*H. E. Tr.*	*Claremont*
Brooks, Dorothy	*A. G.*	*Portsmouth*
Brooks, Joseph John	*A. G.*	*Concord*
Brown, Charles Henry	*A. G.*	*Brandon, Vt.*
Brown, Charles Mitchell	*M. E.*	*Lynn, Mass.*
Brown, Earle MacGregor	*A. G.*	*Sandown*
Brown, Esther Mae	*A. G.*	*Manchester*
Brown, Ralph Everett	*E. E.*	*Salem, Mass.*
Calcutt, Alfred William	*Agr.*	*Dover*
Calderwood, Harold Frederick	*I. E.*	*Saugus, Mass.*
Campbell, Marshall Fields	*A. G.*	*Beverly Farms, Mass.*
Campbell, Raymond Ellis	*E. E.*	*Woodsville*
Caron, Alfred Armand	*A. G.*	*Manchester*
Carpenter, Charles Hodgdon	*A. G.*	*Manchester*
Carr, Helen	*A. G.*	*Manchester*
Cassily, John Paul	*A. G.*	*Dover*

Name	Course	P. O. Address
Cavanaugh, Laurence Vincent	*M. E.*	*Dover*
Chandler, John Winthrop	*M. E.*	*Lisbon*
Chase, Francis Gardner	*A. G.*	*Somerville, Mass.*
Choate, Harold Fairbanks	*M. E.*	*Salem, Mass.*
Clarkson, Dorothy	*A. G.*	*Newburyport, Mass.*
Clay, Earle Hultman	*Agr. Ch.*	*Deerfield*
Clow, Howard Philpott	*I. E.*	*East Wolfeboro*
Codaire, Margaret Corinne	*A. G.*	*Manchester*
Colby, James Berton	*I. E.*	*Colebrook*
Conant, Elinor Baldwin	*A. G.*	*North Woodstock*
Connor, William Joseph	*A. G.*	*Nashua*
Cooper, Ruth Andrews	*A. G.*	*Henniker*
Corey, Floyd Palmer	*M. E.*	*Lisbon*
Corey, Raymond Earl	*E. E.*	*Manchester*
Cotton, Harold Parker	*A. G.*	*Ashland*
Cummings, Leslie Samuel	*Agr.*	*East Haverhill*
Cunningham, Grace Catherine	*A. G.*	*Franklin*
Curran, Frank Andrew	*A. G.*	*Nashua*
Currier, Clinton Henry	*A. G.*	*Plymouth*
Dahlgren, Carl Arvid	*A. G.*	*West Concord*
Dane, William Arthur	*A. G.*	*Salem, Mass.*
Danforth, Marshall Sauger	*A. G.*	*Newton, Mass.*
Davidson, Gaston Howes	*A. G.*	*Tamworth*
Davis, Earl Cummings	*A. G.*	*Nashua*
Davis, Edward Raymond	*A. G.*	*Boston, Mass.*
Davis, Leona Julia	*H. E. Tr.*	*Sunapee*
Davis, Philip Shackford, Jr.	*A. G.*	*Conway*
Davis, Rachel Alden	*A. G.*	*Keene*
Davis, Wendell Mason	*A. G.*	*Fall River, Mass.*
Dexter, Douglas Hibbard	*D. H.*	*Lisbon*
Dickerson, Elizabeth Doris	*A. G.*	*Hill*
Dickson, Charles LeRoy	*E. E.*	*Milton*
Doe, Thelma Frances	*A. G.*	*Dover*
Dolan, Joseph Paul	*A. G.*	*Nashua*
Donahoe, Mary Frances	*A. G.*	*Waltham, Mass.*
Donovan, John Edward	*A. G.*	*Haverhill, Mass*
Donovan, William Edwin	*A. G.*	*Norwood, Mass.*
Drew, Donald Willis	*E. E.*	*Dover*
Drew, Gordon Wentworth	*D. H.*	*Concord*

Name	Course	P. O. Address
Dube, Claudia Marie	*A. G.*	*South Berwick, Me.*
Duffy, Julia Dorothy	*A. G.*	*Dover*
Dyer, Carroll Francis	*A. G.*	*Salisbury, Vt.*
Eaton, Douglass Lambert	*Ch. E.*	*Newburyport, Mass.*
Eaton, Forrest Martin	*I. E.*	*Union*
Eklund, Percy Alexander	*A. G.*	*Attleboro, Mass.*
Emerson, Earl Lane	*Engr.*	*Center Barnstead*
Emerson, John Andrew	*A. G.*	*Dover*
Emery, Margaret Leighton	*A. G.*	*Newburyport, Mass.*
Evans, Roswell Hoyt	*A. G.*	*Wentworth*
Farnum, Hanford Alden	*A. G.*	*Exeter*
Farrar, Paul Charles	*Agr.*	*Henniker*
Fenton, Francis Xavier	*I. E.*	*Dover*
Finn, Ruth Genevieve	*A. G.*	*Exeter*
Flanagan, Francis Luce	*A. G.*	*Portsmouth*
Flanders, Franklin	*Hort.*	*Manchester*
Flanigan, Anna Patricia	*A. G.*	*Portsmouth*
Fletcher, Esther Elizabeth	*A. G.*	*Manchester*
Fogg, Charles Hayward	*Agr.*	*Hancock*
Follansbee, Herbert E.	*A. G.*	*West Concord*
Folsom, Robert Bartlett	*A. G.*	*Dover*
Foote, Oscar Avery	*A. G.*	*Mystic, Conn.*
Foss, Gerald Orin	*E. E.*	*Portsmouth*
Foss, Kenneth Lucius	*E. E.*	*Keene*
Foster, Theodore Curtis	*A. G.*	*Manchester*
Fowle, Edna Caroline	*A. G.*	*Newburyport, Mass.*
Fudge, Frederic William	*A. G.*	*Stoneham, Mass.*
Fuller, George Morton	*A. G.*	*Lawrence, Mass.*
Gale, Edward Orison	*A. G.*	*Keene*
Garvin, Carl Hanson	*A. G.*	*Dover*
Godbeer, John Norman, Jr.	*A. G.*	*Fitchburg, Mass.*
Godin, Ralph Edgar	*A. G.*	*Manchester*
Goodrich, John Gardner	*Agr.*	*Exeter*
Gordon, George Howard	*A. G.*	*Concord*
Gordon, Kenneth Elbridge	*I. E.*	*Hillsboro*
Gould, George Edward	*Ch. E.*	*Tilton*
Graupner, Ernest Walter	*I. E.*	*Manchester*
Graves, Cecil Angier	*I. E.*	*Keene*
Gray, Charles William, Jr.	*A. G.*	*Portsmouth*

Name	Course	P. O. Address
Greene, Warren Hayward	*A. G.*	*Alstead*
Griffin, Dorothy Wells	*A. G.*	*Durham*
Grover, Elliott Edgar	*M. E.*	*Manchester*
Gunn, Kenneth Earl	*A. G.*	*Newport*
Gustafson, Elton T.	*A. G.*	*Manchester*
Hammersley, Albert Raymond	*A. G.*	*Needham Heights, Mass.*
Handy, Glenroy Smith	*E. E.*	*Winchester*
Hanney, John Charles	*I. E.*	*Manchester*
Harrison, Harry Lincoln	*A. G.*	*Worcester, Mass.*
Hartwell, Arthur Irving	*A. G.*	*Nashua*
Hartwell, Reginald Warner	*A. G.*	*Laconia*
Hatch, Ralph Lord	*E. E.*	*Biddeford, Me.*
Heald, Virginia Frances	*H. E. Tr.*	*Needham Heights, Mass.*
Healey, Helen Frances Mary	*A. G.*	*Lowell, Mass.*
Hebert, Dorothy Violet	*A. G.*	*Franklin*
Hedman, Sverker N. F.	*M. E.*	*Temple*
Heller, Alta Edith	*A. G.*	*Claremont*
Henderson, Edna	*A. G.*	*Durham*
Henderson, Edward Nathaniel	*E. E.*	*Winchester*
Hersey, Irving William	*A. Cn.*	*Somersworth*
Higgins, William Alonzo	*Agr.*	*Littleton*
Hilberg, Frank Clarence	*A. Ch.*	*Salem*
Hill, Bertha Mary	*A. G.*	*Hooksett*
Hinckley, Russell Crocker	*A. G.*	*Cambridge, Mass.*
Hitchcock, Russell William	*E. E.*	*Medway, Mass.*
Hoag, Albert Buffum	*E. E.*	*Center Sandwich*
Hobson, William Briant	*A. G.*	*York Village, Me.*
Holden, Albert Amasa	*M. E.*	*Hillsboro*
Holmes, Clayton William	*M. E.*	*Durham*
Hosking, Harry James	*Ch. E.*	*Claremont*
Houle, Eldon Eugene	*M. E.*	*Raymond*
Hubbard, Austin Ira	*For.*	*Walpole*
Hubbard, Leslie Stoddard	*M. E.*	*Walpole*
Hubbard, Sarah Marion	*A. G.*	*Peterboro*
Hudon, Lillian Blanche	*H. E. I.*	*Salmon Falls*
Hunt, Barbara Irma	*A. G.*	*Cornish Flat*
Hunter, Eleanor May	*A. G.*	*Exeter*
Hurlin, Henry Brackett	*I. E.*	*Jackson*
Hussey, Frank Wentworth	*E. E.*	*Rochester*

