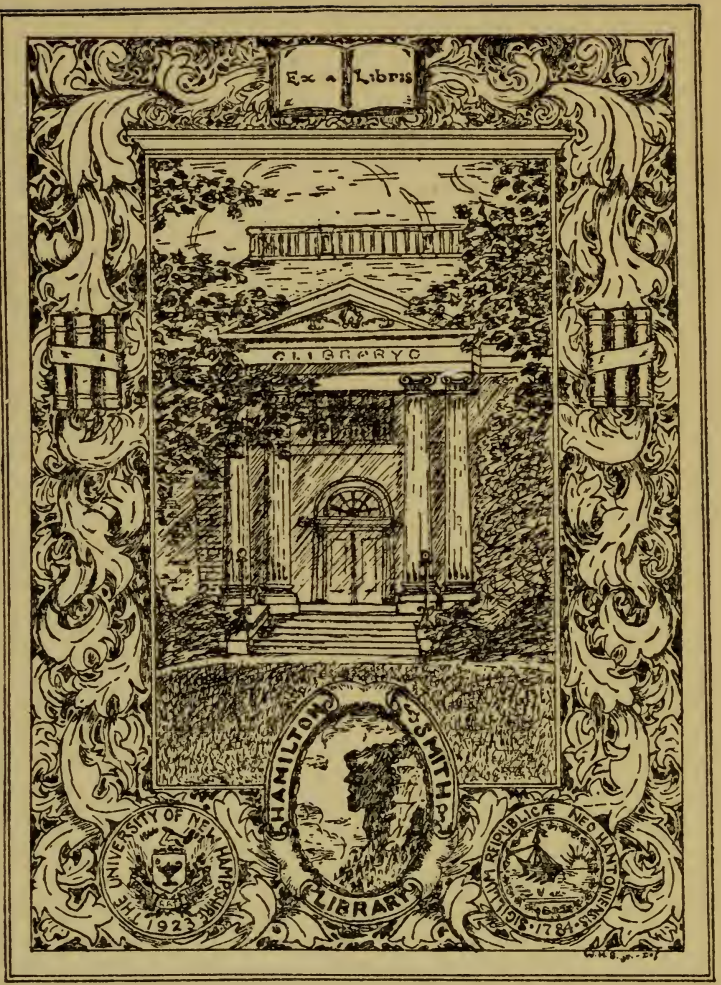
BULLETIN OF THE UNIVERSITY OF NEW HAMPSHIRE

CATALOG NUMBER FOR

1930 - 1931

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

DURHAM · NEW HAMPSHIRE

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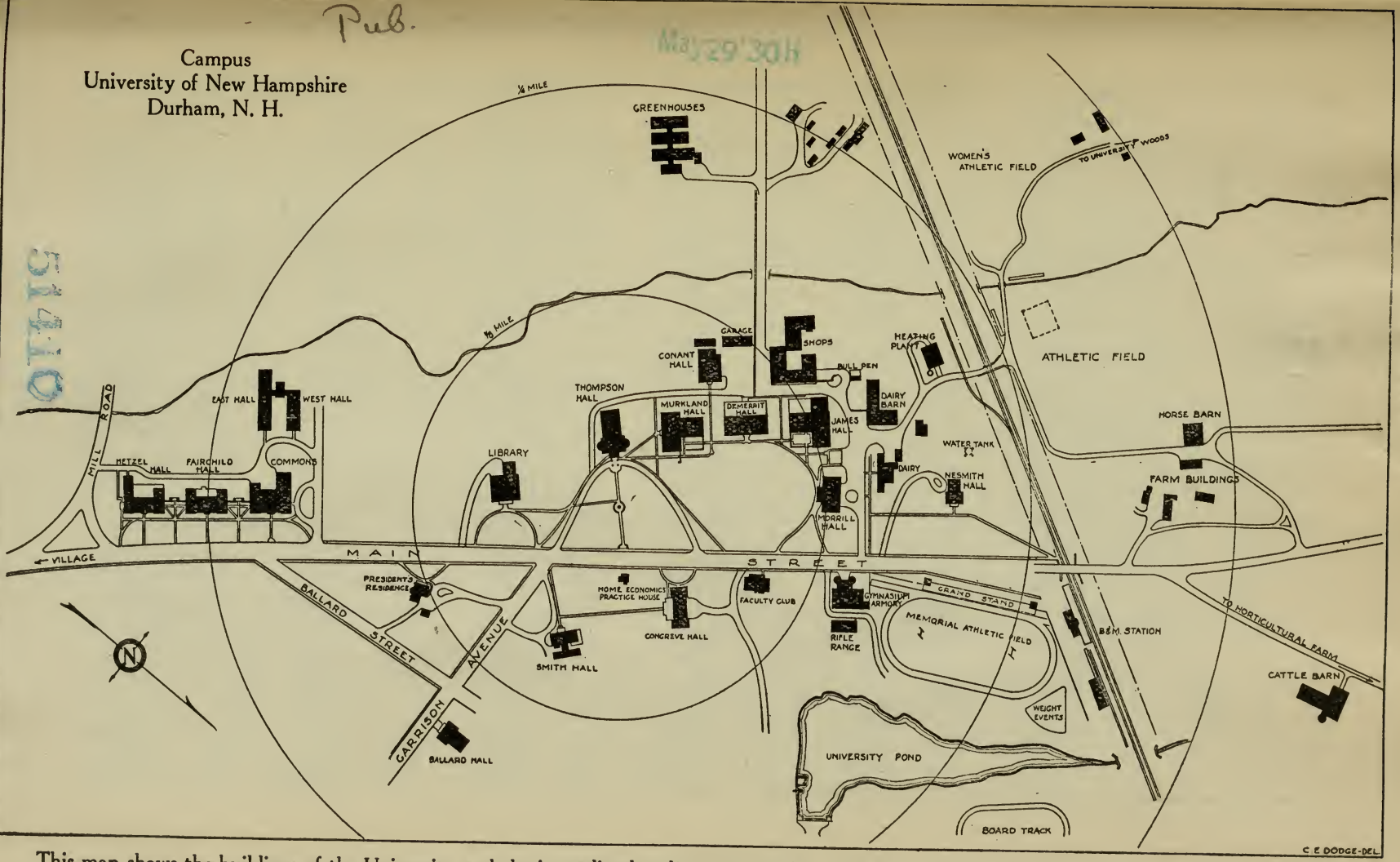
BULLETIN
of the
UNIVERSITY OF NEW HAMPSHIRE
Vol. XXI March, 1930 No. 7

Campus
University of New Hampshire
Durham, N. H.



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

CALENDAR

1930

JULY

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
20	21	22	23	24	25	26
27	28	29	30	31	..	..
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AUGUST

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	30
31	..	..	..	..	..	..

SEPTEMBER

S	M	T	W	T	F	S
..	1	2	3	4	..	6
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14	15	16	17	18	19	20
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OCTOBER

S	M	T	W	T	F	S
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12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	..
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NOVEMBER

S	M	T	W	T	F	S
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9	10	11	12	13	14	15
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23	24	25	26	27	28	29
30	..	..	..	..	..	..

DECEMBER

S	M	T	W	T	F	S
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1931

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
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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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1932

JANUARY

S	M	T	W	T	F	S
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FEBRUARY

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MARCH

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APRIL

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24	25	26	27	28	29	30
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MAY

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JUNE

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26	27	28	29	30	..	..
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UNIVERSITY CALENDAR

1930–1931

SUMMER SESSION

June 30	Monday	Registration Day
July 1	Tuesday	Classes begin at 8 A.M.
Aug. 8	Friday	Summer Session closes at 4 P.M.

FALL TERM

1930

Sept. 16	Tuesday	Matriculation Day—Freshman Class
Sept. 22	Monday	Registration Day—All Classes
Sept. 23	Tuesday	Recitations begin at 8 A.M.
Sept. 24	Wednesday	University Day—Afternoon holiday
Oct. 17	Friday	Annual Meeting of Board of Trustees
Oct. 25	Saturday	Home-coming Day
Oct. 30	Thursday	Mid-Term warnings to be filed, 5 P.M.
Nov. 8	Saturday	Dads' Day
Nov. 26	Wednesday	Thanksgiving recess—Wed., 12.30 P.M. to Fri., 8 A.M.
Dec. 8–12	Mon.–Fri.	Fall Term examinations
Dec. 12	Friday	Fall Term closes at 4 P.M.

WINTER TERM

1931

Jan. 5	Monday	Registration Day
Jan. 6	Tuesday	Classes begin at 8 A.M.
Jan. 16	Friday	Meeting of Board of Trustees
Feb. 10	Tuesday	Mid-Term warnings to be filed, 5 P.M.
Feb. —	Fri., Sat.	Winter Carnival, Fri., 12.30 P.M. to Sat., 12.30 P.M.
Mar. 10	Tuesday	Town Meeting
Mar. 16–20	Mon.–Fri.	Winter Term examinations
Mar. 20	Friday	Winter Term closes at 4 P.M.

SPRING TERM

1931

Mar. 30	Monday	Registration Day
Mar. 31	Tuesday	Recitations begin at 8 A.M.
Apr. 17	Friday	Meeting of Board of Trustees
May 5	Tuesday	Mid-Term warnings to be filed, 5 P.M.
May 2	Saturday	Mothers' Day
May —	Fri., Sat.	Military Manoeuvres
May 30	Saturday	Memorial Day—Holiday

June	8–12 Mon.–Fri.	Spring Term examinations
June	10 Wednesday	Senior examinations close at 4 P.M.
June	13 Saturday	Class Day—Alumni Day—Meeting of Board of Trustees
June	14 Sunday	Baccalaureate Day
June	15 Monday	Commencement Day

BOARD OF TRUSTEES

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Andrew L. Felker, Commissioner of Agriculture, *ex officio*

President Edward M. Lewis, litt.d., ll.d., *ex officio*

Dwight Hall, a.b., *President* — Dover
October 29, 1915 to June 30, 1931

Roy D. Hunter — Claremont
June 14, 1916 to June 30, 1933

Elizabeth C. Sawyer — Dover
July 12, 1925 to June 30, 1934

*Albert H. Brown, b.s., *Secretary* — Strafford
September 1, 1925 to June 30, 1932

Harry D. Sawyer — Woodstock
September 15, 1926 to June 30, 1930

James A. Wellman, b.s. — Manchester
January 26, 1928 to June 30, 1931

Robert T. Kingsbury — Keene
January 27, 1928 to June 30, 1932

John W. Pearson, a.b. — Concord
January 26, 1928 to June 30, 1932

Albertus T. Dudley, a.b. — Exeter
June 14, 1928 to June 30, 1933

*Charles H. Hood, d.sc. — Charlestown, Mass.
May 6, 1929 to June 30, 1931

* Elected by Alumni.

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HAROLD A. IDDLES, PH.D., *Professor of Chemistry*

* Arranged in order of seniority of appointment.
† Leave of absence, February 7 to June 11, 1930.

UNIVERSITY OF NEW HAMPSHIRE

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BERTHA M. KIRK, M.A., *Assistant Professor of Physical Education for Women*

* Arranged in order of seniority of appointment.
† Leave of absence, 1929–30.

JAMES H. DAY, B.S., CAPTAIN, INFANTRY, *Assistant Professor of Military Science and Tactics*
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LYMAN J. BATCHELDER, *Instructor in Wood Shop*
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HELEN W. LEIGHTON, *Instructor in Home Economics*
JOHN C. TONKIN, *Instructor in Machine Shop*
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RICHARD H. KIMBALL, A.M., *Instructor in Chemistry*
STUART DUNN, M.S., *Instructor in Botany*

† Leave of absence, July 1, 1929 to September 1, 1930.
* Arranged in order of seniority of appointment. ‡ Leave of absence, 1929–30.

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WILLIAM H. HARTWELL, M.S., *Instructor in Physics*
JAMES M. SANDERS, M.A., *Instructor in Zoölogy*
JOHN A. FLOYD, A.B., *Instructor in Languages*
ANNA D. MURPHY, A.B., *Instructor in Languages*
PHILIP G. NESERIUS, M.A., *Instructor in Political Science*
HARRY M. RUGG, *Instructor in Civil and Mechanical Engineering*
W. RUSSELL HILLIARD, B.S., *Instructor in Aëronautics*

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JAMES S. CHAMBERLIN, B.S. IN C.E., *Lecturer on Personnel Relationships, College of Technology*

ASSISTANTS *

FRED W. WOOD, SERGEANT, *Assistant in Military Science and Tactics*
FRED H. BROWN, SERGEANT, *Assistant in Military Science and Tactics*
DENNIS E. RUSK, B.S. (Agr.), *Assistant in Animal Husbandry and Superintendent of Live Stock*

* Arranged in order of seniority of appointment.

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THOMAS A. PICKETT, B.S., *Graduate Assistant in Agricultural and Biological Chemistry*
HAROLD E. ABBOTT, B.S., *Graduate Assistant in Chemistry*
CHARLES N. ELLIOTT, B.A., *Graduate Assistant in the Office of the Dean of the College of Liberal Arts*
CHARLES A. SEWALL, B.S., *Graduate Assistant in Mathematics*
LOUISE S. WOODMAN, B.S., *Graduate Assistant in Mathematics*
H. GWENDOLYN JONES, M.A., *Assistant in Sociology*
JOHN F. SHEEHAN, B.S., *Graduate Assistant in Zoölogy*
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ELIZABETH A. REDDEN, B.A., *Graduate Assistant in Statistics*
BETHYL C. HENNESSY, *Assistant in Oral English*
GERTRUDE E. NYE, B.A., *Graduate Assistant in English*
ALFRED H. MILLER, A.B., *Assistant in Physical Education for Men*
KATHLEEN G. DURKIN, B.S., *Assistant in Economics*

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION

THE STATION STAFF

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WALTER C. O'KANE, M.A., *Entomologist*
ORMOND R. BUTLER, PH.D., *Botanist*
ERNEST G. RITZMAN, M.S., *Research Professor in Animal Husbandry*
KARL W. WOODWARD, A.B., M.F., *Forester*
JOHN M. FULLER, B.S., *Dairy Husbandman*
*GEORGE F. POTTER, M.S., *Horticulturist*
THOMAS G. PHILLIPS, PH.D., *Chemist*
THOMAS B. CHARLES, B.S., *Poultry Husbandman*
†HARRY C. WOODWORTH, M.S., *Agricultural Economist*
M. GALE EASTMAN, M.S., *Associate Agricultural Economist*
TODD O. SMITH, M.S., *Associate Chemist*
FORD S. PRINCE, B.S., *Associate Agronomist*
JESSE R. HEPLER, M.S., *Assistant in Vegetable Gardening*
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CLARK L. STEVENS, M.F., *Assistant Forester*
‡STANLEY R. SHIMER, M.S., *Assistant Chemist*
WALTER T. ACKERMAN, M.S., *Specialist in Rural Electricity*
MAX F. ABELL, PH.D., *Assistant Agricultural Economist*
CARL L. MARTIN, D.V.M., *Veterinarian*
CHARLES A. BOTTORFF, JR., D.V.M., *Poultry Pathologist*
EARL H. RINEAR, M.S., *Research Assistant in Marketing*
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L. PHELPS LATIMER, PH.D., *Assistant Horticulturist*
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LEROY J. HIGGINS, B.S., *Assistant Agronomist*
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EDWARD J. RASMUSSEN, B.S., *Research Assistant in Horticulture*
ELMER W. LANG, *White Diarrhea Tester*
NICHOLOS F. COLOVOS, M.S., *Assistant in Animal Nutrition*
LEON C. GLOVER, M.S., *Research Assistant in Entomology*
MAURICE E. BICKFORD, B.S., *Assistant in Animal Nutrition*
WARREN A. WESTGATE, M.S., *Research Chemical Assistant in Entomology*

* Leave of absence, February 7 to June 11, 1930.
† Leave of absence, October 1, 1929 to May 31, 1930.
‡ Leave of absence, July 1, 1929 to September 1, 1930.

ROLAND B. DEARBORN, M.S., *Assistant in Vegetable Gardening*
MAX A. CAMPBELL, B.S., *Poultry Certification Inspector*
ROGER C. HAM, *Laboratory Technician in Poultry Husbandry*
ROLAND B. DEARBORN, B.S., *Graduate Assistant in Horticulture*
CARL E. WALKER, B.S., *Graduate Assistant in Forestry*
HARRY L. MURRAY, B.S., *Graduate Assistant in Botany*
JAMES C. FRITZ, B.S., *Graduate Assistant in Agricultural and Biological Chemistry*
SAMUEL W. HOITT, B.S., *Graduate Assistant in Agricultural Economics*
EDWARD A. DEXTER, B.S., *Assistant Poultry Tester*

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BEATRICE M. RICHMOND, *Bookkeeper*
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* Leave of absence, October 1, 1929 to May 31, 1930.

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HISTORICAL SKETCH

The University of New Hampshire was incorporated by an act of the state legislature on May 4, 1923. The new corporation included the old corporation known as the New Hampshire College of Agriculture and the Mechanic Arts and also provided for a College of Technology and a College of Liberal Arts. The act of incorporation took effect on July 1, 1923. Under the provisions of the act of incorporation the trustees of the old corporation, the New Hampshire College of Agriculture and the Mechanic Arts, became the trustees of the University of New Hampshire.

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

The original corporation, 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 year 1868 saw the entrance of the first class. 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, with the exception of a few minor reservations, his entire estate. 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 in 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 moneys which are available as the result of the acts of Congress referred to, and a yearly appropriation from the state amounting to one mill on the assessed valuation of the taxable property of the state.

Although engineering instruction had been carried on in a Division of Engineering from the founding of the college, the work became unified and specialized when the College of Technology became one of the administrative units of the University in 1923.

Study of the liberal arts had been offered before the change of nomenclature of the corporation in 1923. The University of New Hampshire included a College of Liberal Arts, intended to care for the students who desired preparation for life in fields other than agriculture and engineering.

Graduate study although not new to New Hampshire, as it had been carried on for some time under the direction of a faculty committee, was definitely organized in 1928 as a Graduate School.

A branch of the University, known as the Agricultural Experiment Station, was established by the state August 4, 1887, under the 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.

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. Funds appropriated for the University by acts of Congress and the state legislature provide the means for promoting this type of work.

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.

FACILITIES FOR INSTRUCTION

BUILDINGS FOR ADMINISTRATION AND INSTRUCTION

Thompson Hall.—Main administration building.

Morrill Hall.—Headquarters of the College of Agriculture.

DeMeritt Hall.—Headquarters of the College of Technology.

Conant Hall.—General classroom building.

Dairy Building.—Equipped for dairy instruction.

Shops.—Contain equipment essential for engineering instruction.

Nesmith Hall.—Botany and experiment station building.

Armory and Gymnasium.—Military science and physical education.

Murkland Hall.—Headquarters of the College of Liberal Arts.

Charles James Hall.—Chemistry building.

Practice House.—Equipped as a practice house for home economics students.

Hamilton Smith Library.—Made possible by union of funds left by Hamilton Smith of Durham for the erection of a town library building, from the Carnegie Corporation and the State of New Hampshire. The library serves not only the faculty and students of the University but also the residents of the town of Durham, being one of two such libraries in the United States so constituted, and because it is the library of the state university, it serves as far as possible the people of the State of New Hampshire.

It contains, on the main floor, reading rooms, a small children's room, office, workrooms and a delivery room. On the second floor are a reserved book room, historical room and two study rooms. A three-story stack in the rear has accommodations for 50,000 volumes. Two basement rooms contain periodicals and an additional 10,000 volumes.

Farm Buildings.—There are several large, well-equipped farm and other buildings adapted to the needs of the College of Agriculture.

Power Plant.—This building houses the equipment necessary for heating the University buildings.

RESIDENTIAL HALLS

Commons.—University dining hall. Dormitory on third floor for women students.

Fairchild Hall.—Modern building furnishing accommodations for 150 men.

Ballard Hall.—Accommodates 50 women students.

East and West Halls.—Men's dormitories for 230 students.

Hetzel Hall.—Newest dormitory furnishing accommodations for 156 men.

Smith Hall.—Furnishes rooming facilities for 68 women.

Congreve Hall.—Accommodates 100 women students.

See folder on Residential Halls.

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. The machinery laboratory contains the original "Daniel Webster plow" and other primitive tools. 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, various makes of woven wire fences, etc.

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 farm, with its 900 acres of land, has a variety of soils suited for the growth of various farm crops.

Animal Husbandry.—The stock barn is thoroughly equipped with modern appliances. It houses a number of horses of the draft type, including a well-bred Percheron stallion. There are two small herds of beef cattle, milking Shorthorns, and Herefords, as well as a flock of pure-bred Shropshire sheep.

The piggery of modern construction accommodates a small herd of Poland-China hogs.

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 practice of breeders' associations.

Architecture.—The department of architecture 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 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 green house equipment ample for critical studies in plant diseases and plant nutrition.

Chemistry.—During the year 1929–30 the department of chemistry, together with agricultural chemistry, occupied the new building, Charles James Hall.

Laboratories, equipment and recitation rooms, entirely modern in every respect, are provided for instruction in all fundamental courses. In addition ample facilities are available for advanced instruction and research work in general, analytical, physical, and organic chemistry. Besides the usual necessary apparatus such as glass and porcelain ware, balances, drying ovens and platinum ware, there is equipment for constant temperature work, magnetic susceptibility determinations, hydrogen ion determinations, spectroscopic analysis and high and low voltage motor generator sets for electro-chemistry, etc.

Dairy Husbandry.—The dairy husbandry laboratories, located in the dairy building, are well equipped for instructional purposes. The equipment includes power churn, power separator, pasteurizers, coolers, ice cream freezer, bottler, compressors and homogenizer. In the farm dairy room are farm separators and hand and small power churns. The milk testing and bacteriological laboratories have equipment necessary for testing and milk inspection, and dairy bacteriology.

The University dairy herd is made up of representatives of the Ayrshire, Guernsey, Holstein and Jersey breeds.

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 electrical machinery, and contains a large distribution switchboard on which are mounted instruments, switches, circuit breakers, 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 communication, storage batteries, and research.

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

The lecture room of the department is equipped with a small panel

board connected directly with the switchboard in the main laboratory, thus making it possible to supplement lectures with demonstrations.

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 several farms of the University total about 900 acres. Of this area about 90 acres are devoted to the campus and athletic fields; about 200 acres are used for hay, tillage, orchards and gardens, about 300 acres are forest, wood and brush land; about 300 acres are in pasture, and about 15 acres in ponds.

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 near by, 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.

Home Economics.—The home economics department is located in three large rooms in Thompson Hall. The food laboratory is furnished with individual desk equipment and cupboards for utensils and supplies. The sewing laboratory is equipped with tables, cupboards, and various types of sewing machines. The third room is equipped for weaving and textile study. The department also has a practice cottage.

The Library.—The Hamilton Smith Library, by virtue of an agreement between the town of Durham and the then New Hampshire College in 1907, contains not only the books belonging to the University but also

those of the Durham Library Association, the Durham Public Library and the New Hampshire Agricultural Experiment Station. In each case these collections are increased by the body owning the books.

The library collection includes 65,000 bound volumes. Fifteen hundred periodicals, continuations and proceedings of scientific societies are received currently. The main collections are housed in the Hamilton Smith Library. The volumes of the New Hampshire Agricultural Experiment Station are kept in Morrill Hall. Seventeen department libraries are maintained for the departments of the Colleges of Agriculture and Technology. Periodicals appropriate to the department libraries are sent there.

The library publications include *The Library Handbook* containing information, directions for the use of the library and library tools, and library regulations; and the *Library Lantern*, a monthly news bulletin about books and libraries. These are free.

The library attempts to provide all books needed for reading and research save the individual texts adopted for the various courses; to provide recreational reading of a wide and varied character including current, ephemeral and standard material of value; and to add gradually to its collections of the classics, serial sets, research and reference works.