Name	Course	P. O. Address
Jenkins, Ellery Wayne	*D. H.*	*Durham*
Jenkins, Ruth Ellen	*A. G.*	*Durham*
Jensen, Laurence Vorbeau	*A. G.*	*Ashburnham, Mass.*
Jesseman, Robert George	*A. G.*	*Franconia*
Johnson, Harold Ludlow	*I. E.*	*Concord*
Johnson, Pauline Constance	*A. G.*	*Newport*
Joseph, James	*A. G.*	*North Haverhill*
Kenison, Lewis Everett	*M. E.*	*Bartlett*
Kelleher, Paul Edward	*A. G.*	*Boston, Mass.*
Kemp, Ruth Marie	*H. E. Tr.*	*Cumberland Center, Me.*
Kennedy, Edward Henry	*M. E.*	*Somersworth*
Kennedy, Philip Sidney	*A. G.*	*New York, N. Y.*
King, Stanley Lewis	*A. G.*	*Keene*
Kinsman, Prescott Barber	*A. G.*	*Somersworth*
Kirk, Frank Wilkins	*A. G.*	*Portsmouth*
Knapp, Clyde Anthony	*Engr.*	*Salem, Mass.*
Knowlton, Dana Bowman	*I. E.*	*Walpole*
Lafond, Joseph Oliver	*I. E.*	*Huntington, Mass.*
Lagerquist, Harold George	*A. G.*	*Manchester*
Landman, Vivian Ione	*A. G.*	*Plaistow*
Langer, Walter Clarence	*A. G.*	*Manchester*
Leacock, John Harvey	*E. E.*	*Manchester*
Leighton, Myron Preble	*Agr.*	*Walnut Hill, Me.*
Libbey, Henry Hale	*Hort.*	*Durham*
Litchfield, Stephen, Jr.	*A. G.*	*Brunswick, Me.*
Littlefield, James Libby	*I. E.*	*Dover*
Littlefield, Willis Edwin	*A. Cn.*	*Dover*
Longley, Richard Morison	*E. E.*	*Peterboro*
Lytle, James Richardson	*E. E.*	*Littleton*
MacConnell, Stanley Ward	*A. G.*	*Salisbury, Mass.*
McCooey, Mary Rose	*A. G.*	*Dover*
McIntire, Daniel Porter	*A. G.*	*Portsmouth*
McIntire, Everett Marden	*A. G.*	*Lancaster*
McIntosh, Jessie Murdoch	*A. G.*	*Dover*
McIntosh, Ruth	*A. G.*	*Haverhill, Mass.*
McKinley, John Lawrence	*A. G.*	*New York City*
McLaughlin, Margaret Elizabeth	*A. G.*	*Exeter*
McManus, James Francis	*A. G.*	*Lynn, Mass.*
McPherson, Donald Davis	*A. G.*	*Worcester, Mass.*

Name	Course	P. O. Address
McRae, Horace Truman	*E. E.*	*Springfield, Mass.*
Macdonald, Floyd Perkins	*A. G.*	*Quincy, Mass.*
Mahar, John Edward	*A. G.*	*Norwood, Mass.*
Maji, Hjalmar Sulo	*E. E.*	*New Ipswich*
Maloney, Robert Owen	*E. E.*	*Meredith*
Manchester, Everett Hiram	*A. G.*	*Fall River, Mass.*
Manikian, Jerayr	*A. G.*	*Lynn, Mass.*
Mason, Bernice Evelyn	*A. G.*	*Manchester*
Maxam, Eugene Charles	*Engr.*	*Concord*
Maynard, Leo Henry	*E. E.*	*Nashua*
Mears, Russell Stanley	*A. G.*	*Haverhill, Mass.*
Melville, George Charles, Jr.	*A. G.*	*Swampscott, Mass.*
Metcalf, Daniel Messer	*A. G.*	*Piermont*
Michelson, Gunnar	*A. G.*	*Berlin*
Miller, Edward Gibson	*E. E.*	*Woodsville*
Minichiello, Lewis Allan	*For.*	*Portsmouth*
Mitchell, Ellsworth Douglas	*A. G.*	*Manchester*
Mooney, Leslie Levi	*E. E.*	*West Canaan*
Morrill, William Stanley	*E. E.*	*Penacook*
Morrison, Chester Thomas	*A. G.*	*Swampscott, Mass.*
Morse, Paul Atwood	*D. H.*	*New Boston*
Morse, William Sanders	*A. G.*	*East Haverhill*
Murphy, Herbert Evans	*E. E.*	*Swampscott, Mass.*
Nash, George Henry	*A. G.*	*Nashua*
Nedeau, Ernest Henry	*Agr.*	*Meredith*
Nesbitt, Herman Eugene	*Ch. E.*	*Lynnfield Center, Mass.*
Nicora, Robert Julia	*A. G.*	*Barre, Vt.*
Nims, Marion Maxwell	*A. G.*	*Keene*
Norton, Louise Mason	*H. E. Tr.*	*Jamaica Plain, Mass.*
Noyes, Everett Atwood	*M. E.*	*Lisbon*
O'Brien, James Barry	*A. G.*	*Concord*
O'Gara, Edward James	*A. G.*	*Hanover*
O'Hayre, John Jeffrey	*A. G.*	*West Somerville, Mass.*
O'Malley, Leo Freeman	*A. G.*	*Somersworth*
O'Neil, Robert Dravo	*I. E.*	*Exeter*
Page, George Elliott	*A. G.*	*Exeter*
Partridge, Mildred Evelyn	*A. G.*	*Winchester*
Pasquale, John Carmen	*A. G.*	*Lewiston, Me.*
Pattee, Charles Walter	*A. G.*	*Ashland*

Name	Course	P. O. Address
Pearson, Haydn S.	*A. G.*	*Hancock*
Pease, Perley Henry	*A. G.*	*Meredith*
Peaslee, Fred William	*Agr.*	*Reed's Ferry*
Pejouhy, Russell A.	*Agr.*	*Durham*
Pellerin, Jesse Lee	*A. G.*	*Enfield*
Peterman, Gustave Conrad	*I. E.*	*Durham*
Philbrick, Florence Edith	*A. G.*	*Concord*
Phillips, Herbert	*E. E.*	*Littleton*
Pillsbury, Albert Elliot	*A. G.*	*Rutland, Mass.*
Piper, Harold A.	*Hort.*	*Stratham*
Potts, Sherburn Moore	*I. E.*	*Plymouth*
Pratt, Wilfred Raymond	*A. G.*	*Boston, Mass.*
Priest, John Jenkins	*Ch. E.*	*Newmarket*
Proper, Argyle Burrill	*A. G.*	*Melvin Mills*
Rand, Arthur Gorham	*A. G.*	*Portsmouth*
Rand, Harold Tinkham	*A. G.*	*Salem, Mass.*
Reid, Russell Rollin	*Agr.*	*Epsom*
Reynolds, Fred Irving	*A. G.*	*Dover*
Rideout, Pearl Camille	*A. G.*	*Nashua*
Roberts, Stanley Byron	*A. G.*	*Easthampton, Mass.*
Robinson, Ethel Jennie	*H. E. Tr.*	*Danbury*
Robinson, Marion Frances	*H. E. Tr.*	*South Danbury*
Rollins, Theodore Edward	*E. E.*	*Raymond*
Rollins, Willard Dow	*Agr.*	*West Alton*
Ryan, Charles Francis	*A. G.*	*Castleton, Vt.*
Rydin, Doris Elizabeth	*A. G.*	*Manchester*
Sampson, Eleanor Agnes	*A. G.*	*Manchester*
Sanborn, Daniel Bradbury, Jr.	*I. E.*	*Manchester*
Sanborn, Rachel Alice	*A. G.*	*Goffstown*
Sanders, George Edward	*I. E.*	*Nashua*
Sargent, Benjamin Ricker	*A. G.*	*Wolfeboro*
Sargent, Lloyd Gilman	*A. G.*	*Plaistow*
Savithes, Edith Dorothea	*A. G.*	*Somersworth*
Sawyer, Wallace Wells	*Agr. Ch.*	*Whiting, Vt.*
Sayward, William Sewall	*A. G.*	*Durham*
Schurman, David Badger	*M. E.*	*Portsmouth*
Scott, Don Pitt	*A. G.*	*Tiverton, R. I.*
Scott, Winifred Louise	*A. G.*	*Tiverton, R. I.*
Seddon, Edgar Harrison	*Agr.*	*Brooklyn, N. Y.*

Name	Course	P. O. Address
Shaw, Marion Elizabeth	*A. G.*	*Warner*
Sheedy, James Augustine	*A. G.*	*Lawrence, Mass.*
Sherburne, Ronald	*Agr.*	*Nashua*
Sibley, Frederic Elmer	*Agr.*	*Walpole*
Simonds, George Wendell	*E. E.*	*Manchester*
Skillings, Carleton Douglas	*A. G.*	*North Berwick, Me.*
Sleeper, Charles Henry	*Agr.*	*Laconia*
Smith, Alfred Frank	*Agr.*	*Laconia*
Smith, Stanley Newton	*Agr.*	*Loudon*
Snow, Cedric Winthrop	*E. E.*	*Claremont*
Snow, Martin Fayette	*A. G.*	*Littleton*
Spaulding, Russell Smith	*M. E.*	*Walpole*
Spencer, Leon Leroy	*A. G.*	*Plymouth*
Spinney, Vesta Enid	*A. G.*	*Portsmouth*
Stearns, Leonard Parker	*A. G.*	*Belmont, Mass.*
Steere, Harry Wing, Jr.	*I. E.*	*Amesbury, Mass.*
Stevens, Helen Lois	*A. G.*	*Nashua*
Stimson, Wallace Atwood	*Agr.*	*Woodsville*
Stockwell, Ira Worcester	*A. G.*	*Marlboro*
Storey, Lena May	*H. E. Tr.*	*Sanbornville*
Sullivan, George Patrick	*A. G.*	*Manchester*
Summerville, George Herbert	*Ch. E.*	*Manchester*
Svenson, Hilda Augusta	*A. G.*	*Framingham, Mass.*
Sweeney, Edward Kenneth	*A. G.*	*Exeter*
Sweeney, Mildred Anna	*A. G.*	*Dover*
Swett, Catharine	*A. G.*	*Plymouth*
Talbert, Elmer James	*A. Ch.*	*West Lebanon*
Tamcales, George Nicholas	*A. G.*	*Durham*
Tarleton, Sherman William	*E. E.*	*Hampton*
Tarr, Martin Edgar	*A. G.*	*Manchester*
Taylor, Melville Lincoln	*A. G.*	*Haverhill, Mass.*
Taylor, Ralph Stocker	*Agr.*	*Durham*
Temple, Earl Spencer	*I. E.*	*Concord*
Tetzlaff, Eugene Anthony	*Ch. E.*	*Manchester*
Thurber, Walter Percival	*E. E.*	*Attleboro, Mass.*
Towle, Edward Chester	*Ch. E.*	*Pittsfield*
Tracy, Paul Emory	*A. G.*	*Concord*
Tuck, Harold Edward	*A. G.*	*Exeter*
Twombly, George Adam	*I. E.*	*Laconia*

Name	Course	P. O. Address
Varrell, Merton Wentworth	*Ch. E.*	*Portsmouth*
Vatter, Edwin Bryan	*Ch. E.*	*Salem, Mass.*
Viola, Louis Victor	*A. Cn.*	*Milford*
Virgil, Elizabeth Ann	*H. E. Tr.*	*Portsmouth*
Wakefield, Rudolph Huse	*A. Cn.*	*Plymouth*
Walker, Una Elizabeth	*A. G.*	*Nashua*
Ware, Wallace Shirley	*E. E.*	*Hampton*
Warren, Edward Lyman, Jr.	*A. G.*	*Laconia*
Wason, Bernard Albert	*M. E.*	*Chester*
Watson, Ruth Emma	*A. G.*	*Dover*
Webster, Helen Elizabeth	*A. G.*	*Milford*
Webster, Robert Gordon	*For.*	*Newburyport, Mass.*
Wendell, Charles Perkins	*Agr.*	*Portsmouth*
Wentworth, Shirley Preble	*A. G.*	*Salem, Mass.*
Wheelright, Cedric Preston	*A. G.*	*Danvers, Mass.*
Wheelright, Ralph Douglas	*I. E.*	*Danvers, Mass.*
Whitcomb, Harold William	*A. G.*	*Berlin*
Whitehead, Frederick Gale	*M. E.*	*North Andover, Mass.*
Whitney, Marshall	*A. G.*	*Nashua*
Whittier, Donald Moses	*For.*	*Manchester*
Wilcox, Clifton Raymond	*M. E.*	*Concord*
Wilder, Parker Spinney	*A. G.*	*Newton*
Wilkinson, Henry Douglas	*M. E.*	*North Conway*
Williamson, Clayton Marnoch	*E. E.*	*Dover*
Wilson, Stanley Edward	*Hort.*	*North Charlestown*
Young, Sumner Dowlin	*I. E.*	*Wolfeboro*
Young, Waldo Abiatha	*A. G.*	*Sunapee*

FRESHMEN

Abbiati, Furio Alexander	*Ch. E.*	*Barre, Vt.*
Adams, Charles B.	*A. Cn.*	*Pittsfield*
Adams, James Alden	*A. G.*	*Westminster, Mass.*
Andrews, Pauline Mae	*A. G.*	*Somersworth*
Anglin, John Ignatius	*A. G.*	*Peabody, Mass.*
Ashey, Edward Metchel	*A. G.*	*Lebanon*
Atwood, Albert Brown, Jr.	*A. G.*	*Chocorua*
Atwood, Eleanor Elizabeth	*A. G.*	*Gloucester, Mass.*
Avery, Clara Beatrice	*A. G.*	*East Kingston*
Ayers, Lester Charles	*A. G.*	*Beverly, Mass.*

Name	Course	P. O. Address
Ayers, Marion Lincoln	*A. G.*	*Newburyport, Mass.*
Bailey, Robert Dudley	*I. E.*	*Concord*
Baldwin, Howard Bradford	*A. G.*	*Wilton*
Bancroft, James Merritt	*A. G.*	*Bradford, Mass.*
Bartlett, Kenneth Earl	*E. E.*	*Derry*
Bartlett, Roger Earl	*A. G.*	*Bethel, Me.*
Barton, Chester Thomas	*Ch. E.*	*Newport*
Batchelder, Ray Merton	*Engr.*	*Durham*
Battis, John Henry	*Ch. E.*	*Woodsville*
Beals, Robert Vernon	*A. G.*	*Manchester*
Beane, Grover Cleveland	*A. G.*	*Concord*
Beattie, Robert Archibald	*A. G.*	*Woodsville*
Beeler, William Francis	*A. G.*	*Fall River, Mass.*
Beggs, Martin Francis	*A. G.*	*Concord*
Berg, Harold Roger	*M. E.*	*Kittery, Me.*
Berry, Elmer Clinton	*A. G.*	*Damariscotta, Me.*
Berry, Norman Jonathan	*M. E.*	*Rochester*
Betz, Edwin	*A. G.*	*Whitefield*
Biathrow, Frederic Moore	*E. E.*	*Hanover*
Birmingham, Harold Francis	*A. G.*	*Haverhill, Mass.*
Biser, Thaddeus McCauley	*Agr.*	*Frederick, Md.*
Blake, Herford Thomas	*E. E.*	*Haverhill, Mass.*
Blake, Winston Andrew	*A. G.*	*Bradford, Mass.*
Blampied, Edward Wesley	*Engr.*	*Dedham, Mass.*
Blodgett, Marguerite Lillian	*A. G.*	*Henniker*
Blum, Leo Bernard	*E. E.*	*Newbury, Mass.*
Boyd, Alfred Alonzo	*A. G.*	*West Somerville, Mass.*
Boyd, James Alexander	*A. G.*	*Dedham, Mass.*
Brackett, Carl Herbert	*A. G.*	*Newmarket*
Brady, Helen	*A. G.*	*Union Hill, N. J.*
Breen, Daniel Francis	*E. E.*	*Hardwick, Mass.*
Bresnick, Oscar Arthur	*A. G.*	*Portsmouth*
Brooks, Lester Stewart	*A. G.*	*Dorchester, Mass.*
Brown, Roland Scruton	*A. G.*	*Center Strafford*
Bruce, Edgar Brown	*A. G.*	*Milton*
Bryant, Burnell Varnum	*Agr.*	*Portland, Me.*
Bryant, William, Jr.	*Ch. E.*	*Manchester*
Brydon, Lloyd Harris	*I. E.*	*Cumberland Center, Me.*
Buckminster, William Dudley	*A. G.*	*Keene*