Mechanical Engineering Department.—This department is located in DeMeritt Hall. On the second and third floors are the advanced drawing and designing rooms. In addition to these drafting rooms there are two lecture rooms, and department offices. One of the lecture rooms is equipped with motion picture machines and stereopticon lantern and screen, for illustrated lectures.

In the basement are located the mechanical engineering laboratories, in the north end of which is the materials testing laboratory, equipped with the apparatus needed in making analyses of flue gases, for calorimetric determinations of the heat values of solid and liquid fuels, and for conducting the usual tests of cement and concrete. There is also apparatus needed in determining the viscosity and flash points of lubricants as well as an oil testing machine for determining the lubricating and wearing qualities of lubricants. This laboratory is also equipped with an electric oven for the heat treatment of steel and with torsion, tension and compression testing machines for determining the strengths of materials.

The main room is given over to the testing of steam, gas and hydraulic machinery as well as of air compressors, air conditioning and heat

transfer apparatus. This laboratory is equipped with machinery needed for such testing. There is also an ample supply of other apparatus needed in conducting various tests and doing research work in various lines.

The new power plant has been designed to serve also as a steam laboratory for this department.

The wood shop is equipped with thirty-three benches, and complete wood working equipment for 160 students.

The equipment of the machine shop consists of the modern complete apparatus found in an up-to-date commercial shop, and a large number of small tools, including micrometers, calipers and gauges necessary for accurate work.

In the forge shop are seventeen Sturtevant down-draft forges, with anvils and necessary tools.

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 calatog, consists of over 127,000 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 75-foot indoor gallery practice rifle, a 100-inch outdoor machine gun and a 50-yard outdoor pistol 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 uniform prescribed by standing orders of the War Department and furnished by the government.

Upon the graduation of each class, those students who have satis-

factorily completed the course receive commissions as second lieutenants in the officers reserve corps of the United States Army.

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 collection of apparatus for use in laboratories and lectures.

Poultry Husbandry.—The equipment of the poultry plant consists of a permanent laying house housing 1,000 birds; a 30 by 60 foot laying house housing 600 birds; a permanent long type brooder house capable of brooding 5,000 chicks; battery brooder rooms with a capacity of 4,000 chicks to broiler age; an incubator cellar containing cabinet-type incubators of 1,400-egg and 3,000-egg capacity. Range shelters are also available for the poultry plant operation.

The hens consist of Barred Plymouth Rocks, Single Comb Rhode Island Reds, Single Comb White Leghorns and Blue Andalusians. Additional breeds will be added. A portion of the flock is trap-nested for instructional and breeding purposes.

The poultry plant is operated for instructional and research purposes. Experiments are being conducted along the lines of feeding, breeding, brooding, with special emphasis on battery brooding, management, and diseases.

A special poultry pathology laboratory is maintained for diagnosis and research in poultry diseases. This laboratory is available for student instructional purposes.

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. 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 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.

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 Freshman Expenses

	High	*Average*	*Low*
Room (Dormitories)*	$120.00	$72.00	$63.00
Board (at Commons)	215.00	215.00	215.00
Tuition **	150.00	150.00	75.00 and a scholarship
Uniform †	.....	.....	.....
Books	35.00	35.00	35.00
Laundry	35.00	20.00	15.00
Incidentals ‡	100.00	60.00	50.00
Total	$655.00	$552.00	$453.00
Expenses, Fall Term §	$275.00	$225.00	$185.00

Tuition—Four-Year Students.—Tuition is $150 a year for residents of New Hampshire and $250 for non-residents. For non-resident students who entered the University before the end of the college year 1927–28, the tuition is $225. Tuition is paid in advance in three equal installments, one on the first day of each term.

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 tuition entitles the student (four-year, two-year) to admission to all varsity athletic games and contests.

Tuition—Two-Year Students.—Tuition for two-year students in agriculture is $75 for residents of New Hampshire and $175 for non-

* Send for bulletin on Residential Halls.

** If a non-resident, add $100 to high and average and $175 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 of each student having military equipment in his possession.

‡ 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 $1.50 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.

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

residents. Tuition is payable in advance in three equal installments, one on the first day of each 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 $60 to $120 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 at the close of the year or upon withdrawal.

Room rent is payable in advance in three equal installments, one on the first day of each term except as noted below.

Rooms reserved will be held only until September 1st unless one-third of the annual rent is paid before that date.

Rooms paid for and not occupied one day after registration may 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.—A Dining Hall is operated and supervised by the University for the accommodation and benefit of the students. All freshmen, whose homes are not located in Durham or who are not residents of Durham, will be required to board at the University Dining Hall. The aim of the compulsory regulation is to insure a broad fellowship in the class, and to safeguard the health of the first-year students by offering skilled dietetic oversight in the selection and preparation of their food.

The Dining Hall is equipped with the best appliances for cooking and serving on a large scale, and is subject to constant sanitary inspection by the University Physician. Board is $215 for the college year, payable $75 at registration for the first term, and $70 at registration for each of the second and third terms.

A cafeteria is open for all students of the upper classes who may desire to take advantage of the low price and the high quality of food available at the University Dining Hall.

Health Service.—The Health Department with the University Physician in charge is devoted to the prevention of sickness and the maintenance of the health and efficiency of the students. The University maintains an infirmary with a matron and a trained nurse in charge.

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

Self-Support.—A great many students earn their education in part by means of their own labor during summers and while in college. An employment bureau for men is maintained by the Young Men's Christian Association, and inquiries from the men should be addressed to the Secretary, Christian Work, Inc., Durham, N. H. The employment bureau cannot promise work to a student, because in so small a town as Durham there is not enough work to go around. In the fall and spring terms freshmen can get work several afternoons a week doing such odd jobs or chores as taking care of lawns, gardens, furnaces, etc. By the end of freshman year they may reasonably hope to get a steady job such as waiting on table, serving as janitor in one of the University buildings, etc. But students are urged not to count too much upon earning their way the first year, and should be sure of at least $400, a low estimate of the first year's expense, from other sources.

Employment for the girls is in the hands of the Dean of Women, and inquiries from girls should be addressed to her.

UNIVERSITY AID TO STUDENTS

Scholarships.—A limited number of scholarships are awarded annually for the purpose of aiding deserving students. In order to grant scholarships equitably the University requires 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.

Scholarships furnished by the state may be granted to students who have attended college for less than three terms.

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

Conant Scholarships.—These scholarships provided by the bequest of John Conant, of Jaffrey, pay $75 at present and are good for one year. By the terms of the bequest they are open to men taking agricultural courses and preference is given to residents of Cheshire County. Application should be made to the Dean of the Faculty.

Lougee Scholarships.—Beginning in 1921 the interest on $5,000 bequeathed by Amos D. Lougee of Somersworth, N. H., has been expended for scholarships of $75 each. 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 *would 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.

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

Valentine Smith Scholarships.—Through the generosity of 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 graduates of an approved high school or academy who shall, upon examination, be judged to have the most thorough preparation for admission."

Competitive examinations for this scholarship will be held in Thompson Hall at the University, September 16 and 17, 1930. Examinations will commence at 10 A. M. on Tuesday. Contestants must present the usual 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, and the examinations desired.

Examinations are not restricted to residents of the state.

Class Memorial Scholarships.—In accordance with a communication presented to the trustees by the Alumni Association in 1922, each class upon graduation establishes a fund of $3,000, the interest of which will be used in payment of a class scholarship, to be awarded by a committee appointed by the President. The respective classes shall forward recommendations to this committee which will investigate such recommendations before awarding the scholarships.

Scholarships shall be limited to candidates of the highest moral standards, physically sound, and preference shall be given to those who require financial aid in order to continue their education, and shall be dependent upon the same factors as govern the holding of other scholarships as regards grades.

Eighteen classes, 1922 to 1940, will establish these scholarships, and each scholarship shall be dedicated to the name of one of the eighteen New Hampshire men who died in the service of his country during the World War. Six classes have established their scholarships to date.

They are: Forrest Eugene Adams Scholarship, Class of 1922; Paul Edward Corriveau Scholarship, Class of 1923; Pitt Sawyer Willand Scholarship, Class of 1924; George Downes Parnell Scholarship, Class of 1925; Cyril Thomas Hunt Scholarship, Class of 1926; Donald Whitney Libby Scholarship, Class of 1927.

Ralph D. Hetzel Interscholastic Debating Scholarships.—The Board of Trustees of the University on Dec. 20, 1926, set aside three scholarships each year for three years to be awarded to the three interscholastic debaters who should qualify under regulations defined by the Interscholastic Debating League or by the University. These scholarships are limited to residents of New Hampshire.

Hunt Scholarship.—A special scholarship paying $75 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 United States Army. This scholarship is named in honor of Colonel William E. Hunt, New Hampshire 1899, and Colonel Charles A. Hunt, New Hampshire 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. The conditions laid down on the application form must be carefully observed by the candidate. 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 *would be unable to attend without the aid of the proposed scholarship.* Preference will be given to a New Hampshire soldier.

Concord Alumni Scholarship Fund.—The Concord Branch of Alumni of the University of New Hampshire recently voted to begin the establishment of a scholarship fund. For the present, in accordance with the suggestion of the Concord Branch, money paid in from year to year will be employed as a part of the Student Loan Fund of the University. Ultimately, the principal and such interest as accrues will be transferred to a special scholarship fund.

Frank B. Clark Fund.—A trust fund of $10,000 has been provided by Frank B. Clark of Dover, N. H., the income of which is to be used for the purpose of assisting and encouraging needy and worthy students who are suffering from physical impairment or deformity.

"Students impaired by the loss of an arm shall receive prior consideration."

"The benefits of this gift are to be available to students in any secondary school or college except a secondary school or college which is under the direction or control of a church or religious affiliations or preferences, and with the further understanding that students at the University of New Hampshire shall be given prior consideration."

Dads' Hetzel Scholarship Fund.—At the second annual Dads' Day at the University, the fathers present voted to establish a scholarship fund to be known as The Dads' Hetzel Fund and subscribed $304. For the present this money will be employed as a part of the Student Loan Fund of the University. Ultimately the principal and such interest as accrues will be transferred to a special scholarship fund.

***Distribution of Loan and Scholarship State Assistance Funds by the Loan Committee.*—For the present "Cash Loans" will be granted to needy Juniors and Seniors and "Deferred Tuition Loans" to needy Sophomores. "Free Scholarships" and "Deferred Tuition Loans" will be granted to needy Freshmen and Two-Year Agricultural Students.**

Exceptions to the above procedure may be made by vote of the Loan Committee.

Cash Loan Fund.—Money will be loaned to needy Juniors and Seniors who are economical in their expenditures and who are working to

pay a portion of their expenses. These loans will bear interest at 2 per cent until graduation or withdrawal from the University, and 5 per cent after graduation or withdrawal.

D. A. R. Loan Fund.—The Daughters of the American Revolution of New Hampshire have recently created a "Student Loan Fund" for the benefit of students of any educational pursuit. This fund is administered by the Student Loan Fund Committee of the University.

The John H. Pearson Trust.—In coöperation with the trustees of the John H. Pearson Estate, Concord, N. H., a student loan fund known as The John H. Pearson Trust has been established, and is administered under the conditions governing the University Loan Fund.

Deferred Tuition Loans.—In order to enable students to attend the University, who would be unable to do so without the aid of a loan, the University will grant loans to be applied toward tuition up to $100 in each college year. These loans will bear interest at the rate of 2 per cent until graduation or withdrawal from the University, and 5 per cent after graduation or withdrawal, and are payable as follows: $5 a month beginning one year after graduation or withdrawal; $10 a month beginning two years after graduation or withdrawal; $15 a month, beginning three years after graduation or withdrawal, etc.

Free Scholarships.—To aid students who need and deserve financial assistance, the trustees award 200 free scholarships annually to residents of New Hampshire. Each scholarship pays $75 per year, and is good for one year only.

Applications for these scholarships must be returned to the Dean of the Faculty not later than July 15.

Recommendations for free scholarships may be made by the subordinate and Pomona Granges, state senators, State Federation of Women's Clubs, and citizens of New Hampshire.

Upon investigation and approval scholarships will be granted to those whose need appears to the committee to be the greatest.

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.

Interscholastic Debating Prize.—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 is awarded in rotation to the winners. Other prizes, such as medals and certificates, are awarded to individual debaters from time to time.

Interscholastic Prize Speaking Contest.—This 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 prizes of the value of thirty dollars are provided by the University for the winners.

University Inter-Fraternity Scholarship Cup for Men.—Through the generosity of Wilford A. Osgood, '14, a cup is donated which is to be awarded each year to that four-year University fraternity whose members have the highest scholastic standing as certified by the Registrar.

The cup will belong permanently to that fraternity winning it three times in succession.

Fraternities eligible to compete for this cup must have been members of Casque and Casket for at least two years and must have been active on the campus during that length of time.

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 American Legion Award.—The New Hampshire department of the American Legion as a mark of recognition of the University's contribution in the World War, and as an expression of its interest in national defense offers yearly a medal to that man in the senior class who has attained the highest distinction determined by achievement in military science, athletics, and scholarship. To be eligible for this award the

candidate in military science must have demonstrated outstanding ability as a leader and must have revealed qualities of devotion and loyalty. In athletics he must have displayed an active interest as a participant or as a manager for at least two years. The candidate must have attained a scholastic standing in the upper one-fourth of the senior men of the college in which the candidate is registered. From the persons meeting these conditions, the committee will select that candidate who, in its judgment, is deemed most worthy. The name of the winner will be inscribed on a trophy. This trophy, made possible by the generosity of the American Legion of this state, is to remain in the permanent possession of the University.

Katherine DeMeritt Memorial Prize.—Dean Elizabeth P. DeMeritt has offered a prize of $20, in memory of her daughter of the class of 1908, to that junior girl who, during her three years in college, has shown the greatest aptitude for helpful leadership and cheerful loyalty combined with strength of character and scholastic attainments. (Established 1923.)

Bartlett Prize.—Former Governor John H. Bartlett (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.

Chi Omega Prize.—Mu Alpha Chapter of Chi Omega awards an annual prize of ten dollars at Commencement to the undergraduate woman student of the University who shall submit to the Committee on Award the best thesis on any subject dealing with problems of civic interest in Sociology or Economics. The title shall be approved by the head of the department concerned and the thesis shall be received, not later than June first, and graded by a joint committee composed of the heads of departments of Sociology, Economics and English. If, however, no thesis is found by the committee to deserve the award, no prize shall be given.

Class of 1899 Prize.—The class of 1899 has given to the University a fund of $500, the income to be used as a cash prize to be awarded "by the Faculty to the senior who in their opinion has developed the highest ideals of good citizenship."

Phi Mu Medal.—The local chapter of Phi Mu offers a gold medal to a senior girl 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.

Phi Sigma Prize.—In order to promote high scholarship in Zoölogy and the allied sciences, the Phi Sigma national honorary fraternity offers a prize of $25 to be awarded at Commencement to that senior who shall rank highest in zoölogical 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 Charles H. Hood of the class of 1880, the income of funds given to the University in 1921 and in 1924 will be used for the encouragement, aid, and benefit of deserving students.

In accordance with the suggestions of the donor, 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.*—The income from this bequest will be used for the purchase of a suitably inscribed trophy to become the property of the University. The names of the winners of 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.

The Fairchild Memorial Prizes.—In 1927 Mask and Dagger, the dramatic society of the University of New Hampshire, established two prizes of twenty-five dollars each to be awarded at each Commencement to the two seniors who have done the most to promote dramatics during their four years at the University. One prize is awarded for excellence in acting, and one for excellence in the technical phases of play production. These prizes are given in memory of Edward T. Fairchild, late president of the University.

Thomas J. Davis Prize.—By gift of Thomas J. Davis, Duluth, Minn., a native and former resident of Durham, a fund has been provided for the establishment of Dairy and Household Science prizes as follows:

First. 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. To young women taking a short course for competitive bread baking as a half unit and for dairy butter making as another half unit.

Alpha Xi Delta Cup.—A cup will be awarded annually by the Alpha Xi Delta sorority to the senior girl who proves herself to be the best athlete in her class. The cup will be awarded on consideration of the following qualifications: good sportsmanship, physical fitness, athletic achievements, and superior skill. The cup will be awarded by a board of judges including the members of the department of Physical Education for Women, the president of the Women's Student Government and the president of the Women's Athletic Association.

Mask and Dagger Achievement Prize.—In 1929, Mask and Dagger established an annual prize of twenty-five dollars to be known as the Mask and Dagger Achievement Prize. It is awarded each year to the senior who, during his college course, has made the most outstanding artistic contribution to the dramatic work of the University.

Edward Monroe Stone Cup.—This handsome cup, presented in 1929 by Edward Monroe Stone, Class of 1892, is awarded annually to any fraternity or sorority for superior ability in intra-mural forensics. The debates are conducted by the local chapter of Tau Kappa Alpha, whose plans and methods relative to the awarding of the cup, are subject to the approval of the instructor in charge of forensics. The cup will become the permanent possession of any fraternity or sorority winning it three times in succession.

Psi Lambda Cup.—Psi Lambda, the Home Economics Club, each year awards a cup to the Home Economics senior who has shown the greatest improvement in personality and scholarship during her four years in college.

Alpha Chi Omega Prize.—A ten dollar prize will be awarded annually by Alpha Tau Chapter of Alpha Chi Omega to the undergraduate student of the University who submits to the head of the Department of English the best informal essay of less than three thousand words. The title may be chosen by the student. The essay must be submitted before June 1.

Delta Chi Trophy.—Delta Chi, honorary mathematics society, will present, at the end of each academic year, a silver cup to that member of the sophomore class, eligible for membership in the society, who during two years' courses in mathematics has demonstrated valuable mathematical ability, by ranking as one of the five high students in mathematics. General scholastic standing and personality shall also figure in determining the award. A committee consisting of the Dean of the College of Technology, the Dean of the College of Liberal Arts, the head of the Department of Mathematics, the president of Delta Chi, and one other student member of the society shall determine the winner in each year.

STUDENT ORGANIZATIONS

Student Publications.—*The New Hampshire*, a weekly newspaper giving undergraduate and alumni news.

The Granite, an annual issued by the junior class.

Student Council.—The Council is arbiter in all inter-class affairs affecting the student body and regulates intra-mural activities.

Young Men's Christian Association.

Young Women's Christian Association.

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.

The Advisory Board for Christian Work employs an inter-church student's pastor and a women's 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 Baptist, Congregational, Methodist Episcopal and Presbyterian organizations and the State Committee of the Y. M. C. A. Everything possible is done in a social and pastoral way for the students of all religious denominations, whether Protestant, Catholic or Hebrew.

Athletic Association.—Every undergraduate automatically becomes a member of the Association upon enrollment in the University by paying the regular fees. This entitles each student to admission to all home varsity athletic games.

Musical Clubs.—The musical clubs include: Men's Glee Club, Women's Glee Club, Orchestra, and Band.

The Association of Women Students.—It includes all women students of the University who, with faculty advisors, formulate and enact the rules governing women students.

Agricultural Club.—The primary object of this club is to discuss agricultural topics of scientific interest, and to provide a common meeting-ground for all agricultural students.

Mask and Dagger.—An honorary dramatic society which presents annually three dramatic productions.

Alpha Chi Sigma.—Composed of men who are to take up some branch of chemistry as their life work. Membership is honorary.

Alpha Zeta.—The professional honorary fraternity of agricultural students.

Book and Scroll.—A literary society composed of honor students in English.

Iota Chi.—The honorary journalistic society of the University.

Phi Sigma.—A national honorary biological fraternity, founded in 1915, for the purpose of promoting interest in research in the biological sciences.

Phi Lambda Phi.—An honorary physics society, whose members are students of high standing in physics.

Le Cercle Français.—This society was established in the spring of 1919 to offer competent students an opportunity to acquire a speaking knowledge of the French language.

Phi Kappa Phi.—A national honorary fraternity founded in 1897 for the purpose of promoting the highest grade of scholarship. A chapter was established at the 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.

Casque and Casket.—This society is composed of students of the upper classes, having an equal number of members from each fraternity. The group regulates all inter-fraternity relations on the campus.

Pan Hellenic.—This organization transacts all business of common interest to the women's fraternities.

Forestry Club.—This organization was formed to bring together students who are interested and are specializing in the study of forestry.

Tau Kappa Alpha.—A national honorary debate and oratory society.

Kappa Delta Pi.—Organized in 1926 to foster the interests of professional education as a local society. Later received charter as a chapter of Kappa Delta Pi, national education society.

Student Branch of the American Institute of Electrical Engineers.

Student Branch of the American Society of Mechanical Engineers.

Student Branch of the American Society of Civil Engineers.

Alpha Sigma.—Organized in 1925 as an honorary architectural society.

Delta Chi.—Founded in 1925, and includes high ranking students in Mathematics.

Psi Lambda.—An honorary society for students in Home Economics.

N. H. Club.—Includes as members all male students who have earned a varsity athletic letter.

Scabbard and Blade.—Local chapter of the national honorary military fraternity.

METHODS OF ADMISSION

Provided the special requirements of the separate colleges are fully met, the University will admit without examination properly prepared New Hampshire students who are graduates of high schools or academies of New Hampshire that are approved by the State Board of Education, or those who are graduates of other specially approved schools.

The number of persons, not residents of New Hampshire, admitted each year is determined by vote of the Trustees and the following State law:

"The number of new students entering the University of New Hampshire from the states of Maine, Massachusetts, and Vermont shall not exceed eight per cent of the total enrollment of the entering class of the four-year course of the preceding University year; and the enrollment of new students, exclusive of those from the States of New Hampshire, Maine, Massachusetts and Vermont, shall not exceed four per cent of the total enrollment of the entering class of the four-year course of the preceding year."

Applicants for admission to the University will be required to submit two application forms: (1) an "admission credential" blank filled out by the headmaster or principal of the secondary school from which they are graduated; (2) a "personal statement" blank filled out by the applicant. These blanks are distributed through New Hampshire and other secondary school officials or they may be secured by application to the Dean of the Faculty, at Durham, to whom all such blanks should be forwarded.

In order to give ample time for the selection of the limited number of out-of-state students allowed, and for full investigation of New Hampshire applicants of doubtful preparation, it is desirable that applicants for admission, both from within and without the state, should forward their personal statements and credentials as early as April 1, it being understood that the preparatory school work will be completed in June. Credentials should cover work done as nearly as possible up to March 1, and they are not desired before that date. Personal statements, however, may be forwarded at any preceding time.

Applicants whose records do not give evidence of capacity, disposition and preparation adequate for successful college study may be required to withdraw their applications. In so far as is practicable, officers of the University will arrange for personal conferences with such applicants.

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.

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.

	Required Units	*College of Agriculture*	*College of Liberal Arts*	*College of Technology*
Group A	English	3	3	3
Group B *§	Mathematics	2	2	3
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, including a fourth year of English.

Entrance examinations will be given at the University at the time of opening in September. Requests for these examinations should be forwarded to the Dean of the Faculty at least one week in advance.

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

Candidates for advanced standing may be admitted on the basis of the work completed at the institution from which they come.

Every candidate for admission to the University shall be required to

* 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.

§ Two years of mathematics (one year of Algebra and one year of Plane Geometry) are required for the Business Fundamentals Course.

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

procure a statement, signed by the town or city clerk, to the effect that the father or legal guardian is a resident of the town or city and state from which he purports to register. Students admitted from foreign countries or states other than New Hampshire shall be deemed to be non-resident students throughout the entire University course unless and until the parents or legal guardian shall have gained residence in New Hampshire.

Admission of non-resident candidates will be by selection, and only records of good grade will be considered; character, leadership, alertness, etc., will also be taken into account. Because of the large number of New Hampshire students needing financial assistance in the way of work, only a very limited number of applications can be considered which do not give evidence of reasonable financial backing.