Name	Course	P. O. Address
Burgess, William Leighton	*A. G.*	*Still River, Mass.*
Burke, Francis Wallace	*Ch. E.*	*Portsmouth*
Burnham, Robert Francis	*M. E.*	*Durham*
Burpee, Dorothy Follansby	*A. G.*	*Exeter*
Burpee, Willena Florence	*A. G.*	*Newport*
Buswell, William Walton	*M. E.*	*Salisbury, Mass.*
Calder, Lillian Florence	*A. G.*	*Arlington, Mass.*
Calderwood, Donald Cameron	*Engr.*	*Nashua*
Callahan, John Russell	*E. E.*	*Wakefield, Mass.*
Carli, Armando Ralph	*A. G.*	*Malden, Mass.*
Carlisle, Kenneth Dudley	*A. G.*	*Northwood Center*
Carpenter, John Thurston	*A. Cn.*	*Nashua*
Carter, Benjamin Edwin	*A. G.*	*Portland, Me.*
Cash, Margaret Dorothy	*A. G.*	*Dover*
Cassily, Catherine Mary	*A. G.*	*Dover*
Caswell, Maurice Harold	*Engr.*	*Strafford*
Chapleau, Albert Joseph	*A. G.*	*Rutland, Vt.*
Chaplin, Charles Frederick	*A. G.*	*Nashua*
Chase, Charles Elroy	*Engr.*	*North Stratford*
Chipman, Walter Albert, Jr.	*A. G.*	*Manchester*
Clark, George Henry	*A. G.*	*Worcester, Mass.*
Clark, Leslie James	*E. E.*	*Medford, Mass.*
Clark, Leslie Martin	*A. Cn.*	*Manchester*
Clarke, Ernest Jennings, Jr.	*Agr.*	*Lynnfield Center, Mass.*
Clarke, Frank Kenneth	*A. G.*	*Canaan*
Clay, John Arthur	*A. G.*	*Milford*
Cleland, Philip Augustus	*E. E.*	*Malden, Mass.*
Coe, Helen Jewell	*A. G.*	*Newfields*
Cohen, Harry Marcus	*A. G.*	*Manchester*
Colby, Alden Downs	*For.*	*Danville*
Colby, Arvin Bradley	*Engr.*	*Concord*
Colby, Lewis Ellsworth	*Engr.*	*Lakeport*
Colby, Nathaniel Henry	*E. E.*	*New London*
Cole, Joseph	*M. E.*	*Dover*
Coleman, George Ephriam	*Agr.*	*Peabody, Mass.*
Collins, Ralph Wallace	*A. G.*	*Hampstead*
Colman, Charles David	*A. G.*	*Rochester*
Colovos, Nicholas Filip	*For.*	*Manchester*
Connor, Clyde Cedric	*M. E.*	*Henniker*

Name	Course	P. O. Address
Cook, Charles Atkinson	*For.*	*Newburyport, Mass.*
Cothran, Harold Duane	*A. G.*	*Youngstown, N. Y.*
Cotton, Dana Meserve	*A. G.*	*Gorham, Me.*
Courser, Edith Jeannette	*A. G.*	*Warner*
Couser, William Griffith	*A. G.*	*Dover*
Craig, Ralph Briry	*A. G.*	*Pittsfield, Me.*
Cram, Clifton Swett	*A. G.*	*Pittsfield*
Crowell, Albert Otis	*A. G.*	*Wakefield, Mass.*
Crowell, Paul Gilman	*A. G.*	*Concord*
Crowley, Helen	*A. G.*	*Fall River, Mass.*
Currie, James Carlton	*Ch. E.*	*Biddeford, Me.*
Currier, Alton Chauncey	*A. G.*	*Fairlee, Vt.*
Curtis, Harry Melville, Jr.	*Agr.*	*Swampscott, Mass.*
Daguino, Edmond Frederick	*A. G.*	*Wakefield, Mass.*
Danforth, Clifton Abbott	*A. G.*	*Warner*
Daniels, Forsaith	*A. Cn.*	*Manchester*
Day, John Woodberry	*A. G.*	*Beverly, Mass.*
Dearborn, Roland Balch	*Agr.*	*New Boston*
Dearington, Searls	*A. G.*	*Everett, Mass.*
Derby, Carl Calvin	*E. E.*	*Peterboro*
deRochemont, Harry	*A. G.*	*Portsmouth*
Desautels, Corinne Virginia	*H. E. Tr.*	*Nashua*
Dicey, Irving Tilton	*M. E.*	*East Derry*
Dickson, Alexander, Jr.	*A. G.*	*Amesbury, Mass.*
Dickson, George Trenholme	*A. G.*	*Colebrook*
Dimock, Morris Welton	*A. G.*	*Portsmouth*
Dionne, Isabelle Rita	*A. G.*	*Nashua*
Dodge, Carolyn Ella	*A. G.*	*New Boston*
Dolan, Mary Agnes	*A. G.*	*Nashua*
Dolan, Robert Francis	*A. Cn.*	*Wayland, Mass.*
Donnell, Francis Winthrop	*E. E.*	*Hampton*
Donovan, Frances	*A. G.*	*Braintree, Mass.*
Duffy, Arthur Daniel	*Ch. E.*	*Lynn, Mass.*
Dunlop, Alan Farr	*A. G.*	*Auburndale, Mass.*
Dustin, Ralph Clement	*E. E.*	*Penacook*
Dyment, Ray Alexander	*I. E.*	*Concord*
Eagan, Francis Moran	*A. Cn.*	*Huntington, Mass.*
Eastman, Charles Avery	*A. G.*	*Portsmouth*
Eastwood, Medora Viola	*A. G.*	*Plymouth, Mass.*

Name	Course	P. O. Address
Eaton, Hazel Winnifred	*A. G.*	*Portsmouth*
Eckford, May	*A. G.*	*Methuen, Mass.*
Eddy, Earl Eugene	*A. G.*	*Derry*
Edgerly, Livonia B.	*A. G.*	*Mirror Lake*
English, James Hugh	*A. G.*	*Manchester*
Eno, Eldora Emma	*A. G.*	*Exeter*
Evans, Joseph Andrew	*Agr.*	*Lawrence, Mass.*
Fairchild, Frances Faith	*A. G.*	*White Plains, N. Y.*
Fanning, John Joseph	*A. G.*	*Danvers, Mass.*
Farnsworth, Thornton Sykes	*A. G.*	*Worcester, Mass.*
Farr, Annie Gertrude	*A. G.*	*North Weare*
Farrar, Elbert Raymond	*Agr.*	*Hillsboro*
Fearon, William Edson	*E. E.*	*Whitefield*
Ferguson, Samuel Morgan	*A. G.*	*Goffstown*
Fitch, Alice Lila	*A. G.*	*Claremont*
Fitzgerald, John Patrick	*M. E.*	*Dover*
FitzGerald, Richard A.	*A. G.*	*Manchester*
Fitzpatrick, Charles Francis	*Engr.*	*Manchester*
Fleming, William John	*A. G.*	*Brookline, Mass.*
Fluet, Lawrence Joseph	*M. E.*	*Dover*
Flynn, Dorothy	*A. G.*	*Berlin*
Folsom, Russell Willand	*E. E.*	*Dover*
Foote, Lewis Ford	*A. G.*	*Holyoke, Mass.*
Foss, Warren Gorham	*I. E.*	*Suncook*
French, Wilford Albion	*E. E.*	*Sanbornville*
Frizzell, Burton Leo	*Agr.*	*Colebrook*
Frost, Atherton Wingate	*A. G.*	*East Andover*
Frost, Lore Alford	*E. E.*	*Windham*
Frothingham, Robert Henry	*A. G.*	*Portland, Me.*
Galvin, Vernon Vincent	*A. G.*	*Fall River, Mass.*
Garvey, Leo Francis	*I. E.*	*Dover*
Gaskins, Arthur Lawrence	*A. G.*	*Milton, Mass.*
Gelpke, William Joseph	*Engr.*	*Manchester*
George, Charles Adna	*Agr.*	*Contoocook*
George, Henry Carleton	*A. G.*	*Nashua*
Gerrish, Grace Elizabeth	*A. G.*	*Dover*
Gill, McLean John	*A. G.*	*Woodsville*
Gilmore, Harold Edgar	*E. E.*	*Exeter*
Gitelman, William	*A. G.*	*Pittsfield, Mass.*

Name	Course	P. O. Address
Glancy, John Delancy	*A. G.*	*Manchester*
Goldberg, Charles	*A. G.*	*Peabody, Mass.*
Goold, Pierce Edmund	*A. G.*	*Hanover*
Gordon, Reginald Cook	*A. G.*	*Brunswick, Me.*
Gove, Beatrice Esther	*A. G.*	*Hanover*
Gresley, Lillian	*A. G.*	*Manchester*
Griffin, Albert L.	*A. G.*	*Portsmouth*
Hall, Florence Ellen	*A. G.*	*Keene*
Hammerstrom, George Albert	*A. G.*	*Gossville*
Harkins, Margaret M.	*A. G.*	*Dover*
Harris, Gladys Annie	*A. G.*	*Manchester*
Hartshorn, Pearl Editha	*A. G.*	*Mont Vernon*
Hatch, Herbert Oren, Jr.	*A. G.*	*Sanbornville*
Hatch, Rexford Laurence	*Agr.*	*East Jaffrey*
Hayden, Leslie Forrest	*Agr.*	*Newfields*
Hazel, Frank Wylie	*A. G.*	*Manchester*
Heald, Benjamin	*A. G.*	*Manchester*
Healy, John James	*Ch. E.*	*Rochester*
Heath, Doris	*A. G.*	*Ponemah*
Hemingway, Ellis Lewis	*A. G.*	*Berwick, Me.*
Henault, Norman Joseph	*A. G.*	*Norwich, Conn.*
Herlihy, Walter Cecil	*A. G.*	*Derry Village*
Higgins, Kenneth Edward	*A. G.*	*Lewiston, Me.*
Hill, Margaret Evelyn	*A. G.*	*Franklin*
Hixon, Stanley Radcliffe	*A. G.*	*Worcester, Mass.*
Hoagland, William Lloyd	*A. G.*	*Dedham, Mass.*
Hodge, Lucille Clarke	*A. G.*	*Concord*
Hodges, Stephen Emmons	*Agr.*	*Newton, Mass.*
Hoitt, Samuel Waldo	*Engr.*	*Durham*
Holt, Clarence Dodge	*Ch. E.*	*New Boston*
Holt, Esther	*A. G.*	*Suncook*
Hooper, William Gutley	*A. Cn.*	*Portland, Me.*
Hopkins, Walter Scott, Jr.	*A. G.*	*Reading, Mass.*
Horne, Roger Bigelow	*Engr.*	*Millbury, Mass.*
Horton, Alden Russell	*A. G.*	*Portsmouth*
Hourihane, Cecelia Marie	*A. G.*	*Somersworth*
Hourihane, Ellen Wren	*A. G.*	*Somersworth*
Howe, Lloyd Sanborn	*Engr.*	*Concord, Mass.*
Hultman, Stanley	*A. Cn.*	*Brockton, Mass.*

Name	Course	P. O. Address
Humphrey, Helen	*A. G.*	*Ipswich, Mass.*
Hunt, Anna Calvert	*A. G.*	*Nashua*
Hunt, Henry	*A. G.*	*Sanford, Me.*
Huntley, Ira Alton	*E. E.*	*Keene*
Huntoon, Grovenor Ariel	*E. E.*	*Contoocook*
(Hurd), Valmore Balfour	*A. G.*	*Beverly, Mass.*
Hurley, Andrew Gordon	*A. G.*	*Portsmouth*
Hutchins, John Welsh	*A. G.*	*Whitman, Mass.*
Hutchins, William James	*A. G.*	*Portsmouth*
Ide, Nicolas Philip	*For.*	*Wayland, Mass.*
Ingalls, Carroll Herbert	*A. G.*	*North Haverhill*
Jackson, Alison Hathaway	*A. G.*	*Marblehead, Mass.*
Jackson, Joseph Wallace	*A. G.*	*West Roxbury, Mass.*
Jackson, Waldo Philip	*Hort.*	*Manchester*
Jazukawiz, Thomas Walter	*A. G.*	*Greenwood, Mass.*
Jenkins, Ralph Richards	*Agr.*	*Lowell, Mass.*
Johnson, Barney George	*A. Cn.*	*Berlin*
Johnson, Paul Shattuck	*A. G.*	*Stoneham, Mass.*
Jones, Helen Gwendolyn	*A. G.*	*Concord*
Jordan, Harland Carl	*A. Cn.*	*Berlin*
Keeher, Thomas Francis, Jr.	*A. Cn.*	*Newport, R. I.*
Keenan, Alice Julia	*A. G.*	*Penacook*
Kelley, Ethel Etta	*A. G.*	*Manchester*
Kelsea, Oscar George	*A. G.*	*Colebrook*
Kennedy, Mary Josephine	*A. G.*	*Somersworth*
Keough, George Harland	*A. G.*	*Gorham*
KillKelley, James Roy	*M. E.*	*Wilton*
KillKelley, Thomas Joseph, Jr.	*Engr.*	*Nashua*
Kimball, Kenneth Robie	*A. G.*	*Concord*
Kimball, Ralph Lawson	*I. E.*	*Somersworth*
Kimball, Roy George	*A. G.*	*Enfield*
Kinsman, Emma Lena	*A. G.*	*Somersworth*
Kramer, Samuel Harry	*Engr.*	*Springfield, Mass.*
Kunz, Gordon Howard	*A. Cn.*	*Jamaica Plain, Mass.*
Langdell, Merritt Raymond	*M. E.*	*Manchester*
Langford, Anice Elizabeth	*A. G.*	*East Candia*
Larson, Norman Luther	*A. Cn.*	*Berlin*
Layne, Haven Dwight	*A. G.*	*Dover*
Learned, Theda Louise	*A. G.*	*Woodsville*

Name	Course	P. O. Address
Lee, Dana Huntley	*Agr.*	*Concord*
LeFave, Edward Bernard	*A. G.*	*Wakefield, Mass.*
Legate, Philip Dexter	*A. G.*	*Charlemont, Mass.*
Lewis, Crosby Holt	*Agr.*	*Concord*
Lewis, Howard Andrew	*A. G.*	*New Ipswich*
Lewis, Paul Herbert	*A. G.*	*Concord*
Lewis, Steven Asa	*E. E.*	*Winchester*
Lightbown, James Pearson	*A. G.*	*Fall River, Mass.*
Littlefield, Ralph Batchelder	*For.*	*Salem*
Lord, George David	*A. G.*	*Milton*
Lord, Richard Theodore	*E. E.*	*North Berwick, Me.*
Lovering, Marguerite	*A. G.*	*Farmington*
McCabe, Philip Edward	*A. G.*	*Dover*
McCarthy, Irene Elizabeth	*A. G.*	*Manchester*
McDonald, John Joseph	*Ch. E.*	*Dover*
McDonough, John Charles	*A. G.*	*Manchester*
McDuffee, Richard	*A. G.*	*Rochester*
McGrail, Thomas Henry	*A. G.*	*Dover*
McLeod, Donald Kenneth	*P. H.*	*Peterboro*
McMorrow, William Francis	*A. G.*	*Lawrence, Mass.*
Mallard, James Clark	*E. E.*	*Salem, Mass.*
Mallen, Richard James	*A. Cn.*	*Dover*
Marnoch, Margaret Shaw	*A. G.*	*Dover*
Marsden, Edwin Leroy	*M. E.*	*Spencer, Mass.*
Marston, Norman Oswald	*A. G.*	*North Hampton*
Martin, Arme Cunningham	*A. G.*	*Hartland, Vt.*
Mason, Clinton Kenneth	*A. G.*	*Keene*
Mason, Laurence Everett	*A. G.*	*Marlboro*
Mason, Muriel Ruth	*A. G.*	*Keene*
Massucco, Ernest Dorninic	*A. G.*	*Montpelier, Vt.*
Matthews, Daniel Joseph	*A. G.*	*Manchester*
Matthews, Leo Alphonsus	*A. G.*	*Medford, Mass.*
Meloon, Cathleen Ivan	*A. G.*	*Portsmouth*
Miller, Lee Norman Richards	*A. Cn.*	*Weymouth, Mass.*
Minners, Howard	*Agr.*	*Brooklyn, N. Y.*
Minot, Jonas, Jr.	*M. E.*	*Bath*
Moncrieff, Arthur Melvin	*E. E.*	*Wakefield, Mass.*
Moody, Frank Bailey	*E. E.*	*Dover*
Mooney, Chester Ernest	*A. G.*	*West Canaan*

Name	Course	P. O. Address
Moore, Winthrop Perkins	*A. G.*	*Sharon, Mass.*
Morris, Albert N.	*A. G.*	*Berlin*
Morse, Ernest Freeman	*A. G.*	*Brunswick, Me.*
Moulton, Nathalie Marion	*A. G.*	*Portsmouth*
Mountain, Pauline Letitia	*A. G.*	*Berlin*
Moylan, Clare Patricia	*A. G.*	*Dorchester, Mass.*
Munroe, Edward Mansfield	*M. E.*	*Peabody, Mass.*
Nagel, Charles Fred	*A. G.*	*Beverly, Mass.*
Neville, John Patrick	*A. G.*	*Portsmouth*
Newcomb, Russell Frederick	*For.*	*Newport*
Newell, Thelma Katherine	*A. G.*	*Whitefield*
Nichols, Lee Page	*A. G.*	*Rutland, Vt.*
Nixon, Robert James	*A. G.*	*Pembroke*
Nutter, Arthur Preston	*A. G.*	*Sanford, Me.*
Nutting, Judson Bonner	*A. G.*	*Caldwell, N. J.*
O'Brien, William Francis	*A. G.*	*Lynn, Mass.*
O'Connor, Edward Leo	*A. G.*	*Peabody, Mass.*
O'Connor, John Alford	*A. G.*	*Holyoke, Mass.*
Ojala, John Victor	*Agr.*	*East Jaffrey*
O'Kane, Catherine VandeWater	*A. G.*	*Durham*
O'Leary, Maurice John	*A. G.*	*Portsmouth*
O'Leary, Otho Francis	*A. G.*	*Newfields*
Olmstead, Robert Taft	*A. G.*	*Brewster, Mass.*
Osborne, Henry Thorndike	*Agr.*	*North Weare*
Osgood, Alice Louise	*A. G.*	*Pittsfield*
Pearson, Oscar George	*A. G.*	*Lynn, Mass.*
Pickford, Thomas Arnold	*E. E.*	*Berlin*
Pike, Helen Elizabeth	*H. E. Tr.*	*Epping*
Page, Harry Oliver	*A. G.*	*Swampscott, Mass.*
Page, Robert Wellington	*A. G.*	*Malden, Mass.*
Paige, Catherine Eliza	*A. G.*	*North Weare*
Paige, Edna May	*A. G.*	*North Weare*
Palisoul, Arthur Henry	*Engr.*	*Manchester*
Patten, Roger William	*Agr.*	*Framingham, Mass.*
Perkins, Alice May	*A. G.*	*Dover*
Perkins, Ralph Taylor	*Agr.*	*Winchester, Mass.*
Perkins, Theodore Jacob	*Agr.*	*Meredith*
Perry, Elliot William	*E. E.*	*South Natick, Mass.*
Peterson, Oliver Anthony	*A. G.*	*Portsmouth*