FRESHMAN WEEK

Freshman Week was instituted at the University of New Hampshire in 1924. It is evident from a study of the results of the activities of this "week" that it has served as a valuable means of adjusting freshmen to their new environment, of creating right attitudes towards college work and of minimizing the usual lost motion during the first few weeks of the regular term. By means of so-called "placement tests" the students will be sectioned according to their abilities and aptitudes. The week also affords an opportunity for the students to learn to know each other, to organize their efforts, to work together, to play together, and to become acquainted with the campus, the buildings, the faculty and with the courses of study and the traditions of the University.

Attendance of all freshmen throughout Freshman Week, beginning Tuesday, September 16, and continuing through Saturday, September 20, will be obligatory. Any prospective candidate for the freshman class who is absent from the exercises beginning on September 16 will seriously imperil his admission to the University.

REQUIREMENTS IN DETAIL

GROUP A. ENGLISH

All candidates will be required to write a series of short themes which will show an intelligent appreciation of certain great English classics. The classics selected are as follows: Shakespeare's *Merchant of Venice; Twelfth Night;* and *Hamlet;* Dickens' *Tale of Two Cities;* George Eliot's

Silas Marner; Macaulay's *Life of Johnson;* Ruskin's *Sesame and Lilies;* and the best known poems of Wordsworth, Longfellow and Whittier.

Stress will be laid upon the form as well as upon the content of the paper submitted by the candidate.

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 cannot be obtained by these alone. Some collateral work is necessary, whatever book is used, and with certain ones 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, State Department of Education, 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. Commerical 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 modal 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 (Smith-Hughes).—The work in agriculture covers ten periods a week throughout the school year and includes a study of and participation in the following, supplemented by at least six months of supervised, individual project work on the home farm:

a. Major, contributory and minor agricultural enterprises in the community based upon the results of a survey of local farm practice.

b. At least twenty per cent of the total time allotted each year is devoted to farm mechanics, comprising the daily jobs confronting the farmer in keeping his equipment in the best of condition and in doing the ordinary repair and construction work which arises on the farm.

c. Agricultural economics and farm management are considered each year in relation to each of the three types of enterprises. In addition, part of the work of the senior year is devoted to a synthesis and extension of the principles applied in connection with the three types of enterprise in each of the three preceding years.

Centering around the farm job and the home project, the activities of the pupils include discussions, surveys, directed study, demonstrations, field trips and manual work.

2. Commercial Subjects.—Junior business training, commercial arithmetic, bookkeeping, commercial geography and history, stenography and typewriting, office or secretarial practice.

3. Domestic Arts.—Textiles and clothing, foods and nutrition, the home, its care and management, the family and its members.

4. Mechanic Arts.—Cabinet making and wood turning, pattern making and molding, tool forging and work on lathe, shaper, planer, drill press and milling machine, electrical work, automobile mechanics and repair, printing, related mechanical drawing, shop mathematics, shop physics, mechanics, shop organization.

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 appropriate college faculty.

ADMISSION BY TRANSFER

A candidate for admission to advanced standing from an institution of collegiate rank may receive credit without examination for work completed at such institution subject to the following requirements:

(1) He must present a catalog of the institution from which he comes together with an official certificate showing (a) all preparatory subjects accepted for entrance, (b) a complete transcript of his record including grade of scholarship in each subject, (c) a statement of honorable dismissal.

(2) Every candidate for a bachelor's degree, admitted to advanced standing, must remain in residence at the University during his senior year, and must take in regular course at least 150 time units of work.

(3) Regardless of the amount of advanced standing a student may secure, in no case will he be given a bachelor's degree until he has satisfied the full requirements of the curriculum he may elect.

THE GRADUATE SCHOOL

AIMS

The Graduate School aims to meet the needs of superior students who are preparing to become teachers in colleges or universities, or investigators, and to offer opportunities to qualified students for a more advanced training than they can obtain in an undergraduate course.

ADMINISTRATION

Graduate work is offered, under the supervision of the Dean of the Graduate School, by competent members of various departments of instruction and research. These members constitute the Faculty of the Graduate School.

The general administrative functions of the Faculty are delegated to the Dean and the Council.

ADMISSION

A student who holds a bachelor's degree, or its equivalent, from an approved college or university, is eligible for admission to graduate study.

Admission to graduate study does not necessarily imply admission to candidacy for an advanced degree. Students who are not planning to become candidates for an advanced degree may be admitted to graduate study upon the recommendation of the heads of the departments concerned, and with the approval of the Dean.

A student may major only in the departments represented in the catalog of the Graduate School. However, a graduate student who is not a candidate for an advanced degree may be admitted to graduate study in departments not represented in the Graduate School catalog, upon recommendation of the departments concerned and with the approval of the Graduate Council.

REGISTRATION

A student desiring to register for graduate study must submit to the Dean of the Graduate School the official application for admission to graduate study. Blanks for this purpose may be obtained from the Dean of the Graduate School.

Upon admission to graduate work, a student first pays his fee at the Business Office and deposits his enrollment cards with the Registrar.

REQUIREMENTS FOR GRADUATE CREDIT

Graduate credit will not be allowed to undergraduate students unless such credit has been approved in advance by the Dean of the Graduate School. No graduate credit will be given to undergraduates who lack more than 25 time units towards the bachelor's degree.

A student will not receive graduate credit for a subject in which he has obtained a grade lower than 70.

ADVANCED DEGREES

Two types of advanced degrees are conferred: (a) Master of Science, and Master of Arts, given only in course, and (b) the professional degrees, Mechanical Engineer, and Electrical Engineer, conferred only upon graduates of this institution, and based upon the quality of their professional work and the presentation of a satisfactory thesis. Information in regard to the professional degrees may be obtained from the Dean of the College of Technology.

Requirements for the Master's Degree

Residence.—A minimum of one full academic year, or four summer sessions, in residence, is required.

Credits.—An average grade of at least 80 in not less than 150 time units is required, of which not less than 80 or more than 100 time units shall be devoted to the major subject (including the thesis), and not less than 30 or more than 50 time units to the minor subjects. Work in allied departments may be properly correlated with the major subject. Not over 50 time units may be given for a thesis. Of the total time units required for an advanced degree, not more than half will be accepted on admission from another institution.

Candidacy.—At least six months previous to the time the degree is sought an application for admittance to candidacy must be submitted to the Council for their approval; and if a thesis is required, the candidate must file with the Council, for their approval, a statement of the thesis subject as recommended by the head of the department in which the thesis work has been done.

Thesis.—All theses must be typewritten upon standard paper, eight and one-half by eleven inches, medium weight, neatly bound in black cloth, and gilt-lettered on the first cover with the title, name of author,

degree sought, and year of graduation. The title page should bear the following statement:

"A thesis submitted to the University of New Hampshire in partial fulfillment of the requirements for the degree of Master of Arts (Master of Science)."

Whenever a thesis is printed in any periodical, it must be designated as having been accepted as a Master's thesis by the University of New Hampshire.

Two bound copies must be filed before Commencement Day, one with the librarian and one with the head of the department in which the major work has been done.

Examinations.—All candidates must meet the regular departmental requirements as to examinations in the subjects for which they are registered, and the requirement of a special comprehensive examination, by the heads of the departments in which the major and minor subjects have been taken, three months previous to the time the degree is sought. In addition, the candidate must pass an oral examination by a special committee designated by the Council and including the heads of the departments in which the major and minor subjects have been taken, before the candidate may be recommended for the Master's degree.

For detailed information concerning graduate study see catalog of the Graduate School.

PROFESSIONAL DEGREES IN ENGINEERING

Mechanical, Electrical, and Civil Engineering graduates of the University of New Hampshire are eligible to register as candidates for professional degrees in these three branches of engineering.

These degrees will be granted, after the preparation of acceptable theses, to those having not less than four years' professional experience subsequent to the bachelor's degree, in which the applicants have wholly or in part supervised, directed or designed engineering work; or have been in responsible charge of instruction or research in engineering. The acceptability of the theses and professional experience is determined by an examining committee.

Procedure.—The procedure for candidates for professional engineering degrees is as follows:

(1) Prepare an outline for a thesis after consultation with the head of the department concerned. This consultation may be by letter.

(2) When the thesis subject is accepted by the head of the department in which the degree is to be taken, the candidate will be registered in the Registrar's Office. This registration must be completed by October 1st of the school year in which the degree is to be conferred.

(3) The first draft of the thesis must be submitted to the professor in charge not later than March 1st, and the completed thesis in its final form by May 1st.

(4) Pass an examination at the University covering the candidate's professional practice and the engineering principles underlying the thesis.

(5) Pay the diploma fee of $5.00 at the Business Office not later than 12 noon of the Saturday next preceding the date when the degree is conferred.

Thesis.—The thesis must be typewritten upon standard paper, eight and one-half by eleven inches, medium weight, neatly bound in black cloth, and gilt-lettered on the first cover with title, name of author, degree sought, and year of graduation. The title page should bear the following statement:

"A thesis submitted to the University of New Hampshire in partial fulfillment of the requirements for the professional degree of Mechanical Engineer (Electrical Engineer or Civil Engineer)."

Whenever a thesis is printed in any periodical, it must be designated as having been accepted as a Professional Engineering thesis by the University of New Hampshire.

Two bound copies must be filed before Commencement Day, one with the librarian and one with the head of the department in which the major work is done.

UNDERGRADUATE DEGREES

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

Agriculture and Technology: The degree of Bachelor of Science is conferred upon students graduating from the College of Agriculture and from the College of Technology.

Liberal Arts: The degree of Bachelor of Science is conferred upon students graduating from the College of Liberal Arts who have elected a prescribed course in Business Fundamentals, Home Economics, Premedical, Professional Education, Professional Physical Education for Women, or who have majored in the General Arts Course in any of

the following departments: Architecture, Botany, Chemistry, Economics and Accounting, Education, Entomology, Geology, Physics, Sociology, Zoölogy.

The degree of Bachelor of Arts is conferred upon students graduating from the College of Liberal Arts who have elected a prescribed course in Pre-Law or who have majored in the General Arts Course in any of the following: Art in the department of Architecture, English, French, German, Latin, Spanish, History, Music, Philosophy, Psychology, Political Science.

College of Agriculture Requirements

The completion of 600 units.*

The completion of the subjects prescribed in the curriculum of some one of the major four-year courses.

Students graduating from the four-year course in animal husbandry, dairy husbandry, teacher-training or general agriculture must present to the Dean of the College of Agriculture, at least two weeks prior to 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, in addition to attendance at a six weeks' summer camp under supervision of the forestry department.

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

* Completion of 600 time units of which 50 may be required each term.

Completion of subjects required in any one of the four-year courses offered by the Liberal Arts College.

COURSE REQUIREMENTS

1. *General Liberal Arts Course.*

The General Liberal Arts Course, in 1928–29, was divided into a Lower Division, including the freshman and sophomore years, and an Upper Division, including the junior and senior years.

* A time unit is one hour of student work in class or in preparation.

Lower Division (Freshman and Sophomore Years)

A. General.

Completion of the following prescribed subjects:

Convocation	Freshman and sophomore years
Freshman Assembly	Freshman year—Fall term
*English 1.5a, 2.5b, 3.5c	Freshman year
*English 4a, 5b, 6c	Sophomore year
Physical Education 51a, 52b, 53c	Freshman year—Men
Physical Education 1a, 2b, 3c, and 13a	Freshman year—Women
Physical Education 54a, 55b, 56c	Sophomore year—Men
Physical Education 4a, 5b, 6c	Sophomore year—Women
Military Science 1a, 2b, 3c	Freshman year—Men
Military Science 4a, 5b, 6c	Sophomore year—Men

B. Special.

Completion of two full years, elected from each of the following three groups of subjects. Not less than one year's work in any given subject shall count toward the fulfillment of this requirement.

Group 1.

a. Mathematics, Statistics.

b. History.

c. English, French, German, Latin, Spanish.

Group 2.

Botany, Chemistry, Entomology, Geology, Physics, Zoölogy.

Group 3.

Economics, Education, Political Science, Psychology, Social Science, Philosophy, Sociology.

C. Selection at the beginning of the freshman year of a tentative major department. This major may be changed with the approval of the Dean at the beginning of any term.

Eligibility

The Dean of the College of Liberal Arts shall determine the eligibility of a student to enter the Upper Division.

Upper Division (Junior and Senior Years)

A. Convocation (Junior year).

B. Physical Education 7a, 8b, 9c (Junior Year—women).

C. Election of a major course of study.

* Not to be used to meet special requirements.

At the beginning of the junior year every student shall choose a major department. The head of each major department, in conference with the student (eligible as stated above), shall designate a major course of study which will make up 150 time units in the major and related departments exclusive of elementary subjects. They shall constitute a major course of study in which the student must secure a grade of 75 or better in each subject to the total of 100 time units. The major course of study selected, together with the related subjects totaling 150 time units, shall become the student's required work, and a copy of the schedule of subjects, approved by the head of the major department, shall be filed in the office of the Dean. The student shall choose enough electives to make up 600 time units for the four-year course.

A student may not change his major of study except with the approval of the Dean and the head of the department to which he is transferring.

2. *Prescribed Courses* (College of Liberal Arts).

a. The following prescribed courses lead to a degree of Bachelor of Science: Business Fundamentals, Professional Education, Home Economics, Teacher Training, Institutional Management, Extension Training Course, Pre-Medical Course, Professional Physical Education for Women.

They require the completion of 600 time units having an average of 50 units each term and the completion of the special course requirements in accordance with the revised policy on eligibility at the end of the sophomore year, in the College of Liberal Arts. (See p. 58.)

b. The prescribed course of Pre-Law leads to a degree of Bachelor of Arts. It requires the completion of 600 time units and the completion of special course requirements, in accordance with the revised policy on certification at the end of the sophomore year, in the College of Liberal Arts. (See page 58.)

In making available prescribed courses such as the Home Economics Courses, the Business Fundamentals Course, the Pre-Medical Course, the Professional Education Course, the Pre-Law Course and the Professional Course in Physical Education for Women, in addition to the General Liberal Arts Course, it is understood that at least 50 per cent of the content of these courses shall be liberalizing in nature, and non-technical in character. In evaluating a given student's schedule, the heads of departments or staff officers concerned will be given a working formula to determine the meaning of technical courses in the sense in which they are here used.

3. *Honors Courses* (Senior year).

Work in Honors Courses is of a more mature and advanced nature than work offered in the general and prescribed courses. It is of a sort intended to encourage individual initiative and to conserve the resourcefulness of the student. All Honors courses are year courses. A term course, so listed, cannot be taken without special approval of the committee in charge.

Honors work is of two kinds:

1. Honors based on special work undertaken in addition to the regular program of general and prescribed courses.

2. Honors based on work superseding that of the regular major course requirements of the upper division.

At the beginning of his senior year, a student who has met his course requirements and who has shown promise in the work of his freshman, sophomore, and junior years may pursue Honors Work if nominated by his major adviser and if approved by the appropriate Related Subject Matter Committee. The student working in Honors may have the following privileges:

a. He may carry a regular schedule, if doing quality work.

b. He may substitute Honors Work for his prescribed or major course requirements of the upper division.

c. His attendance is regulated by agreement with his instructor.

In addition to weekly reports and conferences, such tests as may seem best in his case are given to each student at the end of each term. At the end of the year the student is given comprehensive written examinations and an oral examination.

If, for any reason, a student fails to show proper appreciation of the privilege of pursuing the Honors Course, he will be given examinations at the end of any term, and work successfully passed will be evaluated, by the committee in charge, toward graduation.

College of Technology Requirements

The completion of 600 time units.

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

COURSES

The University is closely related to the public school system of the state. It continues the work of the high school and 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 and Biological 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 Liberal Arts.
2. Education.
   i. Professional Education.
3. Home Economics.
   i. Teacher Training.
   ii. Institutional Management.
   iii. Extension Training.
4. Business Fundamentals.
5. Pre-Medical.
6. Pre-Law.
7. Physical Education for Women.
   i. Professional Physical Education.

b. Extension.

III. College of Technology.

a. Four-Year Courses.

1. Architecture.
2. Chemical Engineering.
3. Civil Engineering.
4. Electrical Engineering.
5. Mechanical Engineering.

b. Options.

1. Industrial Engineering. Three year option in Mechanical Engineering.
2. Industrial Teacher Training. Senior year option for Mechanical and Electrical Engineering students.

FOUR-YEAR COURSES

COLLEGE OF AGRICULTURE

FREDERICK W. TAYLOR, *Dean*

DEPARTMENTS

AGRICULTURAL AND BIOLOGICAL CHEMISTRY
AGRICULTURAL ECONOMICS
AGRONOMY
ANIMAL HUSBANDRY
BOTANY
DAIRY HUSBANDRY
ENTOMOLOGY
FORESTRY
HORTICULTURE
POULTRY HUSBANDRY

This college 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 and sophomore years all agricultural students, with the exception of those in the forestry course, take the same work. At the beginning of the junior year the students select whatever major course they desire to complete. Forestry students begin their specialized work in the freshman 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 major courses from which the agricultural student may now make his selection are as follows:

1. General Agriculture.
2. Agricultural and Biological 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.

This course also offers an opportunity to the student who wishes to specialize in some line of Extension Service work like that of a county agent, a boys' club leader, a marketing or farm management investigator, or a soils and crops specialist.

Agricultural and Biological Chemistry.—Students majoring in this course receive training in the various branches of general chemistry and in their application to the growth and development of plants and animals. The methods used in the chemical analysis of plants and agricultural products and in the study of animal nutrition and metabolism are given especial attention. Aside from the technical and general requirements, numerous electives are offered which enable the student to obtain a more general training, to elect work in the applied departments of the college, or to obtain the professional work needed for teaching in the schools of the state. The course is designed to provide a thorough foundation for those expecting to prepare themselves for teaching and research in colleges and experiment stations. The department is fortunate in being associated with the experiment station and in that connection having charge of the chemical analysis of feeds and fertilizers for the State Department of Agriculture. This furnishes an opportunity for the students to come in contact with the inspection and research work of the department and to have the 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, selection, breeding and feeding of livestock, including horses, beef and dual 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 manufacture, the handling, and the distributing of dairy products). The department has at its disposal the dairy building, with modern equipment, and the college dairy herd of 85 pure bred animals. Excellent facilities are thus provided for teaching a dairy husbandry course.

Forestry.—The training and instructional work in forestry is intended to meet the needs of three classes of students: (1) those who wish to fit themselves for positions as forest rangers and lumbermen in less than four years; (2) those who desire to secure four years' training in the science and practice of forestry, and (3) those who desire a foundation for graduate and professional work in forestry.

The college forest of over 400 acres is near the campus so that it is possible to use the unusual variety of forest types on the University holdings in class work. This means that the student gets actual first-hand experience in handling a tract which has stands in it which range from 5 years old to 250 years. The sixty acres of old growth pine and hemlock make up the finest area of its kind in New England.

Students will spend six weeks in a forestry camp during the summer after their second year to get practical experience in camp life and in the survey, valuation and management of large tracts of woodland. This camp training is required of all students.

Horticulture.—The object of this course of study is to equip the students with a knowledge of fundamental sciences such as can be obtained only through university training, and to help them form the habit of using this knowledge in solving practical problems in fruit and vegetable production. In order to emphasize the relation between science and practice and to give the uninitiated a more intimate contact with the problems which they will need to solve, a five months' period of practice work is required of students in the junior year. 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. Students who successfully complete this work may feel prepared to undertake either practical farming or further training along technical lines which will fit them for professional work in teaching or research.

Instruction in landscape design and related subjects is designed to enable the students to appreciate ornamental plants and their use in beautifying home and civic grounds. Instruction in floriculture is on a similar basis.

Sufficient work is offered in apiculture to enable students to engage in beekeeping for pleasure, honey production, and for the purpose of pollinating fruit trees and other plants.

The horticultural department is well equipped with gardens, orchards, grading and packing plant, bee equipment, greenhouses and laboratories, for the study of the different phases of this industry, especially fruit growing, which is so prominent in the agriculture of the state.

Poultry.—This course of study is designed for those students who desire the necessary information and training to operate a poultry plant, or to teach poultry husbandry. The college plant, with a capacity of 1600 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 appreciate more fully 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.

COLLEGE OF AGRICULTURE

Freshman Year

(All courses except Forestry)

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
Eng. 1–a, 2–b, 3–c (*English Composition*)	7½	7½	7½
Bot. 1–a, 2–b, 3–c (*Elementary Botany*)	8	8	8
Chem. 10–a, 11–b, 12–c (*Inorganic Chemistry*)	8½	8½	8½
A. H. 1–a (*Breeds of Livestock*)	9		
Agric. 1–b (*Survey of Agriculture*)		2	
For. 1–c (*Principles of Forestry*)			9
Math. 21–a, 22–b (*Elements Mathematical Analysis*)	8	8	
Zoöl. 30–b, 31–c (*General Zoölogy*)		8	8
Mil. Sci. 1–a, 2–b, 3–c (*Military Science*)	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
Convocation	1	1	1
Freshman Assembly (Required Fall Term)			
	49	50	49

Sophomore Year

(All courses except Forestry)

Agron. 1–a (*Agricultural Engineering*)	9		
Agron. 4–c (*Soils*)			10
Agr'l Chem. 1–a, 2–b (*Agricultural Chemistry*)	12	12	
Ento. 1–a (*Economic Entomology*)	10		
Poul. 1–c (*Farm Poultry*)			7
Phys. 1–a, 2–b (*Introductory Physics*)	8	8	
Bot. 10–b, 11–c (*Bacteriology*)		8	8
D. H. 1–b (*Milk and Its Products*)		10	
Geol. 20–b (*Elementary Geology*)		8	
Hort. 1–c (*Vegetable Gardening*)			5
Hort. 3–c (*Elementary Pomology*)			5
†A. H. 2–c (*Livestock Judging*)			5
†D. H. 2–c (*Dairy Cattle Judging*)			5
†M. E. 7–c (*Agricultural Drawing*)			5
†Hort. 19–c (*Beekeeping*)			5
†M. E. 13–c (*Woodshop*)			5
Mil. Sci. 4–a, 5–b, 6–c (*Military Science*)	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Convocation	1	1	1
	47	54	48

† 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 or senior years 15 time units of so-called cultural subjects must be taken by all students, except those in the Teacher-Training course.

GENERAL AGRICULTURE

Junior Year

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
Agron. 2–a (*Forage Crops*)	7		
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½	
Zoöl. 32–a (*Genetics*)	8		
Agr'l Ec. 3–b (*Rural Economics*)		9	
Agr'l Ec. 4–b (*Farm Accounting*)		8	
Agron. 3–b (*Cereal Crops*)		7	
Eng. 60–c (*Public Speaking*)			7½
Econ. 50–c (*Principles of Business*)			9
Convocation	1	1	1
Elective	27½	18½	33½
	51	51	51

Senior Year

Agr'l Ec. 2–a (*Farm Management*)	11		
A. H. 3–a (*Feeds and Feeding*)	10		
Eng. 73–a (*Expository Writing*)	7½		
Agron. 6–b (*Fertilizers*)		8	
Elective	21½	42	50
	50	50	50

AGRICULTURAL AND BIOLOGICAL CHEMISTRY

Junior Year

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
Chem. 25–a, 26–b, 27–c	7½	7½	7½
Chem. 40–a, 41–b, 42–c (*Organic*)	7½	7½	7½
Agr'l Chem. 4–a, 5–b, 21–c (*Physiological*)	10	10	10
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½	
†Agr'l Ec. 3–b (*Rural Economics*)		9	
Phys. 3–c (*Introductory Physics*)			8
Eng. 73–a (*Expository Writing*)	7½		
Eng. 60–c (*Public Speaking*)			7½
Convocation	1	1	1
Elective	10	8½	9½
	51	51	51

Senior Year

Chem. 66–a, 67–b, 68–c (*Physical*)	7½	7½	7½
Chem. 43–a, 44–b, 45–c (*Organic Laboratory*)	5	5	5
Agr'l Chem. 7–a, 8–b, 9–c (*Agricultural Analysis*)	10	10	10
‡Agr'l Chem. 6–b (*Plant Chemistry*)		10	
German or French	7½	7½	7½
Elective	20	10	20
	50	50	50

† This subject will be scheduled in the senior year in alternate years beginning with 1931–32.