Name	Course	P. O. Address
Phelps, Robert Thayer	*Ch. E.*	*Jefferson*
Philbrick, Earle Dexter	*A. G.*	*Berlin*
Pickwick, George Bradley	*E. E.*	*Manchester*
Pierce, Aubrey Roger	*Engr.*	*Springvale, Me.*
Pinkham, Austin Marston	*A. G.*	*Somerville, Mass.*
Pinkham, Rolland Francis	*A. G.*	*Dover*
Pitts, Thomas Michael	*A. G.*	*Concord*
Poor, Bernice Lillian	*A. G.*	*Atkinson*
Pressey, Walton Carlos	*E. E.*	*New London*
Prince, William Morris	*A. G.*	*New Boston*
Printy, John Senley	*A. G.*	*Dover*
Proudman, William	*E. E.*	*West Roxbury, Mass.*
Pulsifer, Walter Trueman	*A. G.*	*Dover*
Quinn, Maurice Alton	*A. G.*	*Concord*
Record, Louis DeWitt, Jr.	*Engr.*	*Nashua*
Reed, Roger Allbee	*M. E.*	*Woodsville*
Reekie, Norman Webster	*Engr.*	*Hudson*
Remick, Edwin Crafts	*A. G.*	*Tamworth*
Reynolds, Robert Hodgkins	*A. G.*	*Dover*
Rhodes, Margaret Esther	*A. G.*	*Brookline, Mass.*
Richardson, William Frederick	*Engr.*	*Gonic*
Roberts, Samuel Woodbury	*E. E.*	*Wakefield*
Robinson, Frederick LeBaron	*A. G.*	*Brookline, Mass.*
Robinson, Max George	*A. G.*	*North Haverhill*
Rodden, Clement James	*Ch. E.*	*Dover*
Rolfe, Mary Florence	*A. G.*	*Penacook*
Rowe, Bernice Lydia	*A. G.*	*Fremont*
Russell, Charles Henry	*Agr.*	*Winthrop, Mass.*
Russell, Howard Irving, Jr.	*A. G.*	*Manchester*
Russell, Robert Alexander	*For.*	*Woodstock*
Rutter, Robert Franklin	*A. G.*	*Portsmouth*
Ryan, Harold Francis	*A. G.*	*Portsmouth*
St. Clair, Roger Couch	*E. E.*	*Portsmouth*
Sanborn, Victor Paul	*A. G.*	*Topsfield, Mass.*
Sawyer, George Webster	*A. G.*	*Franklin*
Sayward, Wallace Dana	*Engr.*	*Lancaster*
Schiavoni, Vincent Henry	*A. G.*	*Haverhill, Mass.*
Schlenker, Frank Stott	*Agr.*	*Haverhill, Mass.*
Scribner, Caryl Edith	*A. G.*	*Boscawen*

Name	Course	P. O. Address
Seavey, Leonard Rand	*Engr.*	*Rye Center*
Sentner, Robert Verrill	*Ch. E.*	*Dover*
Sharples, Robert Edmond	*A. Cn.*	*Newmarket*
Shaw, Arthur Hughes	*A. G.*	*Brooklyn, N. Y.*
Shaw, Maximilian Colin	*A. G.*	*Salem, Mass.*
Shedd, Albert Harrington	*A. G.*	*Winthrop, Mass.*
Shepard, Rachel Elizabeth	*A. G.*	*West Epping*
Sheridan, Hugh William	*A. G.*	*Winchester*
Shinnick, Edward Michael	*For.*	*Danvers, Mass.*
Sibley, Laurence Chapell	*A. G.*	*Amherst*
Simmons, Emily Blanchard	*A. G.*	*New Ipswich*
Simon, Moses I.	*A. G.*	*Salem, Mass.*
Simpson, John Roger	*A. G.*	*Newton, Mass.*
Simpson, Lloyd Atherton	*A. G.*	*Concord*
Slayton, Foster Herbert	*A. G.*	*Barre, Vt.*
Sleeper, Cleveland, Jr.	*A. G.*	*Orlando, Fla.*
Small, Isaiah Adelbert, Jr.	*A. G.*	*Provincetown, Mass.*
Smalley, Frederick Christopher	*Agr.*	*Dover*
Smart, Edward Charles	*E. E.*	*Center Ossipee*
Smith, Charlotte Marie	*A. G.*	*Dover*
Smith, Claire Elisabeth	*A. G.*	*Center Sandwich*
Smith, Dorothy Tuck	*A. G.*	*Hudson*
Smith, Evelyn Hope	*A. G.*	*Manchester*
Smith, Joseph Albert	*A. G.*	*Greenwich, Conn.*
Smith, Langdon Cornwall	*A. G.*	*Middletown, Conn.*
Smith, Maurice Basil	*M. E.*	*North Hampton*
Smith, Robert Elbridge	*A. G.*	*Franklin*
Snyder, Clarence Eber	*A. G.*	*Berlin*
Soule, Leon Leslie	*A. G.*	*Brunswick, Me.*
Southmayd, Clarendon Lester	*M. E.*	*Franklin*
Spaulding, Claude Cary	*Agr.*	*Montpelier, Vt.*
Spencer, Raymond Brownson	*A. G.*	*Rutland, Vt.*
Spillane, Charles Jerremiah	*E. E.*	*Newmarket*
Stackpole, George Herbert	*E. E.*	*Exeter*
Stanwood, Mary	*A. G.*	*Beverly Farms, Mass.*
Stevens, Philip Laurence	*A. G.*	*East Wakefield*
Stevens, Ruth Cornelia	*A. G.*	*Nashua*
Stewart, Thomas Armour	*Engr.*	*Derry*
Stone, Fred Byron	*E. E.*	*Dover*

Name	Course	P. O. Address
Straker, Melville Proctor	*A. G.*	*North Attleboro, Mass.*
Straw, Raymond Williams	*Engr.*	*Contoocook*
Symonds, Benjamin Shapleigh	*A. G.*	*Salem, Mass.*
Tansey, Joseph Eugene	*A. G.*	*Marblehead, Mass.*
Tappan, Thomas Capron	*E. E.*	*Chester*
Tatarcuk, Albert Joseph	*E. E.*	*Nashua*
Terrio, Oscar James	*A. G.*	*Everett, Mass.*
Thomas, A. Janette	*H. E.*	*Durham*
Thompson, George Albert	*Engr.*	*Manchester*
Thompson, George Clifford	*E. E.*	*Hudson*
Thompson, Helen	*A. G.*	*Worcester, Mass.*
Thompson, Wilbur Emons	*Agr.*	*Wilmot Flat*
Thompson, William Norris	*A. G.*	*Nashua*
Tibbetts, Elizabeth	*A. G.*	*Somerville, Mass.*
Tobey, Louise	*A. G.*	*Wolfeboro*
Tomasian, Thomas	*E. E.*	*Nashua*
Tripp, Russell Fowler	*A. G.*	*Short Falls*
Trombly, Napoleon Arthur	*E. E.*	*Concord*
Trudell, Edmund Albert	*A. G.*	*Concord*
Trumbull, Bertron Albee	*Ch. E.*	*Rockingham*
Tuttle, Victor Nester	*Agr.*	*Northwood*
Varney, Gilbert Leslie	*For.*	*Plymouth*
von Rosenvinge, Melvin Wilhelm	*A. G.*	*Everett, Mass.*
Waite, Frederick	*Ch. Engr.*	*Allston, Mass.*
Walbridge, Dorrance Edwin	*M. E.*	*Enfield*
Wales, Gardner Howard	*A. G.*	*Penacook*
Wallace, John McCron	*A. G.*	*Manchester*
Wallace, Todd Bryce	*A. Cn.*	*Newton Highlands, Mass.*
Wallin, Carl Gustaf	*Engr.*	*Wolfeboro*
Warren, George Churchill	*A. G.*	*Somerville, Mass.*
Webber, Ruth L.	*A. G.*	*Springvale, Me.*
Wells, True Franklin	*A. G.*	*Epping*
Wentworth, Irene Martin	*A. G.*	*Somersworth*
Wentworth, Roland Leslie	*Engr.*	*Dover*
Wheeler, Edward Franklin	*A. Cn.*	*Nashua*
Whitcher, Martha	*A. G.*	*Concord*
White, Elizabeth Alice	*A. G.*	*Rye Beach*
White, William Prescott	*Ch. E.*	*Rye Beach*
Whyte, Russell Paul	*A. G.*	*Lancaster*

Name	Course	P. O. Address
Wiggin, Stanley Lyman	*E. E.*	*Gonic*
Wightman, Henry George	*Hort.*	*Walpole*
Wilder, Evan Adams	*E. E.*	*Keene*
Wilkinson, Randolph Hyde	*A. G.*	*Lyme*
Wilkinson, Richard Hill	*Agr.*	*West Medway, Mass.*
Willard, Herbert Andrew	*Agr.*	*Temple*
Willard, Mervin Edwin	*Agr.*	*Temple*
Willgeroth, George Edward	*Agr.*	*Hillsboro*
Williams, Chester Elmer	*E. E.*	*Newcastle*
Williams, Richard Harvey	*A. G.*	*Hudson, Mass.*
Wilmot, Manly A.	*A. G.*	*Enfield*
Wilson, Arthur Rowe	*M. E.*	*Manchester*
Wilson, Norman Thurlow	*Engr.*	*Newburyport, Mass.*
Wilson, Ralph Brockett	*E. E.*	*Townsend, Mass.*
Wilson, Ralph Minot	*A. G.*	*Manchester*
Wilson, Robert McCrae	*E. E.*	*Portsmouth*
Winchester, Edgar Starrett	*Ch. E.*	*Everett, Mass.*
Winer, Isidore	*E. E.*	*Berlin*
Woodman, Margaret Cushman	*A. G.*	*Wakefield, Mass.*
Wright, Lawrence Whitney	*Ch. E.*	*Keene*
Wright, Linwood Arlon	*A. Cn.*	*Sanford, Me.*
Wyman, Eliot	*A. G.*	*Manchester*
Young, Frank Henry	*Ch. E.*	*Dover*
Young, Herbert Wilton	*Agr.*	*Temple*

TWO-YEAR AGRICULTURAL MEN

Second Year

Name	P. O. Address
Glines, Raymond	*Canterbury*
Hatch, Henry Joseph	*North Conway*
Little, William Haven	*Rumney*
Locke, George M.	*Alton*
Neal, Granville Wyman	*Newfields*
Otterson, Ralph Cate	*Manchester*
Penniman, Harold Smith	*Claremont*
Robie, Lawrence William	*Bristol*
Simonds, Lewis Warren	*Antrim*

First Year

Name	P. O. Address
Andrews, Clifford Spence	*Berwick, Me.*
Biathrow, Harry Burton	*Enfield*
Boothby, Raymond Arthur	*Berlin*
Boyle, Fred P.	*Lincoln*
Davis, Arthur Newbury	*Derry*
Dudley, David Freeman	*Concord*
Fearon, Perley Eugene	*Beecher Falls, Vt.*
George, Arthur Carlton	*East Andover*
Grace, Will Anslo, Jr.	*Concord*
Groux, George Adolphus	*Epping*
Iwanick, I. Walter	*South Hampton*
Jackson, Stanley French	*Brockton, Mass.*
Kimball, Elmer Runnells	*Dover*
Legge, Ralph Clyde	*East Weare*
McIntire, Clinton Chester	*Jefferson*
Merrill, Fred Rounsevel	*Hudson*
Morey, Charles Henry	*Bemis*
Neal, William Joseph	*Meredith*
Pinkham, Daniel Roger	*Lancaster*
Porter, Lewis Holmes	*Malden, Mass.*
Price, Edward Lewis	*Madbury*
Quimby, Olney Adams	*Claremont*
Sanders, John Hayes	*Dover*
Sandquist, Oscar	*Concord*
Stannard, George Walter	*Manchester*
Wentworth, Warren Gilbert	*Dover*

SPECIALS

Name	Course	P. O. Address
Bailey, Louise	*A. G.*	*Suncook*
Barker, Robert Timothy	*Agr.*	*Hampton*
Barton, Carlton Claudius	*A. G.*	*Croydon*
Beane, Doris	*A. G.*	*Newington*
Brady, Joseph Vincent	*A. G.*	*Durham*
Churchill, Evadne Ruth	*A. G.*	*Durham*
Colbert, William Joseph	*Agr.*	*Portsmouth*
Corwin, Esther Hunt	*A. G.*	*Haverhill, Mass.*

SHORT COURSE—POULTRY

Name	Course	P. O. Address
Cotie, Daniel Leo Vincent	*A. G.*	*Newburyport, Mass.*
Crowell, Milton Frederick	*Agr.*	*Durham*
Cummings, Doris Emma	*A. G.*	*Plymouth*
Daniel, L. Marjorie	*A. G.*	*Greenland*
Davidson, Maurice Hurch	*A. G.*	*Portland, Me.*
DeMeritt, John Waterman	*Engr.*	*Exeter*
Erickson, Lawrence	*A. G.*	*Durham*
Ford, Robert	*A. G.*	*Danbury*
Fuller, Elsie Kate	*A. G.*	*Durham*
Giddings, Horace Alpheus	*Engr.*	*Conway*
Greenleaf, John Langley	*Agr.*	*Plymouth*
Grimes, Ida Millay	*Engr.*	*Durham*
Hepler, Jesse Raymond	*Agr.*	*Durham*
Huggins, Gratia Thrasher	*A. G.*	*Durham*
Kendall, Marjorie Foster	*A. G.*	*Durham*
Kerans, George Plummer	*Agr.*	*Danvers, Mass.*
Leavitt, Elizabeth	*A. G.*	*Exeter*
MacCombie, Albert Lincoln	*Agr.*	*Stoughton, Mass.*
McManus, Thomas	*Agr.*	*Woburn, Mass.*
Marshall, John Cheney	*Agr.*	*Laconia*
Martin, Charles J.	*Agr.*	*Worcester, Mass.*
Michaloplos, Theodore Soterius	*A. G.*	*Dover*
Moody, George Fallows	*A. G.*	*Portsmouth*
Owen, Henry Weston	*Agr.*	*Saco, Me.*
Piper, Ethel Hoyt	*A. G.*	*Portsmouth*
Piper, Walter Irving	*A. G.*	*Portsmouth*
Raymond, Marcus Leroy	*Agr.*	*Coventry, R. I.*
Schnackenberg, Lee Judson	*E. E.*	*Durham*
Scudder, Delia I.	*A. G.*	*Durham*
Studley, Mildred Beaupre	*A. G.*	*Durham*
Vigus, George Edward	*Agr.*	*Hallowell, Me.*
Vorperian, Hovhanes Hanabedian	*Agr.*	*Durham*
Wiggin, Herbert Austin	*Engr.*	*Norwood, Mass.*
Young, Ruth Adelaide	*A. G.*	*Wolfeboro Falls*

SHORT COURSE—POULTRY

Name	P. O. Address
Barker, Robert Timothy	*Hampton*
Chamberlin, Raymond Edward	*Concord*

Name	P. O. Address
Davis, Everett Warren	*Milford*
Hamel, Donald	*Bedford*
McAlpine, Edgar Kenneth	*Exeter*
Marty, George	*Manchester*
Owen, Henry Weston	*Biddeford, Me.*
Roberts, George Williams	*North Conway*

SUMMER SCHOOL, 1923

Adams, Grace Louise	*East Providence, R. I.*
Agrafiotis, Chris John	*Manchester*
Akmakjian, Elliott	*Salem Depot*
Allen, Harriet Whitney	*Durham*
Andrews, Arthur Wesley	*Concord*
Archer, Margaret Aline	*Mt. Vernon, N. Y.*
Atkinson, Norman Stanley	*Durham*
Averill, George Warren	*Salem Depot*
Babcock, Mabel	*Durham*
Bader, Edward Charles	*Penacook*
Bailey, Justus Conant	*Haverhill*
Barber, Richard Robbins	*Montpelier, Vt.*
Barry, Helen Louise	*Haverhill, Mass.*
Bean, Joseph Demeritt	*Rochester*
Bingham, Robert P.	*Manchester*
Borah, Delmer Frederic	*Rutland, Vt.*
Boucher, Kathryn Natalie	*Lancaster*
Brady, Joseph Vincent	*Malden, Mass.*
Buchanan, Walter Gray	*Bernardston, Mass.*
Burns, Leslie Arthur	*Westminster, Mass.*
Caron, Alfred Armand	*Manchester*
Castle, Willard Medford	*Melrose, Mass.*
Chandler, Lawton Brown	*Concord*
Chase, Donovan Edgar	*Woodsville*
Choate, Harold Fairbanks	*Durham*
Clark, Stanley Leffingwell	*Concord*
Colbert, William Joseph	*Portsmouth*
Connor, Regina	*Newmarket*
Connors, Elizabeth Ann	*Peekskill, N. Y.*
Cox, Ralph Everett	*Portsmouth*
Cressey, Wolcott Hale	*Beverly, Mass.*

Name	P. O. Address
Cummings, John	*Danbury*
Curtis, Glenna Frances	*Manchester*
Cuthbertson, Doris Bertha	*Valley Falls, R. I.*
Dalzell, Charles Davies	*Weare*
Dalzell, Mary Jane	*Somerville, Mass.*
Daniell, Robert Lovekin	*Franklin*
Davy, Mary Catherine	*Manchester*
Dawson, Andrew McGrouther	*Andover*
Dodge, Catherine Elizabeth	*Contoocook*
Doe, Chester Winfield	*Center Strafford*
Donahue, Hugh Carroll	*Haverhill, Mass.*
Dooley, Helen Ward	*Somersworth*
Dugas, Mabel Julia	*East Dixfield, Me.*
Dyment, Ray Alexander	*Concord*
Elwell, William Bassett	*Waterbury, Conn.*
Emerson, Reginald Hill	*Fitzwilliam*
Erickson, Lawrence	*Durham*
Fagan, Margaret Mary	*Waterbury, Conn.*
Farnum, Grace Alma	*Danbury*
Foster, Florence Josephine	*Walpole*
French, Charles Cyrus	*Laconia*
Furner, Florence Elizabeth	*West Ossipee*
Garvey, Anna Patricia	*Holyoke, Mass.*
Geremonty, Francis Howard	*Stoneham, Mass.*
Goldman, Helen Judith	*New York, N. Y.*
Graham, Edward Dewey	*Durham*
Grimes, Eustis Bernard	*Belmont, Mass.*
Hanney, John Charles	*Manchester*
Harkins, Margaret Mary	*Dover*
Hartford, Marjorie Laura	*Dover*
Hauser, Bertram Julius	*Ridgefield Plains, N. J.*
Hayden, William Orlando	*Springvale, Me.*
Heller, Samuel Earle	*Claremont*
Henderson, Edna	*Durham*
Henderson, Ruth Evelyn	*Durham*
Hennessey, Marion Regina	*North Tarrytown, N. Y.*
Hinckley, Russell Crocker	*Cambridge, Mass.*
Holmes, Clayton William	*Durham*
Horne, Charles Edwin	*Millbury, Mass.*