‡ This subject will be scheduled in the junior year in alternate years beginning with 1930–31.

ANIMAL HUSBANDRY

Junior Year

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
A. H. 4–a (*Animal Anatomy*)	7½		
Agron. 2–a (*Forage Crops*)	7		
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½	
Econ. 50–c (*Principles of Business*)			9
Zoöl. 32–a (*Genetics*)	8		
Agr'l Ec. 3–b (*Rural Economics*)		9	
Agr'l Ec. 4–b (*Farm Accounting*)		8	
Agr'l Chem. 4–a, 5–b (*Physiological Chemistry*)	10	10	
A. H. 5–b, 6–c (*Animal Diseases*)		7½	7½
A. H. 9–c (*Sheep and Swine*)			8½
Eng. 60–c (*Public Speaking*)			7½
Convocation	1	1	1
Elective	9	9	17½
	50	52	51
*D. H. 9–a (*Dairy Bacteriology*)	7½		
*P. H. 5–a (*Poultry Management*)	9		
*Acct. 131–a, 132–b, 133–c (*Elementary Accounting*)	7½	7½	7½
*Agron. 3–b (*Cereal Crops*)		7	
*P. H. 7–b (*Incubation*)		10	
*P. H. 9–c (*Poultry Feeding*)			10
*Zoöl. 40–b, 41–c (*Embryology*)		12	12

Senior Year

A. H. 3–a (*Feeds and Feeding*)	10		
A. H. 7–a (*Animal Breeding*)	10		
Agr'l Ec. 2–a (*Farm Management*)	11		
Eng. 73–a (*Expository Writing*)	7½		
A. H. 10–b (*Horses and Beef Cattle*)		8½	
Agron. 6–b (*Fertilizers*)		8	
Ento. 3–b (*Insects of Domestic Animals*)		7½	
A. H. 8–c (*Markets and Products*)			7½
A. H. 12–c (*Seminar*)			5½
Elective	11½	26	37
	50	50	50
*Agr'l Ec. 1–a (*Coöperative Marketing*)	8		
*For. 23–a (*Farm Woodlot*)	7		
*D. H. 3–a, 3.5–b (*Milk Production*)	10	7½	
*Met. 1–a	7½		
*Hort. 6–b (*Advanced Pomology*)		8	
*Elec. Eng. 101–b (*Electricity on the Farm*)		10	
*Econ. 18–c (*Marketing*)			9

* Recommended electives.

DAIRY HUSBANDRY

Junior Year

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
D. H. 9–a (*Dairy Bacteriology*)	10		
Econ. 1–a, 2–b, 3–c (*Elementary Economics*)	9	9	9
Econ. 50–c (*Principles of Business*)			9
Zoöl. 32–a (*Genetics*)	8		
D. H. 4–b (*Testing Dairy Products*)		7½	
Agr'l Chem. 4–a. 5–b (*Physiological Chemistry*)	10	10	
Agr'l Ec. 3–b (*Rural Economics*)		9	
D. H. 7–a (*Butter Making*)	7		
Eng. 60–c (*Public Speaking*)			7½
Agr'l Chem. 19–c (*Dairy Chemistry*)			8
D. H. 11–c (*Judging Dairy Products*)			2½
Convocation	1	1	1
Elective	6	15½	13
	51	52	50
*Agron. 2–a (*Forage Crops*)	7		
*A. H. 4–a (*Animal Anatomy*)	7½		
*P. H. 5–a (*Poultry Management*)	9		
*Agron. 3–b (*Cereal Crops*)		7	
*A. H. 5–b, 6–c (*Animal Diseases*)		7½	7½
*Agr'l Ec. 4–b (*Farm Accounting*)		8	

Senior Year

Acct. 131–a, 132–b, 133–c (*Elementary Accounting*)	7½	7½	7½
D. H. 3–a, 3.5–b (*Milk Production*)	10	7½	
Agr'l Ec. 2–a (*Farm Management*)	11		
Eng. 73–a (*Expository Writing*)	7½		
D. H. 5–a (*Market Milk*)	10		
Agron. 6–b (*Fertilizers*)		8	
E. E. 101–b (*Electricity on the Farm*)		10	
D. H. 6–c (*Ice Cream and Cheese*)			10
D. H. 10–c (*Dairy Seminar*)			5
D. H. 13–c (*Advanced Dairy Science*)			8
Educ. 30–c (*Applied Psychology*)			9
Elective	4	17	10½
	50	50	50
*Agr'l Ec. 1–a (*Coöperative Marketing*)	8		
*A. H. 3–a (*Feeds and Feeding*)	10		
*A. H. 7–a (*Animal Breeding*)	10		
*For. 23–a (*Farm Woodlot*)	7		
*Met. 1–a	7½		
*Ento. 3–b (*Insects of Domestic Animals*)		7½	
*Hort. 6–b (*Commercial Pomology*)		8	
*A. H. 9–c (*Sheep and Swine*)			8½
*Econ. 18–c (*Marketing*)			9
*D. H. 12–c (*Advanced Dairy Cattle Judging*)			5

* Recommended electives.

FORESTRY

Freshman Year

	Fall Term Units	Winter Term Units	Spring Term Units
Bot. 1–a, 2–b, 3–c (*Elementary Botany*)	8	8	8
Chem. 10–a, 11–b, 12–c (*Inorganic Chemistry*)	8½	8½	8½
Eng. 1–a, 2–b, 3–c (*English Composition*)	7½	7½	7½
Math. 21–a, 22–b (*Algebra and Trigonometry*)	8	8	
For. 3–a (*Dendrology*)	9		
For. 4–b (*Wood Identification*)		9	
Agric. 2–b (*Survey of Agriculture*)		2	
C. E. 6–c (*Surveying*)			7½
For. 25–c (*Forest Improvements*)			9
Mil. Sci. 1–a, 2–b, 3–c	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
Convocation	1	1	1
Freshman Assembly (Required Fall Term)			
	49	51	48½

Sophomore Year

Agr'l Chem. 1–a, 2–b (*Agricultural Chemistry*)	12	12	
Zoöl. 1–a, 2–b, 3–c (*Principles of Zoölogy*)	10	10	10
Phys. 1–a, 2–b, 3–c (*Introductory Physics*)	8	8	8
For. 6–a, 24–b, 7–c (*Silviculture*)	10	9	10
C. E. 7–a (*Surveying*)	7½		
Geol. 20–b (*Elementary Geology*)		8	
Agron. 4–c (*Soils*)			10
M. E. 7–c (*Mechanical Drawing*)			5
Mil. Sci. 4–a, 5–b, 6–c	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Convocation	1	1	1
	55½	55	51

Junior Year

Bot. 4–b, 5–c (*Plant Physiology*)		8	8
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½	
Met. 1–a (*Elementary Meteorology*)	7½		
For. 5–a (*Silvics*)	10		
Ento. 1–a, 13–c (*Economic Entomology and Forest Insects*)	10		7½
For. 26–a, 8–b, 9–c (*Forest Mensuration*)	9	9	9
For. 16–b, 17–c (*Logging and Forest Products*)		9	9
For. 13–b, 14–c (*Thesis*)		8	8
Convocation	1	1	1
Electives		5½	5½
	45	48	48

For. 22–s (*Summer Camp*) ..... 23 units

Senior Year

Bot. 12–a, 13–b (*Plant Pathology*)	8	8	
Agr'l Ec. 3–b (*Rural Economics*)		9	
Bot. 19–c (*Systematic Botany*)			6
For. 15–a (*Thesis*)	8		
For. 10–a, 11–b, 12–c (*Forest Management*)	8	8	8
For. 18–b, 19–c (*History of Forestry*)		8	8
For. 20–a, 21–b (*National Forest Administration*)	7	7	
Eng. 73–a, 60–c (*Expository Writing*) (*Public Speaking*)	7½		7½
Electives	4½	5	8½
	43	45	38

HORTICULTURE

Junior Year

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½	
Zoöl. 32–a (*Genetics*)	8		
†Hort. 10–b (*Evolution and Improvement of Plants*)		5	
†Ento. 2–a (*Orchard Insects*)	7½		
Bot. 12–a, 13–b (*Plant Pathology*)	8	8	
Agr'l Ec. 3–b (*Rural Economics*)		9	
Hort. 21–c (*Practice*)			50
Convocation	1	1	
Elective	19	26½	
	51	52	50
*Hort. 2–a (*Greenhouse*)	7		
*Hort. 20–a (*Beekeeping*)	5		
*Agron. 2–a (*Forage Crops*)	7		
*P. H. 5–b (*Poultry Management*)		9	
*Hort. 11–b (*Vegetable Forcing*)		7	
*Acct. 131–a, 132–b, 133–c (*Elementary Accounting*)	7½	7½	7½
*Econ. 50–c (*Principles of Business*)			9
*Agr'l Ec. 4–b (*Farm Accounting*)		8	

Senior Year

Hort. 5–a (*Fruit and Vegetable Survey*)	5		
Agr'l Ec. 2–a (*Farm Management*)	11		
Eng. 73–a (*Expository Writing*)	7½		
Hort. 12–a, 12.5–b (*Seminar*)	4	4	
‡Hort. 6–b (*Advanced Pomology*)		8	
Bot. 4–b, 5–c (*Plant Physiology*)		8	8
Hort. 7–c (*Landscape Gardening*)			9
Hort. 7.5–c (*Landscape Gardening: Laboratory Design*)			2
Eng. 60–c (*Public Speaking*)			7½
Elective	15	30	23½
	50	50	50
*Agr'l Ec. 1–a (*Coöperative Marketing*)	8		
*Hort. 17–a (*Commercial Vegetable Gardening*)	7		
*Hort. 18–a (*Ornamental Shrubs*)	5		
*Hort. 22–a (*Fruit Judging*)	7		
*D. H. 3–a, 3.5–b (*Milk Production*)	10	7½	
*Met. 1–a	7½		
*Agron. 6–b (*Fertilizers*)		8	
*Elec. Eng. 101–b (*Electricity on the Farm*)		10	
*Hort. 23–b (*Commercial Pomology*)	7		
*Agron. 3–b (*Cereal Crops*)		7	
*Hort. 9–b, 9.5–c (*Floriculture*)		5	5
*Hort. 4–c (*Small Fruits*)			7
*A. H. 9–c (*Sheep and Swine*)			8½
*Econ. 18–c (*Marketing*)			9

† Given in alternate years.
* Recommended electives.
‡ Not required if Horticulture 17–a is taken.

POULTRY HUSBANDRY

Junior Year

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½	
Zoöl. 32–a (*Genetics*)	8		
Agron. 3–b (*Cereal Crops*)		7	
P. H. 17–b (*Poultry Marketing*)		7	
P. H. 6–b (*Poultry Diseases*)		10	
Agr'l Ec. 3–b (*Rural Economics*)		9	
P. H. 13–c (*Practical Work*)			50
Convocation	1	1	
Elective	34½	10½	
	51	52	50
*Agron. 2–a (*Forage Crops*)	7		
*A. H. 4–a (*Animal Anatomy*)	7½		
*Hort. 11–b (*Vegetable Forcing*)		7	
*Zoöl. 40–b (*Embryology*)		12	
*Agr'l Ec. 4–b (*Farm Accounting*)		8	

Senior Year

P. H. 5–b (*Poultry Management*)		9	
P. H. 10–a (*Poultry Breeding*)	7		
P. H. 23–a (*Breeds and Judging*)	6½		
P. H. 31–a, 32–b, 33–c (*Seminar*)	5	5	5
Agr'l Ec. 2–a (*Farm Management*)	11		
E. E. 101–b (*Electricity on the Farm*)		10	
Eng. 73–a (*Expository Writing*)	7½		
P. H. 14–a, 15–b, 16–c (*Poultry Research*)	6–9	6–9	6–9
P. H. 7–b (*Incubation*)		10	
Eng. 60–c (*Public Speaking*)			7½
Econ. 50–c (*Principles of Business*)			9
P. H. 9–c (*Poultry Feeding*)			10
P. H. 12–c (*Brooding*)			4
P. H. 22–c (*Poultry House Construction*)			3
Elective	7	10	5½
	50	50	50
*Agr'l Ec. 1–a (*Coöperative Marketing*)	8		
*A. H. 3–a (*Feeds and Feeding*)	10		
*For. 23–a (*Farm Woodlot*)	8		
*Acct. 131–a, 132–b, 133–c (*Elementary Accounting*)	7½	7½	7½
*Met. 1–a	7½		
*Agr'l Chem. 4–a, 5–b (*Physiological Chemistry*)	10	10	
*Agron. 6–b (*Fertilizers*)		8	
*Hort. 6–b (*Advanced Pomology*)		8	
*Hort. 4–c (*Small Fruits*)			7
*Econ. 18–c (*Marketing*)		9	

* Recommended electives.

TEACHER TRAINING

Junior Year

	Fall Term Units	*Winter Term Units*	*Spring Term Units*
Agron. 2–a (*Forage Crops*)	7		
D. H. 3–a (*Milk Production*)	10		
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½	
Ed. 34–a (*Applied Psychology*)	10		
Ed. 39–b (*Secondary Education*)		10	
Agr'l Ec. 3–b (*Rural Economics*)		9	
P. H. 11–b (*Poultry for Teachers*)		5	
M. E. 35–a, 36–c (*Farm Carpentry and Metal Work*)	7		7
Agr'l Ec. 4–b (*Farm Accounting*)		8	
Agron. 3–b (*Cereal Crops*)		7	
Econ. 18–c (*Marketing*)			9
Ed. 40–c (*Classroom Methods*)			10
Eng. 60–c (*Public Speaking*)			7½
P. H. 9–c (*Poultry Feeding*)			10
P. H. 12–c (*Poultry Brooding*)			4
Soc. 28–b (*Rural Sociology*)		6	
Convocation	1	1	1
Elective	7½		
	50	53½	48½
*A. H. 4–a (*Anatomy*)	7½		
*Ento. 2–a (*Insects of Garden and Orchard*)	7½		
*Acct. 131–a, 132–b, 133–c (*Elementary Accounting*)	7½	7½	7½
*Ed. 38–a (*Secondary Education*)	10		
*A. H. 5–b, 6–c (*Animal Diseases*)		7½	7½
*D. H. 3.5–b (*Milk Production*)		7½	
*Hort. 4–c (*Small Fruits*)			7
*Hort. 19–c (*Beekeeping*)			5

Senior Year

Agr'l Ec. 1–a (*Coöperative Marketing*)	8		
Agr'l Ec. 2–a (*Farm Management*)	11		
A. H. 3–a (*Feeds and Feeding*)	10		
Bot. 12–a (*Plant Pathology*)	8		
†For. 23–a (*Farm Woodlot*)	7		
Ed. 42–a (*History and Principles of Vocational Education*)	10		
Agron. 6–b (*Fertilizers*)		8	
Agron. 13–b (*Farm Shop*)		7	
Bot. 18–b (*Plant Pathology*)		3	
Ed. 32–b (*Psychology of Adolescence*)		10	
Ed. 48–b (*Agriculture in High School*)		9	
E. E. 101–b (*Electricity on the Farm*)		10	
Ed. 41–c (*Practice Teaching*)			50
Elective			
	54	47	50
*Met. 1–a (*Meteorology*)	7½		
*Hort. 6–b (*Advanced Pomology*)		8	
*Ed. 43–b (*Mental Hygiene*)		10	

* Recommended electives.
† Given in alternate years.

COLLEGE OF LIBERAL ARTS

ALBERT N. FRENCH, *Dean*

DEPARTMENTS

ECONOMICS AND ACCOUNTING	PHILOSOPHY AND PSYCHOLOGY
EDUCATION	PHYSICAL EDUCATION FOR WOMEN
ENGLISH	POLITICAL SCIENCE
HISTORY	SOCIOLOGY
HOME ECONOMICS	STATISTICS
LANGUAGES	ZOÖLOGY
MUSIC	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 Undergraduate Degrees.)

Education—Professional Education Course.—Students preparing to teach in secondary schools should plan to take the course in professional education; 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 courses included 12 semester hours of college work in Education. Education as stated here includes subjects in education, psychology, special methods courses, and educational 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.

Students transferring from State Normal Schools who meet the Liberal Arts requirements will be given 267 time units credit for the two-year normal course and 378 time units for the three-year course. Graduates of the Professional Education Course will be entitled to a license to teach in New Hampshire secondary schools. After one year of successful teaching experience they will be entitled to a permanent certificate.

Home Economics Course.—The courses in home economics are planned to meet the demands for scientific training in home making.

Special courses are outlined for students who wish to enter fields of professional activity along educational and institutional lines of work and other courses are offered as electives for students in the Liberal Arts courses who wish to study one or more phases of home making.

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 demand a knowledge of the principles of human nutrition and dietetics, and of the principles of economics, psychology and sociology. The study of color, and design are fundamental to the work in costume design and house decoration.

The home economics courses offered are as follows:

(1) Teacher Training Course. To prepare students to teach home economics in junior and senior high schools. (See Teacher Training Course.)

(2) Institutional Management Course. To train students for positions as dietitians and managers, or assistant dietitians or assistant managers in public institutions such as college dormitories, hospitals, tea rooms, cafetarias, etc. (See Institutional Course.)

(3) Extension Training Course. To train students to become Home Demonstration Agents and Boys' and Girls' Club Agents.

(4) General Arts Major in Home Economics. (Students wishing to take the General Arts Major in Home Economics should make out their schedules with the head of the department.) (See page —.)

(5) Special Elective Unit Courses (Students wishing to take elective courses should consult the department head before registering for them.)

Business Fundamentals Course.—Students wishing to prepare for a business career should take the general business course. This course has been planned so as to offer the foundation for a broad cultural education during the first and second years of the course, and then to introduce the student to the more general business courses in the Junior and Senior years.

Pre-medical Course.—This course is offered to meet the needs of students who are preparing for the medical profession.

It is highly desirable that a student should spend four years at this institution in preparation for a medical training, although many medical colleges do not require a degree for entrance. The four years of pre-

medical work will, however, give the student a good cultural foundation for his future pre-medical work.

Students following the prescribed pre-medical course will be granted entrance into any Class A medical school. However, owing to the crowded condition of most medical schools, only those students standing in the upper third or half of their class during their pre-medical work may be admitted. Some medical institutions restrict the number of students from any pre-medical school in which case, preference is always given to those students having the most complete training, and standing highest in their pre-medical work.

If a student plans to do less than four years of pre-medical work, he should have his course of study carefully checked by the head of the Zoölogy department.

Pre-Law Course.—This course is planned to meet the needs of students who are looking towards law as a profession. (See Pre-Law Course.)

Physical Education.—Professional Education for Women. This course is planned to give professional instruction to women students who intend to teach physical education. (See Physical Education Course.)

UNIVERSITY OF NEW HAMPSHIRE

COLLEGE OF LIBERAL ARTS

GENERAL LIBERAL ARTS COURSE

Freshman Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
Eng. 1.5–a, 2.5–b, 3.5–c (*English Reading*)	9	9	9
*Mil. Sci. 1–a, 2–b, 3–c	5	5	5
*Phys. Ed. 51–a, 52–b, 53–c	2	2	2
Elect one subject from each of the three groups, I, II, III:			
Group I. ‡a. Math. 101–a, 102–b, 103–c, 1–a, 2–b, 3–c, Stat. 1–a, 2–b	7½–12½	7½–12½	7½–12½
b. Hist. 1–a, 2–b, 3–c	9	9	9
†c. Lang. 1–a, 2–b, 3–c (*French, German, Latin, Spanish*)	9–10	9–10	9–10
Group II. Bot. 1–a, 2–b, 3–c	8	8	8
Chem. 7–a, 8–b, 9–c	10	10	10
Geol. 1–a, 2–b, 3–c	10	10	10
Physics 1–a, 2–b, 3–c	8	8	8
Zoöl. 1–a, 2–b, 3–c	10	10	10
NOTE.—Additional science electives need special approval.			
Group III. Soc. Sci. 1–a, 2–b, 3–c	9	9	9
Preferred Electives:			
Ed. 11–a, b, c	6	6	6
	50	50	50

Sophomore Year

Convocation	1	1	1
§ Mil. Sci. 4–a, 5–b, 6–c	5	5	5
§ Phys. Ed. 54–a, 55–b, 56–c	2	2	2
Eng. 4–a, 5–b, 6–c (*Advanced Composition*)	9	9	9
Elect one from each of the three groups, I, II, III:			
Group I. ‡a. Math. 101–a, 102–b, 103–c, 1–a, 2–b, 3–c Stat. 1–a, 2–b	7½–12½	7½–12½	7½–12½
b. Hist. 1–a, 2–b, 3–c	9	9	9
†c. Lang. 1–a, 2–b, 3–c (*French, German, Latin, Spanish*)	9–10	9–10	9–10
d. Eng. 16–a, 17–b, 18–c	7½	7½	7½
Group II. Bot. 1–a, 2–b, 3–c	8	8	8
Chem. 7–a, 8–b, 9–c	10	10	10
Geol. 1–a, 2–b, 3–c	8	8	8
Phys. 1–a, 2–b, 3–c	8	8	8
Zoöl. 1–a, 2–b, 3–c	10	10	10
NOTE.—Additional science electives need special approval.			
Group III. Econ. 1–a, 2–b, 3–c	9	9	9
Ed. 21–a, 22–b, 23–c	10	10	10
Pol. Sci. 101–a, 102–b, 103–c	6	6	6
Psy. 21–a, 22–b, 23–c	10	10	10
Phil. 24–a, 25–b, 26–c	10	10	10
Soc. Sci. 1–a, 2–b, 3–c	9	9	9
Soc. 14–a, 15–b, 16–c	9	9	9
Electives to meet term requirements.			
	50	50	50

* Physical Education 1–a, 2–b, 3–c and 13–a are required of all Freshmen women.

‡ Open only to freshmen with one year each of Algebra and Plane Geometry.

† Students presenting two years of a language for entrance should secure departmental approval to register for 4–a, 5–b, 6–c.

§ Physical Education 4–a, 5–b, 6–c (2 units each are required of women students instead of Military Science and Physical Education 54–a, 55–b, 56–c).

JUNIOR YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Convocation	1	1	1
Phys. Ed. 7–a, 8–b, 9–c (women)	2	2	2
Major requirements and electives to meet term requirements.			
	50	50	50

SENIOR YEAR

Major requirements and electives	50	50	50

HOME ECONOMICS COURSES

I. Vocational Courses:
   A. Teacher Training Course
   B. Institutional Management Course
   C. Extension Training Course
II. General Arts Major in Home Economics
III. Elective unit courses for all students.