Name	P. O. Address
Huckins, John Leslie	*Rochester*
Huff, Richard Sherman	*Kennebunk, Me.*
Knapp, Florence Merrill	*Lebanon*
Krook, William Cleon	*West Hartford, Conn.*
Langley, Mildred Mae	*Durham*
Levett, Sidney	*Durham*
Levingston, Oscar	*Concord*
Lewis, Frank Herbert	*Berlin*
Libbey, Henry Hale	*Reading, Mass.*
Littlefield, Robert Lincoln	*Colebrook*
Lombard, Bernice May	*Winchester*
McAlpine, Edgar Kenneth	*Exeter*
McAlpine, William Harrison	*Exeter*
McDonald, John T.	*Manchester*
McManus, Thomas	*Woburn, Mass.*
Mahoney, John Vencient	*Biddeford, Me.*
Malouf, George Michael	*Ashland*
Mann, Frederic Shite	*East Concord*
Mayo, Irene Seena	*Manchester*
Miner, Grace Lucile	*Lisbon*
Moody, George Fallows	*Portsmouth*
Moran, Clement	*Durham*
Morrill, William Stanley	*Penacook*
Morrison, Clifton Cole	*Ashland*
Muck, George Henry	*Lawrence, Mass.*
Murphy, Nan Catherine	*Haverstraw, N. Y.*
Nutting, Louise	*Manchester*
O'Connell, Kathleen Adelaide	*Troy, N. Y.*
O'Kane, Elizabeth Wells	*Durham*
O'Kane, William Henry	*Durham*
Olson, Astrid Lennea	*Concord*
Osgood, Margaret Lillian	*Concord*
Parks, Maude Ervette	*Norfolk Downs, Mass.*
Pattee, Charles Walter	*Ashland*
Patterson, Anna Alice	*Manchester*
Pennock, Grace Lavinia	*Durham*
Perkins, Anne Estelle	*Berwick, Me.*
Phelps, George Osborn	*Nashua*
Phillips, Herbert	*Littleton*

Name	P. O. Address
Philpott, Louise	*Manchester*
Piper, Ethel Hoyt	*Portsmouth*
Piper, Walter Irving	*Portsmouth*
Platt, Charles Grandison	*Stratford*
Price, Cleora	*Bristol*
Pritchard, Charles Gregory	*Manchester*
Pulsifer, Roy Scott	*Plymouth*
Roberts, James Arnold	*Dover*
Rowe, Charles Winfield	*Sunapee*
Rudd, Carol Corlies	*Durham*
Russell, Bruce Eldridge	*Mont Vernon*
Russell, George Waldron	*Fairfax, Vt.*
Sawyer, Blanche Eliza	*Milford*
Shattuck, Fanny Conant	*Nashua*
Snow, Thomas Leonard	*Claremont*
Spies, Edna Evangeline	*Holyoke, Mass.*
Stewart, Arthur Porter	*Hanover*
Sullivan, George Patrick	*Manchester*
Sullivan, John Patrick	*Manchester*
Tingley, Edythe Mae	*Durham*
Tucker, Harris Wiggin	*Sanbornville*
Turner, Florence Elizabeth	*West Ossipee*
Voyagis, Michael Harry	*Durham*
Walker, Frank Arthur	*Manchester*
Walker, James Edward	*Concord*
Walker, Kent	*Newmarket*
Watson, Ruth Emma	*Dover*
Weston, John Prentiss	*Bennington*
Whalen, Helen Elizabeth	*Hampton*
Whitcomb, Warren	*Bath*
Whiteley, Annie Elizabeth	*Dover*
Whittemore, Hollie Leon	*Londonderry*

SUMMARY OF REGISTRATION, 1923-1924

Regular Courses	Agricultural Division								Arts and Science Division						Engineering Division									
										H. E.														
	Gen.	T. T.	P. H.	A. H.	D. H.	For.	Hort.	Total	Gen.	T. T.	Inst.	Arts Chem.	T. T.	Total	Gen.	Ind.	Ch.	Arch.	E. E.	M. E.	Total	Men	Women	Total
Seniors	13	2	3	2	....	3	4	27	69	5	4	3	....	81	....	7	9	2	7	6	31	102	37	139
Juniors	7	....	2	....	2	2	2	15	68	11	2	4	....	85	....	6	7	3	14	8	38	89	49	138
Sophomores	23	....	1	2	1	3	1	31	140	14	3	5	....	162	6	13	8	8	23	19	77	209	61	270
Freshmen	60	....	....	....	....	4	1	65	211	6	1	6	1	225	12	17	16	15	56	30	146	352	84	436
Graduate	6	....	....	....	....	....	....	6	8	....	....	....	....	8	....	....	....	....	....	....	.....	11	3	14
Special	4	....	9	....	....	2	....	15	18	....	....	1	....	19	2	....	1	1	1	.....	5	30	9	39
Total 4-yr. students	113	2	15	4	3	14	8	153	514	36	10	19	1	580	20	43	41	29	101	63	297	793	243	1,036
Short Courses																								
2d-yr. two year	17	....	....	....	....	....	....	17	.....	....	....	....	....	.....	....	....	....	....	....	.....	.....	17	.....	17
1st-yr. two year	29	....	....	....	....	....	....	29	.....	....	....	....	....	.....	....	....	....	....	....	.....	.....	29	.....	29
Graduates	.....	....	....	....	....	....	....	.....	.....	....	....	....	....	.....	....	....	....	....	....	.....	.....	.....	.....	.....
Specials	.....	....	....	....	....	....	....	.....	.....	....	....	....	....	.....	....	....	....	....	....	.....	.....	.....	.....	.....
Forestry (special)	.....	....	....	....	....	8	....	8	.....	....	....	....	....	.....	....	....	....	....	....	.....	.....	8	.....	8
Summer School	.....	....	....	....	....	....	....	.....	107	....	....	....	....	107	....	....	....	....	....	.....	.....	73	34	107
Total, others	46	....	....	....	....	8	....	54	107	....	....	....	....	107	....	....	....	....	....	.....	.....	168	46	214
Grand total	159	2	15	4	3	22	8	213	621	36	10	19	1	687	20	43	41	29	101	63	297	920	277	1,197
Less duplicates	.....	....	....	....	....	....	....	.....	44	....	....	....	....	44	....	....	....	....	....	.....	.....	36	8	44
Total	159	2	15	4	3	22	8	213	577	36	10	19	1	643	20	43	41	29	101	63	297	884	269	1,153

COMPARATIVE REGISTRATION

	Regular Courses	Summer School and Short Courses	Men	Women	Total
1893–94	64	..	54	10	64
1894–95	93	15	78	30	108
1895–96	83	29	80	32	112
1896–97	88	17	79	26	105
1897–98	82	50	90	42	132
1898–99	82	10	79	13	92
1899–1900	86	33	103	16	119
1900–01	93	32	115	10	125
1901–02	102	29	125	6	131
1902–03	103	18	117	4	121
1903–04	110	24	126	8	134
1904–05	123	36	151	8	159
1905–06	154	41	183	12	195
1906–07	172	38	196	14	210
1907–08	183	20	188	15	203
1908–09	198	33	218	13	231
1909–10	193	55	312	16	248
1910–11	207	73	249	17	280
1911–12	231	84	285	22	315
1912–13	259	95	306	30	354
1913–14	300	103	322	63	403
1914–15	387	131	405	87	518
1915–16	461	192	505	113	653
1916–17	574	92	514	152	666
1917–18	530	32	399	163	562
*1918–19	593	14	439	168	607
1919–20	774	44	631	187	818
1920–21	845	46	682	209	891
1921–22	907	66	759	214	973
1922–23	1036	161	922	275	1197
†1923–24	1146	176	1006	316	1322

* During 1918–19 there were 1,467 additional men registered for special military work under the S.A.T.C. organization.

† Does not include third term.

UNIVERSITY OF NEW HAMPSHIRE ALUMNI ASSOCIATION

The Alumni Association expects all two- and four-year graduates to become active members, and all former students to become associate members of the Alumni Association. The dues, together with subscription to the *Alumni Bulletin*, are $2.00 per year, payable in advance.

The fiscal year of the Association commences on the first day of July.

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