FRESHMAN YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
Eng. 1.5–a, 2.5–b, 3.5–c	9	9	9
Soc. Sci. 1–a, 2–b, 3–c	9	9	9
Chem. 14–b, 15–c		12	12
H. E. 20–a, 21–b, 22–c (*Clothing Selection*)	9	9	9
H. E. 102–a	5		
Phys. Ed. 1–a, 2–b, 3–c	2	2	2
Phys. Ed. 13–a (*Health Problems*)	2		
Zoöl. 33–a, 34–b, 35–c (*Human Anatomy and Physiology*)	8	8	8
Electives	5		
	50	50	50

SOPHOMORE YEAR

Convocation	1	1	1
Eng. 4–a, 5–b, 6–c (*Composition*)	9	9	9
Phys. 33–b, 34–c (*Household Physics*)		10	10
Agr'l Chem. 23–a, 24–b	12	12	
H. E. 52–a, 53–b, 54–c (*Food and Cookery*)	9	9	9
H. E. 84–c (*Home Furnishing*)			6
Phys. Ed. 4–a, 5–b, 6–c	2	2	2
Arch. 20–a, 21–b (*Domestic Architecture*)	4	4	
H. E. 60–c (*Dietetics*)			9
H. E. 82–a (*Home Management*)	9		
Electives	4	3	4
	50	50	50

JUNIOR YEAR

Convocation	1	1	1
Phys. Ed. 7–a, 8–b, 9–c	2	2	2
Econ. 1–a, 2–b	9	9	
Bot. 8–a, 8.5–b (*Bacteriology*)	9	9	
Ed. 31–a, 32–b, 33–c (*Psychology*)	10	10	10
*H. E. 71–c (*Child Development*)			6
H. E. 70–a (*Child*)	4		
H. E. 72–c (*The Family*)			6
*H. E. 88–c (*Home Management House*)			12
*H. E. 26–a (*Millinery*)	3		
*H. E. 26.5–a (*Pattern Study*)	3		
Electives	9	19	13
	50	50	50

* Required of Teacher Training and Extension majors only.

UNIVERSITY OF NEW HAMPSHIRE

TEACHER TRAINING COURSE

SENIOR YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Ed. 40–c (*Classroom Methods*)			10
Ed. 42–a (*History and Principles of Vocational Education*)	10		
H. E. 57–a (*Meal Preparation*)	6		
H. E. 27–a (*Construction Problems*)	4		
H. E. 1–c (*Textiles*)			4
H. E. 106–a, 108–c (*Home Economics Education*)	6		6
H. E. 107–b (*Home Economics Teaching*)		50	
H. E. 83–a (*Home Care of the Sick*)	6		
Electives	18		30
	50	50	50

INSTITUTIONAL MANAGEMENT COURSE

SENIOR YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Zoöl. 13–a, 14–b, 15–c (*Hygiene and Sanitation*)	7	7	7
Ent. 4–c (*Household Insects*)			7½
Acct. 112–a, 113–b (*Accounting*)	10	10	
H. E. 91–a, 92–b (*Institutional Management*)	6	6	
H. E. 94–a–b–c (*Institutional Practice*)	9 or	9 or	9
H. E. 83–a (*Home Care of the Sick*)	6		
H. E. 61–a (*Nutrition*)	6		
H. E. 57–a (*Meal Preparation*)	6		
Electives to meet term requirements			
	50	50	50

EXTENSION TRAINING COURSE

SENIOR YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Zoöl. 13–a, 14–b (*Hygiene and Sanitation*)	7	7	
Agri. 2–b (*Extension Organization and Methods*)		8	
Agri. 3–c (*Supervised Extension Work*)			50
Soc. 28–b (*Rural Sociology*)		6	
H. E. 27–a (*Construction Problems*)	4		
H. E. 106–a (*Home Economics Education*)	6		
H. E. 88–a (*Home Management House*)	12		
D. H. 8–a (*Domestic Dairying*)	7½		
H. E. 83–a (*Home Care of the Sick*)	6		
H. E. 57–a (*Meal Preparation*)	6		
Electives to meet term requirements			
	50	50	50

1. General Arts Major students and others wishing to elect work in Home Economics should arrange their schedules with the head of the department.

COLLEGE OF LIBERAL ARTS

BUSINESS FUNDAMENTALS COURSE

Freshman Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
Mil. Sci. 1–a, 2–b, 3–c (*Military Science*)	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
Eng. 1.5–a, 2.5–b, 3.5–c (*English Reading*)	9	9	9
Math. 101–a, 102–b, 103–c (*Mathematics*)	7½	7½	7½
Soc. Sci. 1–a, 2–b (*Social Science*)	9	9	
Econ. 50–c (*Principles of Business*)			9
A Science (*Botany, Chemistry, Physics, Zoölogy, Geology*)	7–10	7–10	7–10
*A Foreign Language or European History	9	9	9
	50–51	50–51	50–51

Sophomore Year

Convocation	1	1	1
Mil. Sci. 4–a, 5–b, 6–c (*Military Science*)	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Eng. 4.5–a, 5.5–b, 6.5–c (*Business English*)	9	9	9
Acct. 112–a, 113–b, 114–c (*Accounting*)	10	10	10
Econ. 1–a, 2–b, 3–c (*Principles of Economics*)	9	9	9
Econ. 6–a (*Economic and Commercial Geography*)	9		
Econ. 7–b, 8–c (*Economic and Commercial History*)		9	9
Stat. 1–a, 2–b (*Statistics*)	7	7	
Math. 104–c (*Mathematics*)			7½
	52	52	52½

Junior Year

Convocation	1	1	1
Econ. 71–a, 72–b, 73–c (*Commercial Law*)	9	9	9
Econ. 13–a, 14–b (*Money and Banking*)	9	9	
Econ. 18–c (*Marketing*)			9
Econ. 22–a (*Corporations*)	9		
Econ. 23–b (*Corporation Finance*)		9	
Econ. 24–c (*Public Regulation*)			9
Acct. 115–a, 116–b, 117–c	10	10	10
Electives			
	50	50	50

Senior Year

Econ. 10–a (*Labor Problems*)	10		
Econ. 57–c (*Salesmanship*)			9
Eng. 61–a (*Argumentation and Debating*)	9		
Eng. 60–c (*Public Speaking*)			9
Electives			
	50	50	50

* Required of Teacher Training and Extension majors only.

PRE-MEDICAL COURSE

Freshman Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
Chem. 7–a, 8–b, 9–c (*Inorganic Chemistry*)	10	10	10
Eng. 1.5–a, 2.5–b, 3.5–c (*English Reading*)	9	9	9
Fr. 4–a, 5–b, 6–c (*French Prose*) or	10	10	10
Ger. 1–a, 2–b, 3–c (*Elementary German*)	9	9	9
Mil. Sci. 1–a, 2–b, 3–c (*Military Science*)	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
*Math. 101–a, 102–b, 103–c (*Mathematics*) or	7½	7½	7½
*Soc. Sci. 1–a, 2–b, 3–c (*Social Science*)	9	9	9
Zoöl. 1–a, 2–b, 3–c (*Principles of Zoölogy*)	10	10	10
	50	50	50

Sophomore Year

Convocation	1	1	1
Chem. 25–a, 26–b, 27–c (*Introductory Qualitative and Quantitative Analysis*)	7½	7½	7½
Eng. 4–a, 5–b, 6–c (*English Composition*)	9	9	9
*Fr. 7–a, 8–b, 9–c (*French*) or	10	10	10
*Ger. 4.5–a, 5.5–b, 6.5–c (*Scientific German*)	8½	8½	8½
Mil. Sci. 4–a, 5–b, 6–c (*Military Science*)	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Zoöl. 45–a, 46–b, 47–c (*Comparative Anatomy*)	12	12	12
	50	50	50

Junior Year

Convocation	1	1	1
Chem. 46–a, 47–b, 48–c (*Organic Chemistry*)	9	9	9
Chem. 49–a, 50–b, 51–c (*Organic Laboratory*)	6	6	6
Phys. 17–a, 18–b, 19–c (*Pre-medical Physics*)	14	14	14
Zoöl. 48–a, 49–b, 50–c (*Cytology and Genetics*)	12	12	12
*Eng. 61–a (*Argumentation and Debating*)	9		
*Eng. 16–a, 17–b, 18–c (*English Literature*)	9	9	9
*Eng. 60–c (*Public Speaking*)			9
*Fr. 13–a, 14–b, 15–c (*Advanced French*)	10	10	10
*Geol. 1–a, 2–b, 3–c (*Elementary Geology*)	10	10	10
*Ger. 7–a, 8–b, 9–c (*Advanced German*)	10	10	10
*Hist. 29–a, 30–b, 31–c (*History of United States*)	8	8	8
*Psy. 21–a, 22–b, 23–c (*Introduction to Psychology*)	10	10	10
*Soc. 14–a, 15–b, 16–c (*Principles of Sociology*)	9	9	9
*Zoöl. 36–a, 37–b, 38–c (*Histology*)	12	12	12
*Zoöl. 51–a, 52–b, 53–c (*Neurology*)	12	12	12
	50	50	50

Senior Year

Zoöl. 39–a, 40–b, 41–c (*Embryology*)	12	12	12
*Chem. 66–a, 67–b, 68–c (*Physical Chemistry*)	7½	7½	7½
Agr'l Chem. 4–a, 5–b, 21–c (*Physiological Chemistry*)	10	10	10
*Econ. 1–a, 2–b, 3–c (*Principles of Economics*)	9	9	9
*Hist. 22–a, 23–b, 24–c (*English History*)	9	9	9
*Phil. 24–a, 25–b, 26–c (*Philosophy*)	10	10	10
*Pol. Sci. 104–a, 105–b, 106–c (*American and Municipal Government*)	9	9	9
*Psy. 47–a, 48–b, 49–c (*Physiological Psychology*)	10	10	10
*Soc. 24–a, 25–b, 26–c (*Advanced Sociology*)	9	9	9
*Zoöl. 16–a, 17–b, 18–c (*Evolution and Genetics*)	7	7	7
Zoöl. 42–a, 43–b, 44–c (*Advanced Physiology*)	12	12	12
	50	50	50

* Recommended electives.

PROFESSIONAL EDUCATION

Freshman Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
Educ. 11–a	6		
Eng. 1–a, 2–b, 3–c	7½	7½	7½
Hist. 1–a, 2–b, 3–c	9	9	9
Mil. Sci. 1–a, 2–b, 3–c	5	5	5
Phys. Ed. 51–a, 52–b, 53–c	2	2	2
Soc. Sci. 1–a, 2–b, 3–c	9	9	9
Elect one: Botany, Chemistry, Physics, Zoölogy	8–10	8–10	8–10
Elect one: Math. 19–b, 120–c, Eng. 2.5–b, 3.5–c, H. E. 25–b, 26–a, 15–c, 54–c, Lib. Sci. 1–b, Geol. 1.5–b, Zoöl. 27–c		3–9	3–9
	47½–49½	44½–52½	44½–52½

Sophomore Year

Convocation	1	1	1
Educ. 21–a, 22–b, 23–c	10	10	10
Eng. 61–a, 60–b, 63–c	9	7½	9
Mil. Sci. 4–a, 5–b, 6–c	5	5	5
Phys. Ed. 54–a, 55–b, 56–c	2	2	2
Psy. 21–a, 22–b, 23–c	10	10	10
Group I elective	9	9	9
Group II elective	8–10	8–10	8–10
	54–56	52½–54½	54–56

Junior Year

Convocation	1	1	1
Educ. 31–a, 32–b, 33–c	10	10	10
Educ. 38–a, 39–b, 40–c	10	10	10
Elect Special Methods in three related subjects	9	9	9
Elect two courses in subjects to be taught	18	18	18
	48	48	48

Senior Year

Educ. 41–a or b or c	50	50	50
Educ. 44–b or c		10	10
Elect two courses in subjects to be taught	18	18	18
Free electives to complete 600 time units			

PRE-LAW COURSE

Freshman Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
Eng. 1.5–a, 2.5–b, 3.5–c (*English Reading*)	9	9	9
Mil. Sci. 1–a, 2–b, 3–c (*Military Science*)	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
†Lang.-Fr. or Ger. 1–a, 2–b, 3–c	9	9	9
‡Science: Zoöl. 1–a, 2–b, 3–c, Chem. 7–a, 8–b, 9–c, Bot. 1–a, 2–b, 3–c, Math. 101–a, 102–b, 103–c	7–10	7–10	7–10
Soc. Sci. 1–a, 2–b, 3–c	9	9	9
Hist. 1–a, 2–b, 3–c	9	9	9
	51	51	51

† Students presenting two years of a language should enroll for 4–a, 5–b, 6–c.
‡ Any courses which meet the science requirement in Liberal Arts.

SOPHOMORE YEAR

	Fall Term ("*a*")	*Winter Term* ("*b*")	*Spring Term* ("*c*")
Convocation	1	1	1
Eng. 4–a, 5–b, 6–c	9	9	9
Phys. Ed. 54–a, 55–b, 56–c	2	2	2
Mil. Sci. 4–a, 5–b, 6–c	5	5	5
Pol. Sci. 101–a, 102–b, 103–c	6	6	6
Pol. Sci. 104–a, 105–b, 106–c	9	9	9
Lang.—Fr. or Ger. 4–a, 5–b, 6–c	10	10	10
‡Science: Zoöl. 1–a, 2–b, 3–c, Chem. 7–a, 8–b, 9–c, Phys. 1–a, 2–b, 3–c, Bot. 1–a, 2–b, 3–c, Geol. 1–a, 2–b, 3–c, and Math. 101–a, 102–b, 103–c	7–10	7–10	7–10
Electives:			
Psy. 21–a, 22–b, 23–c	10	10	10
Econ. 1–a, 2–b, 3–c	9	9	9
Soc. 14–a, 15–b, 16–c	9	9	9
Soc. 21–b		9	
	50	50	50

JUNIOR YEAR

Convocation	1	1	1
Pol. Sci. 113–a, 114–b, 115–c	9	9	9
Hist. 29–a, 30–b, 31–c	9	9	9
Electives:			
Eng. 61–a, 60–b, or 60–c	9	7½	7½
Phil. 31–a, 32–b, 33–c	10	10	10
Others	12	13½	13½
	50	50	50

SENIOR YEAR

Pol. Sci. 118–c			8
Pol. Sci. 112–a, 123–b, 124–c	4	4	4
Electives	46	46	38
	50	50	50

PROFESSIONAL COURSE IN PHYSICAL EDUCATION FOR WOMEN

FRESHMAN YEAR

	Fall Term ("*a*")	*Winter Term* ("*b*")	*Spring Term* ("*c*")
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
Eng. 1.5–a, 2.5–b, 3.5–c	9	9	9
†Lang.—Fr., Ger., Sp., 1–a, 2–b, 3–c or Hist., 1–a, 2–b, 3–c	9–10	9–10	9–10
Soc. Sci. 1–a, 2–b, 3–c	9	9	9
Sci. Sur. (*Astron. 122–a*), (*Geol. 1.5–b*), (*Zoöl. 27–c*)	3	3	3
Chem. 14–b, 15–c		12	12
Phys. Ed. 1.5–a, 2.5–b, 3.5–c	4	4	4
Phys. Ed. 13–a	2		
Preferred Elective: Education 11–b, or c		6	6
Elective	7		
	51½–52½	48½–49½	48½–49½

‡ Any courses which meet the science requirement in Liberal Arts.
† Students presenting two years of a language should enroll for 4–a, 5–b, 6–c.

Sophomore Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
*Convocation	1	1	1
Eng. 4–a, 5–b, 6–c	9	9	9
Zoöl. 33–a, 34–b, 35–c	8	8	8
Psy. 21–a, 22–b, 49–c	10	10	10
Ed. 21–a, 22–b, 47–c	10	10	10
Agr'l Chem. 23–a, 24–b	10	8	
H. E. 63–c			6
Phys. Ed. 14–a, 15–b, 16–c	4	4	4
Phys. Ed. 4.5–a, 5.5–b, 6.5–c	4	4	4
	56	54	52

Junior Year

Convocation	1	1	1
Zoöl. 13–a, 14–b, 15–c	7	7	7
Eng. 60–c			7½
Music 104–a, 105–b, 106–c	4	4	4
Ed. 39–b		10	
Ed. 33–c			10
Ed .31–a	10		
Phys. Ed. 17–b, 19–c		6	4
Phys. Ed. 18–a, 18–b	6	6	
Phys. Ed. 20–a, 21–b, 22–c	2	2	2
Phys. Ed. 23–a, 24–b, 25–d	6	4	4
Phys. Ed. 7.5–a, 8.5–b, 9.5–c	4	4	4
Soc. 17–a	9		
Electives	1	7	7
	50	51	50½

Senior Year

H. E. 83–a	6		
Ed. 43–b		10	
Ed. 32–b		10	
Ed. 40–c			10
Zoöl. 42–a, 43–b, 44–c	12	12	12
Soc. 29–c			6
Phys. Ed. 26–a, 27–b, 28–c	4	4	4
Phys. Ed. 29–a, 30–b, 31–c	2	2	2
Phys. Ed. 32–a, 33–b, 34–c	3	3	3
Phys. Ed. 35–a, 36–b, 37–c	6	6	6
Phys. Ed. 10.5–a, 11.5–b, 12.5–c	4	4	4
Phys. Ed. 38–c			4
Elective	13		
	50	51	51

* May be taken first term senior year.

COLLEGE OF TECHNOLOGY

GEORGE W. CASE, *Dean*

DEPARTMENTS

ARCHITECTURE
CHEMISTRY
CIVIL ENGINEERING
ELECTRICAL ENGINEERING
MATHEMATICS
MECHANICAL ENGINEERING
PHYSICS

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

Architectural Course.—This course is planned to prepare its graduates for immediate usefulness in the profession of architecture and, while it is highly technical, it does not overlook the need of the professional man for a broad cultural background.

The work in design in the sophomore and junior years is based on the programs issued by the Beaux Arts Institute of Design in New York City. This plan insures the maintenance of high scholarship, since the student's work is competitive not only with that of the other students in the department, but also with the work of students in other schools of architecture in the country.

A booklet, descriptive of the work of the department, will be sent to prospective students interested in architecture. Address your request to "Department of Architecture, University of New Hampshire, Durham, N. H."

Chemical Engineering Course.—This course is intended to fit the student for the career of a professional chemist, 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 either German or 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.

Civil Engineering Course.—This course is designed to give the student the groundwork of the broad field of civil engineering. About equal emphasis is placed upon highway, hydraulic, sanitary and structural engineering. The sophomore and junior years each contain four terms: fall, winter, spring and summer. The first three terms in both years are devoted to regular class work. The summer term of the sophomore year is for actual employment in surveying and that of the junior year on construction work. The student is under the general supervision of a member of the Faculty during these periods of employment. This work, including a report, is required for graduation.

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 needed to understand the constantly increasing number of new problems that require solution.

Mechanical Engineering Course.—The mechanical engineering course is intended to train young men for positions of responsibility in the field of the mechanical industries and designed to fit them socially for their proper place in the world. 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, including English, history and psychology.

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.

Industrial Engineering.—This line of study, which is an option in Mechanical Engineering, is designed to train students for positions in the

production and commercial departments of industry. The course is well balanced in basic sciences, engineering, economics, history, psychology and in addition to the work at the University the student is placed in actual employment in industry, under the general supervision of a member of the Faculty. This employment, which is scheduled in the curriculum as coöperative work and on which a report is required, is a requirement for graduation.

Industrial Teacher Training.—This line of work is an option in the senior year for Mechanical and Electrical Engineering students especially adapted to teaching. The educational subjects given in this course are designed to prepare for Smith-Hughes teaching positions.

Concerns Furnishing Coöperative Work For Technology Students.

Acme Knitting Machine & Needle Co., Franklin, N. H.
Amoskeag Manufacturing Company, Manchester, N. H.
Boston and Maine Railroad, Billerica, Mass.
Brown Company, Berlin, N. H.
Coleman Brothers, Boston, Mass.
Ford Motor Company, Boston, Mass.
Kidder Press Company, Dover, N. H.
Nashua Manufacturing Company, Nashua, N. H.
New England Power Association, Boston, Mass.
New Hampshire Gas and Electric Company, Portsmouth, N. H.
New York, New Haven & Hartford R. R. Co., Readville, Mass., and Van Ness, N. Y.
D. W. Overocker, Brattleboro, Vt.
Parker Young Company, Lincoln, N. H.
State Highway Department, Concord, N. H.
B. F. Sturtevant Company, Hyde Park, Mass.
Sullivan Machinery Company, Claremont, N. H.
U. S. Geological Survey, Washington, D. C.
Walworth Manufacturing Company, Boston, Mass.
Western Electric Company, Kearney, N. J.

COLLEGE OF TECHNOLOGY

ARCHITECTURE

Freshman Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Math. 1–a, 2–b, 3–c (*First Year Mathematics*)	12½	12½	12½
Chem. 1–a (*Inorganic Chemistry*)	10		
Eng. 1–a, 2–b, 3–c (*English Composition*)	7½	7½	7½
M. E. 1–a (*Engineering Drawing*)	6		
M. E. 10–a, or 16–a (*Wood Shop or Forge*)	7½		
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
Arch. 8–b, 9–c (*Graphics*)		5	5
Arch. 14–b, 12–c (*Elements of Architecture*)		5	5
Arch. 2–b, 3–c (*Elements of Design*)		5	5
Art 8–b, 9–c (*Design*)		6½	6½
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
	51½	49½	49½

Sophomore Year

Art 10–a, 11–b, 12–c (*Freehand Drawing*)	5	5	5
Arch. 4–a, 5–b, 6–c (*History of Architecture*)	2½	2½	2½
Arch. 50–a, 51–b, 52–c (*Architectural Design*)	14	16	16
Hist. 1–a, 2–b, 3–c (*History*)	9	9	9
Phys. 27–a, 28–b, 29–c (*Physics*)	9	9	9
Geol. 100–a (*Clay Products and Building Stones*)	6		
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Convocation	1	1	1
	53½	49½	49½

Junior Year

Arch. 30–a, 31–b, 32–c (*Materials of Construction*)	7½	7½	7½
Arch. 53–a, 54–b, 55–c (*Architectural Design*)	16	16	16
Art 13–a, 14–b, 15–c (*Color, Modeling, Life Drawing*)	4	4	4
E. E. 100–c (*Elements of Electricity*)			7½
C. E. 5–a (*Surveying*)	7½		
M. E. 79–b (*Heating and Ventilating*)		7½	
M. E. 49–a, 50–b, 51–c (*Mechanics*)	7½	7½	7½
Convocation	1	1	1
Elective	7½	7½	7½
	51	51	51

Senior Year

Arch. 33–a, 34–b, 35–c (*Building Construction*)	7½	7½	7½
Arch. 60–a, 61–b, 62–c (*Architectural Thesis*)	10	16	16
Arch. 23–a (*Domestic Architecture*)	9		
Arch. 39–a (*Building Sanitation*)	2½		
Arch. 41–b (*Professional Relations*)		5	
C. E. 86–c (*Specifications*)			2½
Acct. 131–a, 132–b, 133–c (*Accounting and Bookkeeping*)	7½	7½	7½
Econ. 104–a (*Economic History of the Working Classes*)	7½		
Econ. 105–b (*Business Administration and Finance*)		7½	
Econ. 106–c (*Law of Contracts*)			5
M. E. 12–c (*Wood Shop*)			2½
†Convocation	1	1	1
Elective	7½	7½	7½
	52½	52	49½

† Optional.

UNIVERSITY OF NEW HAMPSHIRE

TECHNOLOGY COURSE IN CHEMISTRY

Freshman Year

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Eng. 1–a, 2–b, 3–c (*English Composition*)	7½	7½	7½
Math. 1–a, 2–b, 3–c (*First Year Mathematics*)	12½	12½	12½
Chem. 1–a, 2–b, 3–c (*Inorganic Chemistry*)	10	10	10
Chem. 22–c (*Qualitative Analysis*)			11
M. E. 1–a (*Engineering Drawing*)	6		
M. E. 30–b (*Machine Work*)		5	
M. E. 10–a or 16–a (*Wood or Forge Work*)	7½		
Geol. 20–b (*General Geology*)		8	
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
	51½	51	49

Sophomore Year

Chem. 23–a (*Qualitative Analysis*)	5		
Chem. 40–a, 41–b, 42–c (*Organic Chemistry*)	7½	7½	7½
Chem. 43–a, 44–b, 45–c (*Organic Chemistry Laboratory*)	5	5	5
Chem. 28–b, 29–c (*Quantitative Analysis*)		8½	8½
Math. 7–a, 8–b, 9–c (*Calculus*)	7½	7½	7½
Phys. 6–a, 7–b, 8–c (*Physics*)	8½	8½	8½
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	11	10	10
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Convocation	1	1	1
	52½	55	55

Junior Year

Chem. 30–a, 31–b, 32–c (*Quantitative Analysis*)	12	12	12
Chem. 160–a, 161–b, 162–c (*Physical Chemistry*)	7½	7½	7½
Chem. 163–a, 164–b, 165–c (*Physical Chemistry Laboratory*)	7	7	7
Chem. 100–a, 101–b, 102–c (*Advanced Inorganic Chemistry*) or Chem. 152–a, 153–b, 154–c (*Advanced Organic Chemistry*)	7½	7½	7½
M. E. 46–a, 47–b, 48–c (*Mechanics*)	7½	7½	7½
Ger. 1–a, 2–b, 3–c (*German*)	9	9	9
Convocation	1	1	1
	51½	51½	51½

Senior Year

Chem. 110–a, 111–b, 112–c (*Industrial Chemistry*)	7½	7½	7½
Chem. 80–a, 81–b, 82–c (*Thesis*)	17½	17½	17½
Chem. 70–a, 71–b, 72–c (*Seminar*)	2½	2½	2½
E. E. 15–a, 16–b (*Industrial Electricity*)	7½	7½	
M. E. 66–b, 67–c (*Thermodynamics*)		7½	7½
Ger. 4.5–a, 5.5–b, 6.5–c (*German*)	8½	8½	8½
	43½	51	43½

COLLEGE OF TECHNOLOGY

CIVIL, ELECTRICAL AND MECHANICAL ENGINEERING

Freshman Year

	Fall Term ("*a*")	*Winter Term* ("*b*")	*Spring Term* ("*c*")
Math. 1–a, 2–b, 3–c (*First Year Mathematics*)	12½	12½	12½
Chem. 1–a, 5–b, 6–c (*Inorganic Chemistry*)	10	10	10
Eng. 1–a, 2–b, 3–c (*English Composition*)	7½	7½	7½
M. E. 1–a, 2–b, 3–c (*Engineering Drawing*)	6	6	6
Shop 10–a or 16–a (*Wood or Forge Work*)	7½		
Shop 10–b or 16–b (*Wood or Forge Work*)		7½	
C. E. 1–c (*Surveying*)			7½
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	5	5	5
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
Convocation	1	1	1
Freshman Assembly (*Required Fall Term*)			
	51½	51½	51½

Civil Engineering

Sophomore Year

	Fall Term ("*a*")	*Winter Term* ("*b*")	*Spring Term* ("*c*")	*Summer Term* ("*s*")
Math. 7–a, 8–b, 9–c (*Calculus*)	7½	7½	7½	
Econ. 101–a, 102–b (*Principles of Economics*)	7½	7½		
Phys. 6–a, 7–b, 8–c (*Physics*)	8½	8½	8½	
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	11	10	10	
C. E. 2–a (*Topographical Surveying*)	7½			
C. E. 3–b (*Topographical Drawing*)		5		
C. E. 4–c (*Railway Curves*)			5	
C. E. 20–c (*Highway Location*)			7½	
C. E. 8–b (*Engineering Astronomy*)		5		
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	5	5	5	
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2	
Convocation	1	1	1	
C. E. 93–s (*Coöperative Work*)				Regular Working Hours
	50	51½	46½	

Junior Year

E. E. 34–a, 35–b, 36–c (*Electrical Machinery*)	7½	7½	7½	
M. E. 43–a, 44–b, 45–c (*Applied Mechanics*)	7½	7½	7½	
M. E. 52–a, 53–c (*Testing Materials Laboratories*)	2½			
C. E. 21–a (*Highway Location*)	5			
C. E. 22–a (*Materials*)	5			
C. E. 60–a, 61–b, 62–c (*Stresses*)	10	10	10	
C. E. 41–b, 42–c (*Hydraulics*)		7	7	
C. E. 80–a, 81–b, 82–c (*A. S. C. E.*)	1½	1½	1½	
Geology 20–b		8		
Mil. Sci. 24–a (*Military Science*) or Met. 1–a (*Meteorology*)	7½			
Mil. Sci. 25–b (*Military Science*) or M. E. 104–b (*Personnel Administration*)		7½		
Mil. Sci. 26–c (*Military Science*) or Ed. 30–c			7½	
C. E. 94–s (*Coöperative Work*)				Regular Working Hours
Convocation	1	1	1	
	47½	50	47	

SENIOR YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
C. E. 23–a, 24–b, 25–c (*Economics of Highway Design*)	5	5	5
C. E. 26–a, 27–b, 28–c (*Economics of Railway Engineering and Transportation*)	5	5	5
C. E. 49–a, 50–b, 51–c (*Hydraulic Engineering*)	5	5	5
M. E. 61–a, 62–b, 63–c (*Heat Power Engineering*)	5	5	5
C. E. 63–a (*Bridge Design*)	10		
C. E. 64–b (*Building Design*)		10	
C. E. 65–c (*Concrete Structures*)			10
C. E. 45–a (*Water Supply*)	5		
C. E. 47–b (*Sewerage*)		5	
C. E. 46–b (*Water Purification*)		5	
C. E. 48–c (*Sewage Disposal*)			5
C. E. 83–a, 84–b, 85–c (*A. S. C. E.*)	1½	1½	1½
C. E. 90–a, 91–b, 92–c (*Thesis*)	5	5	5
C. E. 87–a, 88–b, 89–c (*Seminar*)	1	1	1
Mil. Sci. 27–a (*Military Science*) or Econ. 104–a (*Economic History of Working Classes*)	7½		
Mil. Sci. 28–b (*Military Science*) or Econ. 105–b (*Business Administration and Finance*)		7½	
Mil. Sci. 29–c (*Military Science*) or Econ. 106–c (*Commercial Law*) and C. E. 86–c (*Specifications*)			7½
	50	55	50

Electrical Engineering

SOPHOMORE YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
Math. 7–a, 8–b, 9–c (*Calculus*)	7½	7½	7½
Phys. 6–a, 7–b, 8–c (*Physics*)	8½	8½	8½
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	11	10	10
E. E. 31–a, 32–b, 33–c (*Electrical Laboratory*)	3	4	5
Math. 121–c (*Astronomy*)			3½
M. E. 56–c (*Kinematics*)			7
M. E. 4–a, 5–b (*Machine Drawing*)	5	5	
M. E. 20–a, 21–b (*Machine Shop*)	7½	7½	
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Convocation	1	1	1
	50½	50½	49½

JUNIOR YEAR

E. E. 37–a, 38–b, 39–c (*Electrical Problems*)	5	5	5
E. E. 1–a, 2–b, 3–c (*Dynamo Electric Machinery*)	9	9	9
E. E. 28–a, 29–b, 30–c (*Electrical Laboratory*)	5	5	5
M. E. 43–a, 44–b, 45–c (*Mechanics*)	7½	7½	7½
M. E. 64–a, 65–b (*Thermodynamics*)	7½	7½	
M. E. 68–a, 69–b, 53–c (*Mechanical Laboratory*)	5	5	5
Educ. 30–c (*Applied Psychology*)			7½
E. E. 41–a, 42–b, 43–c (*Student Branch of A. I. E. E.*)	1½	1½	1½
Econ. 104–a (*Economic History of the Working Classes*)	7½		
Econ. 105–b (*Business Administration and Finance*)		7½	
Econ. 106–c (*Law of Contracts*)			5
C. E. 86–c (*Specifications*)			2½
†Mil. Sci. 24–a, 25–b, 26–c (*Military Science*)			
Convocation	1	1	1
	49	49	49

† Students enrolling in Mil. Sci. 24–a, 25–b, 26–c are not required to enroll in Econ. 104–a, 105–b, 106–c, and C. E. 86–c.

SENIOR YEAR

	Fall Term ("a")	Winter Term ("b")	Spring Term ("c")
E. E. 7–a, 8–b, 9–c (*Electrical Engineering Practice*)	9	9	9
*E. E. 11–a, 12–b, 13–c (*Electrical Laboratory*)	10	10	12
E. E. 19–a (*Illumination Engineering*)	5		
*E. E. 4–a, 5–b, 6–c (*Wire and Radio Communication*)	7½	7½	12
E. E. 10–b (*Electric Railways*)		4	
E. E. 21–c (*Theory of Electrical Circuits*)			10
E. E. 22–a, 23–b, 24–c (*Term Papers*)	4	4	4
E. E. 44–a, 45–b, 46–c (*Student Branch of A. I. E. E.*)	1½	1½	1½
Phys. 15–a (*Theory of Electrons*)	7		
Phys. 37–c (*Electrical Measurements*)			4
M. E. 74–a, 75–b, 75.5–c (*Power Plant Engineering*)	5	5	5
C. E. 43–b, 44–c (*Hydraulics*)		7½	5
†Mil. Sci. 27–a, 28–b, 29–c (*Military Science*)			
	49	49½	49

Mechanical Engineering

SOPHOMORE YEAR

	Fall Term ("a")	Winter Term ("b")	Spring Term ("c")
Math. 7–a, 8–b, 9–c (*Calculus*)	7½	7½	7½
Phys. 6–a, 7–b, 8–c (*Physics*)	8½	8½	8½
Phys. 9–a, 10–b, 11–c (*Physics Laboratory*)	11	10	10
M. E. 56–c (*Kinematics*)			7
Math. 121–c (*General Astronomy*)			3½
M. E. 4–a, 5–b (*Machine Drawing*)	5	5	
M. E. 40–a, 41–b, 42–c (*Mechanical Laboratory*)	4	4	4
M. E. 20–a, 21–b (*Machine Work*)	7½	7½	
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*)	5	5	5
Phys. Ed. 54–a, 55–b, 56–c (*Physical Education*)	2	2	2
Convocation	1	1	1
	51½	50½	48½

JUNIOR YEAR

E. E. 25–a, 26–b, 27–c (*Electrical Machinery*)	11	11	11
M. E. 43–a, 44–b, 45–c (*Mechanics*)	7½	7½	7½
M. E. 64–a, 65–b, 65.5–c (*Thermodynamics*)	7½	7½	7½
M. E. 68–a, 69–b, 53–c (*Mechanical Laboratory*)	5	5	5
M. E. 82–a, 83–b, 84–c (*A. S. M. E.*)	1½	1½	1½
Mil. Sci. 24–a (*Military Science*) or Econ. 104–a (*Economic History of Working Classes*)		7½	
Mil. Sci. 25–b (*Military Science*) or Econ. 105–b (*Business Administration and Finance*)		7½	
Mil. Sci. 26–c (*Military Science*) or Econ. 106–c (*Law of Contracts*) and C. E. 86–c (*Specifications*)			5 2½
Convocation	1	1	1
Elective	7½	7½	7½
	48½	48½	48½

* Students may elect either E. E. 6–c or E. E. 13–c.

† Students electing Military Science 27–a, 28–b, 29–c are not required to enroll in Physics 15–a, E. E. 10–b and E. E. 21–c.

SENIOR YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*
M. E. 74–a, 75–b, 75.5–c (*Power Plants*)	5	5	5
M. E. 58–a, 59–b, 60–c (*Machine Design*)	7½	7½	7½
M. E. 55–a, 72–b, 73–c (*Mechanical Laboratory*)	5	7½	7½
M. E. 104–b		7½	
M. E. 54–a (*Manufacture of Iron and Steel*)	5		
M. E. 109–a	7½		
M. E. 112–a (*Materials Handling*)	7½		
C. E. 43–b, 44–c (*Hydraulics*)		7½	5
M. E. 79–c (*Heating and Ventilating*)			7½
M. E. 85–a, 86–b, 87–c (*A. S. M. E.*)	1½	1½	1½
M. E. 89–a, 90–b, 91–c (*Thesis*)	6	6	6
Mil. Sci. 27–a, 28–b, 29–c (*Military Science*) or M. E. 76–a, 77–b, 78–c (*Automotive Engineering*)	7½	7½	7½
	52½	50	47½

INDUSTRIAL ENGINEERING

FRESHMAN YEAR

	Fall Term ("a")	*Winter Term ("b")*	*Spring Term ("c")*	*Summer Term ("s")*
Eng. 1–a, 2–b, 3–c (*English Composition*)	7½	7½	7½	
Chem. 1–a, 5–b, 6–c (*Inorganic Chemistry*)	10	10	10	
Math. 1–a, 2–b, 3–c (*Unified Mathematics*)	12½	12½	12½	
M. E. 1–a, 2–b, 3–c (*Engineering Drawing*)	6	6	6	
Shop 10–a or 16–a (*Wood or Forge Work*)	7½			
Shop 10–b or 16–b (*Wood or Forge Work*)		7½		
C. E. 1–c (*Surveying*)			7½	
Mil. Sci. 18–a, 19–b, 20–c (*Military Science*)	5	5	5	
Phys. Ed. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2	
Convocation	1	1	1	
M. E. 100–s (*Coöperative Work*)				Regular Working Hours
	51½	51½	51½	

SOPHOMORE YEAR

Math. 7–a, 8–b (*Calculus*)	7½	7½		
Econ. 101–a, 102–b (*Elementary Economics*)	7½	7½		
Phys. 6–a, 7–b (*Physics*)	8½	8½		
Phys. 9–a, 10–b (*Physics Laboratory*)	11	10		
M. E. 20–a, 21–b (*Machine Shop*)	7½	7½		
Mil. Sci. 21–a, 22–b (*Military Science*)	5	5		
Phys. Ed. 54–a, 55–b (*Physical Education*)	2	2		
Convocation	1	1		
M. E. 101–c, 102–s (*Coöperative Work*)			Regular Working Hours	Regular Working Hours
	50	49		

JUNIOR YEAR

	Fall Term ("*a*")	*Winter Term* ("*b*")	*Spring Term* ("*c*")	
E. E. 25–a, 26–b, 27–c (*Electrical Machinery*)	11	11	11	
M. E. 46–a, 47–b, 48–c (*Mechanics*)	7½	7½	7½	
M. E. 4–c (*Machine Drawing*)			5	
M. E. 64–a, 65–b (*Thermodynamics*)	7½	7½		
M. E. 109–a, 110–b, 111–c (*Industrial Management*)	7½	7½	7½	
M. E. 82–a, 83–b, 84–c (*A. S. M. E.*)	1½	1½	1½	
Mil. Sci. 21–a, 22–b, 23–c (*Military Science*) or Acct. 131–a, 132–b, 133–c (*Elements of Accounts*)	7½	7½	7½	
Convocation	1	1	1	
Elective	7½	7½	7½	
M. E. 103–s (*Coöperative Work*)				Regular Working Hours
	51	51	48½	

SENIOR YEAR

M. E. 74–a, 75–b, 75.5–c (*Power Plants*)	5	5	5	
M. E. 70–a, 71–b, 73–c (*Mechanical Laboratory*)	7½	7½	7½	
C. E. 43–b, 44–c (*Hydraulics*)		7½	5	
M. E. 105–a, 106–b, 107–c (*Industrial Problems*)	5	5	5	
M. E. 112–a (*Materials Handling*)	7½			
M. E. 104–b (*Personnel Administration*)		7½		
M. E. 108–c (*Industrial Problems*)			7½	
M. E. 54–a (*Manufacture of Iron and Steel*)	5			
M. E. 85–a, 86–b, 87–c (*A. S. M. E.*)	1½	1½	1½	
Stat. 1–a, 2–b, Math. 25–c (*Mathematics of Finance and Statistics*)	7	7	6	
Mil. Sci. 27–a (*Military Science*) or Econ. 104–a (*Economic History of Working Classes*)	7½			
Mil. Sci. 28–b (*Military Science*) or Econ. 105–b (*Business Administration and Finance*)		7½		
Mil. Sci. 29–c (*Military Science*) or Econ. 106–c (*Law of Contracts*) and C. E. 86–c (*Specifications*)			7½	
M. E. 89–a, 90–b, 91–c (*Thesis*)	5	5	5	
	50	51½	50	

INDUSTRIAL TEACHER TRAINING COURSE

Senior Option for Electrical and Mechanical Engineering students:

	Fall Term ("*a*")	*Winter Term* ("*b*")	*Spring Term* ("*c*")
Ed. 42–a (*History and Principles of Vocational Education*)	10		
Ed. 39–b (*Secondary Education*)		10	
Ed. 40–c (*Classroom Methods*)			10
Ed. 34–a (*Applied Psychology in Vocational Education*)	10		
Ed. 32–b (*Psychology of Adolescence*)		10	
Ed. 23–c (*Classroom Management*)			10
Ed. 41–c (*Supervised Practice Teaching in Industrial Arts*)	12½	12½	12½
M. E. 24–a, 25–b, 26–c (*Machine Work*)	5	5	5
M. E. 76–a, 77–b, 78–c (*Automotive Engineering*)	7½	7½	7½
M. E. 18–a (*Forge Shop*)	5		
M. E. 14–b, 15–c (*Wood Shop*)		5	5
	50	50	50

UNIVERSITY OF NEW HAMPSHIRE

SUMMER SCHOOL

The University of New Hampshire Summer School (the seventh session of which will be held from June 30 to August 8, 1930) offers courses in most departments of all three colleges. The Summer School is designed to meet the needs of:

1. Teachers, superintendents and supervisors of secondary schools.
2. Students in the University of New Hampshire and in other colleges who desire to utilize the vacation period for the purpose of anticipating courses or supplying deficiencies.
3. Graduate students, who may earn the degree of Master of Arts or Master of Science for work done exclusively during summer sessions.
4. Candidates for admission to any of the colleges of the University who desire to obtain advanced standing or to complete some special requirement for admission.

For Summer School Bulletin, information as to particular courses, etc., address the Director of the Summer School, University of New Hampshire, Durham, N. H.

EXTENSION COURSES FOR UNIVERSITY CREDIT

In response to the insistent demand of the teachers of the state the Trustees of the University have approved the giving of extension courses for university credit. Professors are sent out to centers within the state where there is a demand for classes to be formed. At present the courses offered will depend on the teaching schedules of the various departments.

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 hours of recitations, preparation, or laboratory periods required a week; (4) the number of units the subject will count towards graduation. 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 AND BIOLOGICAL CHEMISTRY

THOMAS G. PHILLIPS, *Professor*
STANLEY R. SHIMER, *Assistant Professor*
THOMAS A. PICKETT, *Graduate Assistant*

Minor: 48 units in Agricultural Chemistry following at least 22 units in General Chemistry.

1–a. Agricultural Chemistry. A study of the chemistry of the carbon compounds with special emphasis on those of most importance in agriculture. The laboratory includes some methods of quantitative analysis. Prof. Shimer and Mr. Pickett.

Prerequisite: Chemistry 12–c. Required of Sophomores in Agriculture. Lec., 3 hrs.; lab., 5 hrs.; prep., 4 hrs.; 12 units.

2–b. Agricultural Chemistry. A survey of the relations of chemistry to the growth and development of plants and animals. Prof. Phillips and Mr. Pickett.

Prerequisite: Agricultural Chemistry 1–a or its equivalent. Required of Sophomores in Agriculture. Lec., 3 hrs.; lab., 5 hrs.; prep., 4 hrs.; 12 units.

4–a. Physiological Chemistry. An advanced study of the chemistry of the fats, carbohydrates and proteins, and some of the general applications of chemistry to biology, such as colloids and enzyme action. Prof. Shimer.

Prerequisite: Agricultural Chemistry 2–b or 24–b or equivalent preparation in organic chemistry and quantitative analysis. Required of students in Animal Husbandry, Dairy Husbandry, and Agricultural Chemistry, and of Pre-medical students. Elective for others. Lec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

5–b. Physiological Chemistry. The chemistry of animal physiology, including foods, digestion, metabolism and excretion. Prof. Shimer.

Prerequisite: Agricultural Chemistry 4–a. Required of students in Animal Husbandry, Dairy Husbandry and Agricultural Chemistry, and of Pre-medical students. Elective for others. Lec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

6-b. Plant Chemistry. A study of the chemistry of plant growth and development, and methods for the analysis of plant materials. Prof. Phillips.

Prerequisite: Agricultural Chemistry 4–a. Required of students in Agricultural Chemistry. Elective for others. Given only in alternate years beginning with 1930–31. Lec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

7–a, 8–b, 9–c. Agricultural Analysis. A study of the methods of analysis of fertilizers, feeding-stuffs and other products important in Agriculture. Prof. Phillips and Prof. Shimer.

Prerequisites: At least 15 units in Quantitative Analysis and 20 units in Organic Chemistry. Required of students in Agricultural Chemistry. Elective for Chemistry students and for others having the prerequisites. Lab., 8 hrs.; prep., 2 hrs.; 10 units.

19–c. Dairy Chemistry. A study of the chemistry and methods of analysis of milk and other dairy products. Prof. Shimer.

Prerequisite: Agricultural Chemistry 2–b or equivalent preparation in organic chemistry and quantitative analysis. Required of Dairy Husbandry students. Elective for others. Given only in alternate years beginning with 1930–31. Lec., 1 hr.; lab., 5 hrs.; prep., 2 hrs.; 8 units.

21–c. Physiological Chemistry. The qualitative and quantitative examination of blood and urine. Prof. Shimer.

Prerequisite: Agricultural Chemistry 5–b. Required of students in Agricultural Chemistry and of Pre-medical students. Elective for others. Lec., 2 hrs.; lab., 5 hrs. prep., 3 hrs.; 10 units.

23–a. Household Chemistry. An introductory course in organic chemistry and its application to household affairs. The laboratory includes some methods of quantitative analysis. Prof. Shimer and Mr. Pickett.

Prerequisite: Chemistry 15–c. Required of Sophomores in Home Economics. Lec., 3 hrs.; lab., 5 hrs.; prep., 4 hrs.; 12 units.

24–b. Physiological and Food Chemistry. The chemistry of human physiology including enzyme action, digestion, absorption and metabolism, and of food materials. Prof. Shimer and Mr. Pickett. (Formerly 23-b).

Prerequisite: Agricultural Chemistry 23–a or its equivalent. Required of Sophomores in Home Economics. Lec., 3 hrs.; lab., 5 hrs.; prep., 4 hrs.; 12 units.

For subjects primarily for graduate students, see Catalog of the Graduate School.

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. Lectures on the several agricultural courses by the various heads of departments. Prof. Taylor.

Required of Freshmen in Agriculture. Lec., 1 hr.; prep., 1 hr.; 2 units.

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.

Lec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units. Subject to be given under the direction of J. C. Kendall, Director of Extension Work. Elective for Seniors in Agriculture and required of Seniors in Home Economics Extension Course.

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. Kendall.

Prerequisite: Agriculture 2–b. Required of Seniors in Home Economics Extension Course. Field work, 50 units.

AGRICULTURAL ECONOMICS

M. Gale Eastman, *Professor*

1–a. Coöperative Marketing. The essential characteristics of cooperative development in this country, something of its present importance, and the principles underlying sound organization. Laws relating to corporations and coöperatives, problems in finance, and membership and business policies reviewed.

Elective for Juniors and Seniors. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

2–a. Farm Management. Deals with the development of farming as a business; types of farming, size of farms, cropping systems, livestock problems, buying, selling, etc. Practical problems in working out factors of efficiency, balance, etc.

Required of Seniors in Agriculture, except in Forestry. Lec., 2 hrs.; lab., 2 hrs.; prep., 7 hrs.; 11 units.

3–b. Rural Economics. History and economy in the development of rural living, including an inquiry into the present utilization of agricultural resources.

Required of Juniors or Seniors in Agriculture. Lec., 3 hrs.; prep., 6 hrs.; 9 units.

4–b. Farm Accounting. Lectures, reference work and farm problems relating to the principles of accounting as applied to farm records and farm cost accounts. Laboratory exercises include sets of complete cost accounts taken from actual farms.

Required of Juniors in certain courses. Lec., 1 hr.; lab., 2 hrs.; prep., 5 hrs.; 8 units.

5–a. Agricultural Statistics. An elementary subject designed to acquaint the agricultural student with some everyday problems of chance in biological phenomena and to give him some immunity against snap-judgments, and some basis for the interpretation of current research information

Elective for Seniors in Agriculture. Lec., 1 hr.; lab., 2 hrs.; prep., 5 hrs.; 8 units.

6–a, 7–b. Agricultural Economics Seminar. Weekly discussions of current and fundamental economic problems, providing 1½ to 5 units of credit and adjusted more or less to the needs and desires of the group electing.

Elective for Seniors in Agriculture and other students by permission.

8–a, 9–b. Special Agricultural Economics. Graduate, or other advanced credit, to satisfy a student's needs may be obtained in this subject in special cases by permission of the head of the department.

Hours of meeting and units of credit to be arranged.

AGRONOMY

FREDERICK W. TAYLOR, *Professor*
LEROY J. HIGGINS, *Instructor*

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. Prof. Taylor.

Required of Sophomores in Agriculture. Lec., 3 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 9 units.

2–a. Forage Crops. Text-books, lectures, and recitations covering the history, use, value, and methods of producing forage crops, includ-

ing grasses, legumes, and roots. Practical work in judging and identifying in the field and in the laboratory. Mr. Higgins.

Required of Juniors in certain courses. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

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. Mr. Higgins.

Required of Juniors in certain courses. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

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. Higgins.

Required of Sophomores in Agriculture. Lec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

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 selecting of fertilizers. Prof. Taylor.

Prerequisite: Agricultural Chemistry 1–a. Required of Seniors in certain courses. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

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. Prof. Taylor.

Prerequisites: Agronomy 1–a to 4–c inclusive. Elective for Seniors. Number of units to be arranged.

13–b. Farm Shop. Repairing farm implements and tools such as wagons, sleds, hammers, forks, shovels, etc.; repair and oiling of harnesses; splicing of hay ropes; reeving a set of block and tackle; setting horse shoes; operating, adjusting and repairing various farm implements. Mr. Ham.

Required of Teach. Train. Seniors. Rec., 1 hr.; prep., 1 hr.; lab., 5 hrs.; 7 units.

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. Prof. Taylor.

Elective for Seniors in Agriculture. Rec., 1 hr.; prep., 2 hrs.; 3 units.

15–a. Soil Management. A study of the applications of the facts and principles of chemistry, botany, and physics which are of use in planning constructive systems of soil management and in increasing the productive capacities of soils. Mr. Higgins.

Elective for Juniors and Seniors. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

16–b. Advanced Field Crops. Detailed consideration will be given to the history and production of the principal field crops of the state like hay, potatoes, silage corn, the clovers, oats, and pasture grasses. Mr. Higgins.

Elective for Juniors and Seniors. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

17–b. Seed Testing. A study of the official method of analyzing agricultural seeds for purity and germination, involving studies in the identification of seeds, as well as the technique of using equipment in weighing, germinating, counting, estimating, etc., for official reports. Mr. Higgins.

Prerequisite: Botany 3–c. Elective for a very limited number of students. Hours arranged. Lab., 4 hrs.; prep., 2 hrs. 6 units.

ANIMAL HUSBANDRY

CARL L. MARTIN, *Assistant Professor*
D. E. RUSK, *Assistant*

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. Rusk.

Required of Freshmen in Agriculture. Lec., 3 hrs.; lab., 2 hrs.; prep., 4 hrs.; 9 units.

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.

Prerequisite: Animal Husbandry 1-a. Required of Sophomores electing Animal Husbandry. Lab., 5 hrs.; 5 units.

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.

Required of Seniors in Animal Husbandry, General and Teacher Training courses. Lec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

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. Prof. Martin.

Required of Juniors in Animal Husbandry. Lec., 3 hrs.; prep., 4½ hrs.; 7½ units.

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

Prerequisite: Animal Husbandry 4–a. Required of Juniors in Animal Husbandry. Lec., 3 hrs.; prep., 4½ hrs.; 7½ units.

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. Prof. Martin.

Prerequisite: Animal Husbandry 4–a. Required of Juniors in Animal Husbandry. Lec., 3 hrs.; prep., 4½ hrs.; 7½ units.

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

Required of Seniors in Animal Husbandry. Lec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

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 meat will be discussed. Occcasional trips will be taken to slaughter houses and packing plants.

Prerequisite: Animal Husbandry 1–a. Required of Seniors in Animal Husbandry. Lec., 3 hrs.; prep., 4½ hrs.; 7½ units.

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.

Prerequisites: Animal Husbandry 1–a and 3–a. Required of Juniors in Animal Husbandry. Lec., 3 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 8½ units.

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.

Prerequisites: Animal Husbandry 1–a and 3–a. Required of Seniors in Animal Husbandry. Lec., 3 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 8½ units.

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

Prerequisites: Animal Husbandry 3–a, 5–b, 6–c, and 7–a. Required of Seniors in Animal Husbandry. Lec., 1 hr.; lab., 2½ hrs.; prep., 2 hrs.; 5½ units.

ARCHITECTURE

ERIC T. HUDDLESTON, *Professor*
CHESTER E. DODGE, *Assistant Professor*
PAUL H. SHRAMM, *Instructor*
ARNOLD PERRETON, *Instructor*

Major: 150 time units of departmental and related departmental subjects, exclusive of elementary subjects and those listed as prerequisites.

Prerequisites: Major in Architecture, Art 7–a, 8–b, 9–c, Arch. 6–b, 7–c, 2–b, 3–c, 11–b, 12–c, Hist. 113–a, 128–b, 129–c.

ARCHITECTURE

2–b, 3–c. Elements of Design. An introductory lecture course to the field of architectural design, discussing the influence of materials, architectural elements, their function and form, walls, moldings, openings, columns, roofs, plans, and ornament, followed by an analysis of the principles governing architectural design. Mr. Perreton.

Required of Freshmen in Architecture. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

4–a, 5–b, 6–c. History of Architecture. Lectures with assigned reading on the historical development of the different periods of architecture and an analysis of the chief contributions each period made toward a constructive and artistic advance in architectural design. Mr. Perreton.

Required of Sophomores in Architecture. Rec., 1 hr. prep., 1½ hrs.; 2½ units.

8–b, 9–c. Graphics. Exercises in constructive and descriptive geometry with applications to developments and intersections, shades and shadows, and perspective. Prof. Dodge.

Prerequisite: M. E. 5–a. Required of Freshmen in Architecture. Draw., 5 hrs.; 5 units. (Formerly 6–b, 7–c.)

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. Prof. Dodge and Mr. Perreton.

Required of Freshmen in Architecture. Draw., 5 hrs.; 5 units.

20–a, 21–b. 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 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. Problems are issued to the student for graphical solution such as would be presented to an architect by a prospective home builder. Prof. Huddleston.

Required of Sophomores in Home Economics. 20–a: Lec., 1 hr.; prep., 1 hr.; draw., 2 hrs.; 4 units. 21–b: draw., 4 hrs.; 4 units.

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 specific requirements. Prof. Huddleston.

Prerequisite: Arch. 21–b. Elective by permission only. Hours and units to be arranged.

23–a. Domestic Architecture. Problems in house planning are issued to the student for graphical solution such as would be presented to an architect by a prospective home builder, followed with 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. Prof. Huddleston.

Required of Seniors in Architecture. Rec., 2 hrs.; prep., 1 hr.; draw., 6 hrs.; 9 units.

30–a, 31–b, 32–c. Materials of Construction. Their properties and uses. Considerations affecting their choice for various parts of the structure. General types of structures classified according to use and materials used. Structural units. (Retaining walls, Footings, Piers, Columns, Beams, Girders, Trusses, etc.) Their place in the structure. Prof. Dodge.

Required of Juniors in Architecture. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

33–a, 34–b, 35–c. Building Construction. Problems in the determination of loads and stresses and principles of stability in buildings. Study of the fundamental principles involved in the different types of building construction and some idea of the typical proportions imposed by the use of different kinds of materials. Theory and practice in structural design, including the making of complete framing drawings of a building. This work is made a part of the student's thesis and must be carried in parallel with Arch. 60–a, 61–b, 62–c. Prof. Dodge.

Prerequisite: Arch. 32–c. Required of Seniors in Architecture. Lec., 3 hrs.; prep., 1½ hrs.; draw., 3 hrs.; 7½ units.

39–a. 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. Prof. Dodge.

Required of Seniors in Architecture. Rec., 1 hr.; prep., 1½ hrs.; 2½ units.

41–b. 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. Prof. Huddleston.

Required of Seniors in Architecture. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

50–a, 51–b, 52–c. Architectural Design. Class "B," Analytiques, programs of the Beaux Arts Institute of Design will be used as the basis for a progressive series of problems in architectural planning and design. Mr. Perreton.

Prerequisite: Arch. 12–c and Art 22–c. Required of Sophomores in Architecture. First term: draw., 14 hrs.; 14 units. Second and third terms: draw., 16 hrs.; 16 units.

53–a, 54–b, 55–c. Architectural Design. A continuation of 52–c with Class "B" Project problems in architectural design, composition and planning. Mr. Perreton.

Prerequisite: Arch 52–c. Required of Juniors in Architecture. Draw., 16 hrs.; 16 units.

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

Prerequisite: Arch. 55–c. Elective by permission only. Units to be arranged.

60–a, 61–b, 62–c. Architectural Thesis. The design of a building to conform to specified requirements such as would obtain in actual practice, followed by complete working drawings and details, including framing, heating, plumbing, and electric plans. This work will be made

to conform to current practice in an architect's office. Profs. Huddleston, Dodge and Mr. Perreton.

Prerequisite: Arch. 52–c. Required of Seniors in Architecture. First term: draw., 10 hrs.; 10 units. Second and third terms: draw., 16 hrs.; 16 units.

ART

Schedule the following subjects as Art 7–a, 8–b, etc.

7–a. Design. Studio work designed to bring out the latent talents of the individual for graphical expression. Original ideas will be guided through the processes of development by criticisms and suggestions only, the student being given perfect freedom for self expression. Mr. Shramm.

Elective. Draw., 4 hrs.; 4 units.

8–b, 9–c. Design. Studio exercises in pencil, pen and ink, and brush of lines, space arrangements, proportion of line and form, symmetry and balance, supplemented with illustrated lectures presenting a general historical background in the various branches of art expression. Mr. Shramm.

Required of Freshmen in Architecture. Lec., 1 hr.; prep., 1½ hrs.; draw., 4 hrs.; 6½ units.

10–a, 11–b, 12–c. Free-hand Drawing. Studio exercises in charcoal from architectural details and plaster casts of historic ornament and the human form. Mr. Shramm.

Prerequisite: Art 9–c. Required of Sophomores in Architecture. Draw., 5 hrs.; 5 units.

13–a. Color and Sketching. Weather permitting, sketching from nature with special emphasis on tree and shrubbery forms. Studio exercises in color theories, harmonies and qualities as a basis for color studies adapted to architectural rendering. Mr. Shramm.

Prerequisite: Art 12–c. Required of Juniors in Architecture. Draw., 4 hrs.; 4 units.

14–b. Modeling. Studio exercises in clay modeling from casts of historic ornament and the human form as a training in the perception of form in the round. Mr. Shramm.

Prerequisite: Art 13–a. Required of Juniors in Architecture. Lab., 4 hrs.; 4 units.

15–c. Life Drawing and Composition. Studio exercises in charcoal and color from the living model and studies in composition. Mr. Shramm.

Prerequisite: Art 14–b. Required of Juniors in Architecture. Draw., 4 hrs.; 4 units.

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.

Special permission must be obtained from the head of the department before registering in this subject. Hours and units to be arranged.

BOTANY

ORMOND R. BUTLER, *Professor*
MARIAN E. MILLS, *Assistant Professor*
STUART DUNN, *Instructor*

Major: 150 time units in Botany and cognate courses exclusive of elementary subjects. Chemistry 1–a, 2–b and 3–c must be taken and will be counted as part of the major requirement.

1–a. General Botany. An introductory study of flowering plants with special emphasis on the structure and functions of organs. Prof. Mills.

Required of Freshmen in Agriculture. Lec., 2 hrs.; lab., 4 hrs.; prep., 2 hrs.; 8 units.

2–b. General Botany. A continuation of 1–a. The study of selected types of algae, fungi, emphasizing growth habits, reproduction, evolutionary development and economic importance. Prof. Mills.

Prerequisite: Botany 1–a. Required of Freshmen in Agriculture. Lec., 2 hrs.; lab., 4 hrs.; prep., 2 hrs.; 8 units.

3–c. General Botany. A continuation of 2–b. The study of the life histories of mosses, ferns and gymnosperms; the geographic distribution of economic plants of North America. Evolution and heredity. Prof. Mills.

Prerequisite: Botany 2–b. Required of Freshmen in Agriculture. Lec., 2 hrs.; lab., 4 hrs.; prep., 2 hrs.; 8 units.

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

Prerequisite: Botany 3–c. One year of Chemistry. Required of Juniors in Forestry and Seniors in Horticulture. Lec., 1 hr.; lab., 5 hrs.; prep., 2 hrs.; 8 units.

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

Prerequisite: Botany 3–c. Lab., 6 hrs.; prep., 2 hrs.; 8 units.

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 and cultivation. Prof. Mills.

Prerequisite: One year of Chemistry. Required of all Home Economics Juniors. Lec., 2 hrs.; lab., 4 hrs.; prep., 2 hrs.; 8 units.

8.5–b. Applied Microbiology. Standard methods of examination of milk, water, and sewage; the relation of microörganisms to the spoilage of food and food poisoning; organisms pathogenic to man and means of control. Prof. Mills.

Prerequisite: Bacteriology 8–a. Required of all Home Economics Juniors. Lec., 2 hrs.; lab., 4 hrs.; prep., 2 hrs.; 8 units.

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 the soil, the dairy industry, diseases of plants and animals, and the maintenance of pure water supplies. Prof. Mills.

Required of all Agricultural Sophomores. Lec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units.

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

Prerequisite: Botany 3–c. Required of Juniors in Horticulture and Seniors in Forestry and Teacher Training. Lec., 1 hr.; lab., 5 hrs.; prep., 2 hrs.; 8 units.

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

Prerequisite: Botany 12–a. Required of Juniors in Horticulture and Seniors in Forestry. Lec., 1 hr.; lab., 5 hrs.; prep., 2 hrs.; 8 units.

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. Prof. Butler, Prof. Mills and Mr. Dunn.

Units to be arranged.

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

Prerequisite: Botany 12–a. Required of Teacher Training Seniors. Lec., 1 hr.; prep., 2 hrs.; 3 units.

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. Prof. Mills.

Field trips; laboratory work; occasional lectures. Field trips and lab., 4 hrs.; prep., 2 hrs.; 6 units.

CHEMISTRY

HAROLD A. IDDLES, *Professor*
MELVIN M. SMITH, *Assistant Professor*
HEMAN C. FOGG, *Assistant Professor*
LAWRENCE H. OPDYCKE, *Assistant Professor*
RICHARD H. KIMBALL, *Instructor*
ALBERT F. DAGGETT, *Instructor*
SHERWOOD P. SMEDLEY, *Instructor*
HAROLD E. ABBOTT, *Assistant*
WILFRED B. KRABEK, *Assistant*

Major: 150 time units in Chemistry and cognate courses exclusive of elementary subjects.

1–a. Inorganic Chemistry. Lectures and recitations on general and theoretical chemistry. Solution of chemical problems will be required. Prof. Iddles and Prof. Smith.

Required of all Freshmen in the College of Technology and Liberal Arts majors in Chemistry. Lec. and rec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

2–b, 3–c. Inorganic Chemistry. A continuation of Chemistry 1–a. Prof. Iddles and Prof. Smith.

Required of Freshmen in Chemistry courses. Lec. and rec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

5–b, 6–c. Inorganic Chemistry. Lectures and recitations on general and theoretical chemistry. Prof. Smith and Mr. Daggett.

Required of Freshmen in Mechanical, Electrical, Civil and Industrial Engineering. Rec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

7–a, 8–b, 9–c. Inorganic Chemistry. Lectures and recitations on general chemistry and its application to everyday life. Prof. Smith, Prof. Opdycke and Mr. Smedley.

Elective for Liberal Arts students. Rec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

10–a, 11–b, 12–c. Inorganic Chemistry. Lectures and recitations in chemistry as applied to agriculture. Prof. Smith and Mr. Smedley.

Required of Freshmen in Agriculture. Rec., 3 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 8½ units.

14–b, 15–c. Inorganic Chemistry. Lectures and recitations on general chemistry with special reference to Home Economics problems. Prof. Smith.

Required of Freshmen in Home Economics. Rec., 3 hrs.; lab., 5 hrs.; prep., 4 hrs.; 12 units.

22–c. Qualitative Analysis. Laboratory work, with occasional lectures and recitations. The work includes the detection of the more familiar acids and bases in both simple and complex mixtures. Mr. Daggett.

Parallel: Chemistry 3–c. Required of Freshmen in Chemistry. Lec., 1 hr.; Lab., 10 hrs.; 11 units.

23–a. Qualitative Analysis. A continuation of 22–c. Mr. Daggett.

Required of Sophomores in Chemistry. Lab., 5 hrs.; 5 units.

25–a, 26–b, 27–c. Introductory Qualitative and Quantitative Analysis. Laboratory practice, with occasional lectures and recitations. The course is especially adapted to the needs of Liberal Arts and Pre-medical students. It should be taken only as a sequence. Mr. Daggett.

Prerequisite: Chemistry 9–c. Lab., 7½ hrs.; 7½ units.

28–b, 29–c. Quantitative Analysis. A preliminary study of quantitative analysis to familiarize the student with the general methods of chemical manipulation and analysis. Prof. Fogg.

Prerequisite: Chemistry 23–a. Required of Sophomores in Chemistry. Elective for Sophomores, Juniors and Seniors in Liberal Arts provided laboratory facilities permit. Lab., 7½ hrs.; prep., 1 hr.; 8½ units.

30–a, 31–b, 32–c. Quantitative Analysis. A continuation of Quantitative Analysis. Prof. Fogg.

Prerequisite: Chemistry 29–c. Required of Juniors in Chemistry. Elective for Liberal Arts students. Lab., 10 hrs.; prep., 2 hrs.; 12 units.

40–a, 41–b, 42–c. Organic Chemistry. The lectures deal with the principal classes of organic compounds, aliphatic and aromatic, with emphasis upon class reactions and structural theory. Prof. Iddles.

Prerequisite: Chemistry 3–c. Required of Sophomores in Chemistry and Junior Chemists, and Junior Agricultural Chemists. Lec., 3 hrs.; prep., 4½ hrs.; 7½ units.

43–a, 44–b, 45–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. Kimball.

Parallel: Chemistry 40–a. Required of Sophomores in Chemistry and Senior Agricultural Chemists. Lab., 5 hrs.; 5 units.

46–a, 47–b, 48–c. Organic Chemistry. Lectures and recitations. An introductory course in the study of the chemistry of carbon compounds considered with the needs of a pre-medical student in mind. Mr. Kimball.

Prerequisite: One year Freshman Chemistry. Elective for Liberal Arts students. Required of Junior Pre-medicals. Rec., 3 hrs.; prep., 6 hrs.; 9 units.

49–a, 50–b, 51–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. This is a companion course to 46–a, 47–b, 48–c, and must be taken parallel with these courses. Mr. Kimball.

Elective for Liberal Arts students. Required of Junior Pre-medicals. Rec., 1 hr.; lab., 5 hrs.; 6 units.

152–a, 153–b, 154–c. Advanced Organic Chemistry. A consideration of the more advanced theories of organic chemistry, either leading to further work in the subject, or in connection with other branches of chemistry or with medicine. Mr. Kimball.

Prerequisite: Chemistry 42–c or 48–c. Required of Juniors in Chemistry who intend to take their thesis in Organic Chemistry. Elective for Technology, Liberal Arts or Agricultural students. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units. (Formerly 52–a, 53–b, 54–c.)

66–a, 67–b, 68–c. Elementary Physical Chemistry. A course devoted to those parts of physical and theoretical chemistry which have found important applications in physiology, bacteriology and other branches of biological science. Prof. Opdycke.

Prerequisite: One year Freshman Chemistry. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units. This is a course designed particularly for the pre-medical student.

160–a, 161–b, 162–c. Physical Chemistry. A study of chemical theory, covering vapor density, molecular weights, specific heat, diffusion of gases, solutions, ionization, catalysis, celloids, thermo-chemistry, equilibrium, the phase rule, etc. Prof. Opdycke.

Prerequisite: Chemistry 29–c, Math. 8–b, Physics 8–c. Required of Juniors in Chemistry and Senior Agricultural Chemists. Elective for Liberal Arts students. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units. (Formerly 60–a, 61–b, 62–c.)

163–a, 164–b, 165–c. Physical Chemistry Laboratory. Prof. Opdycke.

Parallel: Chemistry 160–a. Required of Juniors in Chemistry and Senior Agricultural Chemists. Lab., 5 hrs.; prep., 2 hrs.; 7 units. (Formerly 63–a, 64–b, 65–c.)

100–a, 101–b, 102–c. Advanced Inorganic Chemistry. Prof. Fogg.

Prerequisite: Chemistry 29–c. Required of Juniors in the Technology Course in Chemistry who are intending to take their thesis in Inorganic Chemistry. Elective for others. Rec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units. (Formerly 80–a, 81–b, 82–c.)

110–a, 111–b, 112–c. Industrial Chemistry. Prof. Opdycke.

Prerequisite: Chemistry 3–c. Required of Seniors in Technology Course in Chemistry. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

70–a, 71–b, 72–c. Seminar. A weekly meeting to discuss recent topics of interest in Chemistry. Prof. Iddles and Staff. 2½ units.

(Formerly 130–a, 131–b, 132–c.)

80–a, 81–b, 82–c. 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. Members of the Staff.

For Seniors in Chemistry who have completed Chemistry 32–c and 42–c. Technology Students: Lab., 15 hrs.; prep., 2½ hrs.; 17½ units. Liberal Arts Students: Lab., 10 hrs.; prep., 2 hrs.; 12 units. (Formerly 133–a, 134–b, 135–c.)

For subjects primarily for graduate students, see Catalog of the Graduate School.

CIVIL ENGINEERING

EDMOND W. BOWLER, *Associate Professor*
RUSSELL R. SKELTON, *Instructor*
HAROLD I. LEAVITT, *Instructor*
JAMES S. CHAMBERLIN, *Lecturer*

1–c. Plane Surveying. Theory and use of level and transit. Field work consists of chaining, differential and profile leveling, angle measurement and traversing. Prof. Bowler and Mr. Leavitt.

Prerequisite: Mathematics 2–b. Required of all Freshmen in the College of Technology, except those taking Architecture and Chemical Engineering. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

2–a. Topographical Surveying. Adjustments of levels and transits. Theory and use of levels, transits, plane tables, stadia, precise base line methods and topographical surveys. A topographical map of a selected area is completed from survey notes obtained in field work. Prof. Bowler and Mr. Leavitt.

Prerequisites: Civil Engineering 1–c and Mechanical Engineering 3–c. Required of Sophomores in Civil Engineering. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

3–b. Topographical Drawing. Exercises in lettering, conventional signs, and map making, including the preparation of a topographical map from survey notes obtained in Civil Engineering 2–a. Mr. Skelton.

Prerequisite: Civil Engineering 2–a. Required of Sophomores in Civil Engineering. Lab., 5 hrs.; 5 units.

4–c. Railway Curves. Problems of curves used in railway and highway location. Theory and methods of layout of simple and compound curves and spirals are studied. Mr. Skelton.

Prerequisite: Civil Engineering 2–a. Required of Sophomores in Civil Engineering. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

5–a. Surveying. Use of level and transit as they apply to differential and profile leveling, topographic mapping of restricted areas as sites for buildings, in staking out and supervising work under construction. Prof. Dodge.

Prerequisite: Mathematics 3–c. Required of Junior Architectural students. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

6–c, 7–a. Surveying. This subject is comparable to Civil Engineering 1–c and 2–a with the direct application to the problems found in Forestry and Agriculture. Prof. Bowler and Mr. Leavitt.

Prerequisite: Mathematics 22–c. Required of Sophomores and Juniors in Forestry. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

8–b. Engineering Astronomy. A study of the underlying theories used in the reduction of astronomical observations for latitude, longitude, time and azimuth. Prof. Bowler.

Prerequisite: Civil Engineering 2–a. Required of Sophomores in Civil Engineering. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

20–c, 21–a. Highway Location. Preliminary and final location of about one mile of highway line. This includes making paper location, taking cross-sections, setting slope stakes, figuring quantities, etc Astronomical observations are made for determining of latitude and azimuth. Mr. Skelton.

Prerequisite: Civil Engineering 3–b and Civil Engineering 4–c either in parallel or as a prerequisite. Required of Sophomores in Civil Engineering. 20–c: Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units. 21–a: Lab., 5 hrs.; 5 units.

22–a. Materials. Designed to acquaint the student with properties of the various structural materials used by the engineer, such as, stone, brick, cement, concrete, wood, steel and paints. Mr. Skelton.

Prerequisites: Civil Engineering 20–c. Required of Juniors in Civil Engineering. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

23–a, 24–b, 25–c. Economics of Highway Design. A study of location, design, construction and maintenance of highways and methods of financing and laws under which they are built and controlled in various states of the Union. Mr. Skelton.

Prerequisites: Civil Engineering 20–c and 21–b. Required of Seniors in Civil Engineering. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

26–a, 27–b, 28–c. Economics of Railway Engineering and Transportation. A general course in railway construction and maintenance, and a study of the principles of motor truck transportation as it affects railway transportation. Mr. Skelton.

Prerequisites: Civil Engineering 23–a, either in parallel or as a prerequisite. Required of Seniors in Civil Engineering. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

41–b, 42–c. Hydraulics. Static pressures of liquids. Theory, coefficients and use of orifices and weirs for measurement of flow of water. Derivation and application of formulas and friction factors in the flow through pipes and open channels. Theory and use of hydraulic machinery are given in the spring term. Prof. Bowler.

Prerequisite: Mechanical Engineering 43–a. Required of Juniors in Civil Engineering. Rec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

43–b, 44–c. Hydraulics. A study of the theory of fluid pressure and water in motion and the friction factors and the coefficients which apply to the use of water in the fields of Mechanical and Electrical Engineering. Prof. Getchell.

Prerequisite: Mechanical Engineering 43–a. Required of Seniors in Mechanical, Electrical and Industrial Engineering. 43–b: Rec., 3 hrs.; prep., 4½ hrs.; 7½ units. 44–c: Rec., 2 hrs.; prep., 3 hrs.; 5 units.

45–a. Water Supply. Municipal supplies, including quantities required, sources, storage, distribution, equipment and accessory structures. Prof. Bowler.

Prerequisite: Civil Engineering 42–c. Required of Seniors in Civil Engineering. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

46–b. Water Purification. A study of slow sand and mechanical methods of water purification. Prof. Bowler.

Prerequisite: Civil Engineering 45–a. Required of Seniors in Civil Engineering. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

47–b. Sewerage. The theory and problems in design of municipal sewerage. Prof. Bowler.

Prerequisite: Civil Engineering 42–c. Required of Seniors in Civil Engineering. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

48–c. Sewage Disposal. A study of the laws governing the disposal of sewage and the various methods of sewage treatment. Prof. Bowler.

Prerequisite: Civil Engineering 47–b. Required of Seniors in Civil Engineering. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

49–a, 50–b, 51–c. Hydraulic Engineering. The study of run-off and drainage areas, stream regulation, the economic use of water for power purposes and the characteristics of hydraulic motors and power plants. Prof. Bowler.

Prerequisite: Civil Engineering 42–c. Required of Seniors in Civil Engineering. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

60–a, 61–b, 62–c. Stresses. The graphical and analytical methods for determining reactions, moments and shears in frame structures under static and dynamic loads and the stresses in individual members. Prof. Bowler.

Prerequisite: Mathematics 8–b. Required of Juniors in Civil Engineering. Rec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

63–a. Bridge Design. Theory and problems in design of steel and reinforced concrete highway and railway bridges. Mr. Skelton.

Prerequisite: Civil Engineering 62–c. Required of Seniors in Civil Engineering. Rec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

64–b. Concrete Structures. Theory and problems in design of plain and reinforced concrete structures, including retaining walls arches and frames of buildings. Mr. Skelton.

Prerequisite: Civil Engineering 64–b. Required of Seniors in Civil Engineering. Rec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

65–c. Building Design. Theory and problems in design of steel trusses and frames of buildings. Mr. Skelton.

Prerequisite: Civil Engineering 63–a. Required of Seniors in Civil Engineering. Rec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

80–a, 81–b, 82–c, 83–a, 84–b, 85–c. Student Chapter of the American Society of Civil Engineers. An organization of Junior and Senior students in Civil Engineering. The subject consists of preparation and presentation of addresses on Civil Engineering topics by members, and in which the instructor present criticizes the work from the point-of-view of delivery, subject matter and terms used. Prof. Bowler.

Required of Juniors and Seniors in Civil Engineering. Rec., 1 hr.; prep., ½ hr.; 1½ units.

86–c. Specifications. Principles of specification writing. Prof. Case.

Rec., 1 hr.; prep., 1½ hrs.; 2½ units.

87–a, 88–b, 89–c. Seminar. Discussion of the broader aspects of the engineer's interest in public affairs. Mr. Chamberlin.

One meeting a week.

90–a, 91–b, 92–c. Thesis. The thesis embodies research or commercial investigation in which equal emphasis is placed upon the composition and accuracy of subject matter. Prof. Bowler and Mr. Skelton.

Required of Seniors in Civil Engineering. Rec., 1 hr.; prep., 4 hrs.; 5 units.

93–s, 94–s. Coöperative Work. A practical application of the studies taken at the University, during the summer recess while employed on work of a civil engineering character. The students while thus employed will be under the general supervision of a member of the University faculty. The assignments following the Sophomore year will be on surveying parties and during the summer following the

Junior year on construction work. Reports on work done are submitted early in the school term following the period of this employment.

Required of Sophomores and Juniors in Civil Engineering.

DAIRY HUSBANDRY

JOHN M. FULLER, *Professor*
HERBERT C. MOORE, *Instructor*
BERT E. HUGGINS, *Instructor*

1–b. Milk and Its Products. A general study of the subjects indicated. Such topics as the composition of milk, common dairy processes, market milk, and brief studies in the manufacture of dairy products are included. Prof. Fuller.

Required of Sophomores in Agriculture. Lec., 3 hrs.; lab., 2 hrs.; prep., 5 hrs.; 10 units. Elective as a lecture course for other students. Lec., 3 hrs.; prep., 4½ hrs.; 7½ units.

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

All students interested in the dairy cattle judging team should elect this subject. Required of students in Dairy Husbandry. Lec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

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. Prof. Fuller.

Required of Seniors in Dairy Husbandry. 3–a, Lec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units. 3.5–b, Lec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

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. Moore.

Prerequisite: Dairy Husbandry 1–b. Required of Juniors in Dairy Husbandry. Lec., 1 hr.; lab., 4 hrs.; prep., 2½ hrs.; 7½ units.

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

Prerequisite: Dairy Husbandry 1–b. Required of Seniors in Dairy Husbandry. Lec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

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. Moore.

Prerequisite: Dairy Husbandry 1–b or 8–a. Required of Seniors in Dairy Husbandry. Lec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

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. Moore.

Prerequisite: Dairy Husbandry 1–b. Required of Juniors in Dairy Husbandry. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

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. Moore.

Elective for Juniors and Seniors in Home Economics and in Liberal Arts courses. Lec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

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, aëration, and straining; and the application of bacteriological principles to the dairy industry. Mr. Moore.

Prerequisite: Botany 11–c. Required of Juniors in Dairy Husbandry. Lec., 3 hrs.; lab., 4 hrs.; prep., 3 hrs.; 10 units.

10–c. Dairy Seminar. Studies of experiment station and other literature covering the field of dairy husbandry. Prof. Fuller.

Required of Seniors in Dairy Husbandry. Elective for other students. Lec., 2 hrs.; prep., 3 hrs.; 5 units.

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. Moore.

Elective for all students. Lab., 2½ hrs.; 2½ units.

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

Prerequisite: Dairy Husbandry 2–c. Elective for Agricultural students. Lec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

13–c. Advanced Dairy Science. Basic data, fundamental observations, and discussions of research contributing to the present status of the dairy industry. Mr. Moore.

Required of Seniors in Dairy Husbandry. Elective for other students who have adequate preparation in chemistry and bacteriology. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

ECONOMICS AND ACCOUNTING

HARRY W. SMITH, *Professor*
ARTHUR W. JOHNSON, *Associate Professor*
NORMAN ALEXANDER, *Associate Professor*
HANNIBAL G. DUNCAN, *Associate Professor*
JOHN D. HAUSLEIN, *Assistant Professor*
CLAIR W. SWONGER, *Instructor*
CARROLL M. DEGLER, *Instructor*

Major: 150 time units of departmental and related departmental subjects, exclusive of those of an elementary nature.
Students preparing to major in Economics should present in addition to the regular major requirements the credits of Mathematics 101–a, 102–b, 103–c, History 29–a, 30–b, 31–c, Political Science 104–a, 105–b, 106–c.

Students registering in the Business Fundamentals Course after September 1, 1929, must obtain a grade of 75 in at least 100 time units from the following list of required subjects: Accounting 112–a, 113–b, 114–c, Accounting 115–a, 116–b, 117–c, Economics 1–a, 2–b, 3–c, Economics 7–b, 8–c, Economics 10–a, Economics 13–a, 14–b, Economics 23–b, Economics 71–a, 72–b, 73–c, Statistics 1–a, 2–b, Mathematics 104–c.

ECONOMICS

Introductory Subjects. Group A

1–a, 2–b, 3–c. Principles of Economics. This is a beginner's course and is planned for students who wish a general introduction to the field of Economics. Mr. Swonger, Mr. Degler.

Required of all students majoring in Economics and of Business Fundamentals students. Elective for other Sophomores, Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

Service Subjects. Group B

101–a, 102–b. Elementary Economics. This course is open only to Agricultural and Technology students. Mr. Degler.

Lec. or rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

104–a. Economic History of the Working Classes. This course will trace the development of the laboring class from early times to the present, with emphasis upon recent labor conditions. Prof. Smith.

For Juniors and Seniors in the College of Technology only. Lec. or rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

105–b. Business Organization and Finance. This course will trace the evolution of the business unit from the individual entrepreneur to the modern business combination. It will deal with the financial and legal problems of each type, together with the legislative and government policies toward big business as revealed in trust legislation and court decisions. Mr. Swonger.

For Juniors and Seniors in the College of Technology only. Lec. or rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

106–c. Law of Contracts.

For Juniors and Seniors in the College of Technology only. Lec. or rec., 2 hrs.; prep., 3 hrs.; 5 units. Prof. Alexander.

50–c. Principles of Business. A general survey of the principles underlying modern business. Promotion, forms of organization, control of production, planning, handling of employees, advertising, selling, credit, accounting, business forecasting, etc.

The credits of this subject will not be accepted to satisfy major requirements. Open only to Business Fundamentals Freshmen and students designated by the College of Agriculture. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Formerly given as 50–a.)

Advanced Subjects. Group C

6–a. Economic and Commercial Geography. This subject aims to acquaint the student with the economic aspect of geography and to survey the chief industries of the world and the principal commodities of world trade. (Formerly given as 9–c.) Mr. Swonger.

Required of Business Fundamentals students. Elective for Sophomores. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

7–b, 8–c. Economic and Commercial History. This subject will trace the commercial and economic development of Europe and the United States. Special attention will be paid to this development during the last century. Mr. Degler.

Required of Business Fundamentals students. Elective for Sophomores. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

Prerequisite for the following courses: Completion of one year's work in Principles of Economics except as designated

10–a. Labor Problems. This subject deals with the historical background and present status of labor organizations and problems. Prof. Smith.

Prerequisite: A satisfactory average in 50 units in Economics. Lec. or rec., 4 hrs.; prep., 6 hrs.; 10 units.

11–b. Transportation. This subject gives an account of the development and organization of transportation agencies. (Formerly given as 26–b.) Prof. Smith.

Prerequisite: A satisfactory average in 50 units in Economics. Lec. or rec., 4 hrs.; prep., 6 hrs.; 10 units.

12–c. Public Finance. This subject presents the theory and practice of public expenditures and revenues together with changed tendencies and taxation reform, as well as taxation problems in the State of New Hampshire. (Formerly given as 30–c.) Prof. Smith.

Prerequisite: A satisfactory average in 50 units in Economics. Lec. or rec., 4 hrs.; prep., 6 hrs.; 10 units.

13–a, 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. Mr. Swonger.

Prerequisite: Economics 3–c. Elective for Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

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

Prerequisite: Economics 3–c. Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

22–a. Corporations. This subject deals with the evolution and forms of business organization. Mr. Swonger.

Elective for Juniors and Seniors. Required of Juniors in Business Fundamentals. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

23–b. Corporation Finance. A study of the methods of financing corporate enterprise. (Formerly given as 54–b.) Mr. Swonger.

Prerequisite: 22–a. Elective for Juniors and Seniors. Required of Juniors in Business Fundamentals. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

24–c. Public Regulation of Private Business. This is a study of the public regulation of business organizations and their activities with special emphasis on methods of competition. (Formerly given as 74–a, 75–b, 76–c.) Mr. Swonger.

Prerequisite: 23–b. Elective for Juniors and Seniors. Required of Juniors in Business Fundamentals. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

34–a, 35–b, 36–c. History of Economics. 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, medieval and modern Europe, including the manorial, guild, mercantile, kammeralistic, physiocratic, laissez faire, classical, historical and socialistic systems; and to indicate the important relations of economic philosophy to historical, political and social environment. Prof. Smith.

Prerequisite: Senior standing and a satisfactory average in 50 units in Economics. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

40–a, 41–b, 42–c. Seminar in Current Economic Problems. Prof. Smith.

Elective for Seniors majoring in Economics who have attained a satisfactory average in the department. Rec., 2 hrs.; prep., conf., thesis; 9 units.

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

Rec., 2 hrs.; prep., conf., thesis; 9 units. For graduate students only.

57–c. Salesmanship. A subject designed to analyze the fundamental principles of personal selling. Consideration of the personal qualifications of the successful salesman; motives which prompt purchasing and the various appeals to these motives. The construction of sales arguments, etc.

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

71–a, 72–b, 73–c. Commercial Law. This is a study of the law of contracts, agency, sales and negotiable instruments. Prof. Alexander.

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

205–b, 206–c. Traffic Management. A specialized course in the theory and practice of traffic management. (Not given in 1930–31.)

ACCOUNTING

NOTE: Students who have completed two or more years of bookkeeping in preparatory school will be permitted to register for Intermediate Accounting (115–a, 116–b, 117–c) upon passing an examination covering the material of Elementary Accounting (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. Extensive practice in accounting problems of the single proprietorship and partnership types of business organization. Prof. Hauslein.

Required of Business Fundamentals Sophomores. Elective for other Sophomores, Juniors and Seniors. Lec. or rec., 2 hrs., lab., 4 hrs.; prep., 4 hrs.; 10 units.

115–a, 116–b, 117–c. Intermediate Accounting. This subject is designed to follow 114–c, continuing with the work in partnerships, followed by a comprehensive study of corporation accounting. Extensive practice work in handling problems of corporation accounting. Prof. Johnson.

Required of Business Fundamentals Juniors. Elective for such other students as have completed Accounting 114–c or its equivalent. See note above. Lec. or rec., 2 hrs.; lab., 4 hrs.; prep., 4 hrs.; 10 units.

118–a, 119–b, 120–c. Advanced Accounting. Advanced theory of accounting, extensive practice in solving C. P. A. problems, discussion of the Federal Income Tax Law and practice in computing returns. Prof. Johnson.

Elective for such students as have completed Accounting 117–c or its equivalent. Lec. or rec., 2 hrs.; lab., 4 hrs.; prep., 4 hrs.; 10 units.

121–a, 122–b, 123–c. Cost Accounting. The relation of cost accounting to general accounting. The place of cost accounting in modern business. Study of various cost systems and their applications to particular lines of business. Careful analysis of methods of computing costs. Prof. Johnson.

Elective for such students as have completed Accounting 117–c or its equivalent. Lec. or rec., 2 hrs.; lab., 4 hrs.; prep., 4 hrs.; 10 units.

SPECIAL COURSE IN ACCOUNTING FOR WOMEN STUDENTS

124–a, 125–b. Household and Institutional Accounting. This subject is designed primarily for students of Home Economics. 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. Prof. Johnson.

Elective for Liberal Arts women students. (Not given in 1930–1931.)

131–a, 132–b, 133–c. Elements of Accounts. This course is open only to Agricultural and Technology students. Prof. Hauslein.

Lec. or rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

TYPEWRITING

1–a, 2–b, 3–c. Typewriting. A laboratory course in elementary typing.

Lab., 5 hrs.; 5 units.

EDUCATION

JUSTIN O. WELLMAN, *Professor*
HARLAN M. BISBEE, *Assistant Professor*
NAOMI G. EKDAHL, *Assistant Professor*
JOHN C. HERRING, *Instructor*
*PAUL E. FARNUM, *Instructor in Agricultural Education*

Major: The completion of the curriculum in professional education as described on page 83.

Graduate Work: For subjects primarily for graduate study see Catalog of the Graduate School.

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

An average mark of 75 or more must be obtained in any ten of the following courses: Education 21–a, 22–b, 23–c, 31–a, 32–b, 33–c, 34–a, 35–a, 36–b, 37–c, 38–a, 39–b, 40–c, 44–c.

Professional Education. Students who expect to teach in New Hampshire secondary schools should choose one of the prescribed curricula as outlined on page 83. The New Hampshire State Board of Education will accept the final examination marks in the following courses in lieu of the usual examinations for certificates: Education 39–b, 40–c, 44–c, 31–a, and 32–b or 33–c. The State Board will set and score the final examination in Education 44–c. No credit in any of the above courses will be allowed by the State Board unless all of these courses are taken prior to Sept. 1 of the year of graduation.

College graduates or other students with four years of post-secondary education will be given secondary licenses provided that their courses included twelve semester hours† of college work in Education.

The majority of states require professional training which will include 15 to 24 semester hours (60–100 time units) of Education.

INTRODUCTORY SUBJECTS

11–a–b–c. Effective Methods of Study. The aim of this course is to assist the student in learning how to work at his task of getting his educa-

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

† 50 time units. To convert time units into semester hours, use the ratio .24.

tion in the most effective way. The general method employed in the course is, first, to illustrate and explain the important factors that contribute to the total efficiency of a worker, then to outline a procedure for the attainment of the specific habits that must be formed to achieve the desired results. The topics discussed include: the need for greater efficiency in study and in work, and an analysis of learning; conservation of study—restoration of energy; use of ideals in the direction of energy; the development and use of attention and decision; planning one's work and working one's plan; securing favorable conditions for work; preparing an assignment; methods of memorization; the technique of investigation; how to prepare for an examination and how to answer examination questions. Assigned readings, problems, and exercises for oral discussion. Prof. Wellman.

Open to Freshmen. Repeated in winter and spring terms. Three class meetings; prep., 3 hrs.; 6 units.

21–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; 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. Herring.

Open to all students except Freshmen. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

22–b. History of Education. A general survey of Greek, Roman and European history; the Renaissance periods, an intensive study of modern educational movements; the evolution of the public school systems in the United States. A large part of the time is devoted to a discussion of the developments in American education since 1890. Modern tendencies in the secondary field will receive consideration in connection with such movements as junior high schools, junior colleges, pre-vocational and vocational training, professional education, education of the atypical pupil. Lectures, assigned readings, reports and discussions. Mr. Herring.

Prerequisite: Education 21–a. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

23–c. Classroom Management. This is a basal course for teachers and it places special emphasis on classroom organization and control as a problem of large importance. It presents the class as a great social instrument, education as a process of social adjustment, and management as a constructive social undertaking. It aims to furnish students with a compendium of principles that will furnish a foundation for the mastery of technique, that will interpret these principles in the light of accepted psychological laws, and that will unite these principles and laws into a coherent system. The laboratory method will be employed and differentiated assignments will permit each student to progress at his own optimum rate. Mr. Herring.

Prerequisite: Education 22–b. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

30–a, 30–c. 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. Prof. Ekdahl.

Required of Juniors in the Industrial Course and of Seniors in the Business Fundamentals Course. Open to a limited number of Juniors and Seniors in other courses. Lec. or rec., 3 hrs.; prep., 4½–6 hrs.; 7½–9 units.

(See courses under Experimental Psychology.)

31–a. Psychology of Childhood. 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, problems, assigned readings and discussions. Prof. Ekdahl.

Required of Seniors in Home Economics Teacher Training Course. Open to Juniors and Seniors. Accepted jointly with 33–c, and 40–c, for State Secondary Certificate. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

32–b. Psychology of Adolescence. The purpose of this course is to give high school principals and teachers a deeper 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, problems, assigned readings and discussions. Prof. Ekdahl.

Prerequisite: Education 31–a. Required of Seniors in the Industrial and Agricultural Teacher Training courses. Accepted jointly with 31–a and 40–c for a State Secondary Certificate. Open to Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

33–c. 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. Prof. Ekdahl.

Prerequisite: Education 32–b. Open to Juniors and Seniors. Accepted jointly with 31–a and 40–c, for the State Secondary Certificate. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

34–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. Prof. Ekdahl.

Required of Juniors in Agricultural and Industrial Teacher Training courses. Open to Juniors and Seniors. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

35–a. 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. Prof. Ekdahl.

Junior and Senior subject. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

36–b. The Measurement of Achievement. This course will furnish an opportunity to study the results of education as measured by evidences that children are learning. Some of the topics discussed are: school marks; the development of standard tests; the diagnostic and prognostic study of tests; the interpretation of the results of achievement tests; how to develop scales in various secondary school subjects; the effects of measurements on examinations, scholarship marks, methods, supervision, courses and the like. Lectures, assigned readings, problems, and discussions. Prof. Ekdahl.

Prerequisite: Education 35–a. Open to all Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

37–c. Measurement of Aptitudes and Mental Alertness. This course will concern itself with the problem of analyzing various types of intelligence. It deals with the chief facts of normal, mental, physiological, and anatomical development as a basis for differentiation in classroom procedure. Some attention will be given to the problem of adjustment among super-normal and sub-normal pupils. A technique of the administration of group and individual tests is studied and emphasis is laid upon performance tests. Lectures, assigned readings, problems, and discussions. Prof. Ekdahl.

Prerequisite: Education 36–b. Open to Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

38–a. Secondary Education in the Junior High School. The evolution of the junior high school; its particular features and functions; the attempt to humanize the education of adolescents and advance the cause of democracy are some of the topics discussed. Considerable attention is given to the program of studies for and administration of junior high schools. Consideration is given in this course to extra-classroom activities and their articulation with classroom procedures. Lectures, assigned readings, problems, discussions. Prof. Wellman and Prof. Bisbee.

Open to Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

39–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. Lectures, assigned readings, problems and discussions. Prof. Wellman and Prof. Bisbee.

Junior and Senior subject. Required of Seniors in Industrial Teacher Training. Accepted for State Secondary Certificate. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

40–c. Classroom Methods. A consideration of the purposes of high school instruction; 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; directed study; the measurement of the results of teaching. Lectures, assigned readings, problems and discussions. Prof. Wellman and Prof. Bisbee.

Prerequisite: Education 39–b. Accepted with 31–a and 32–b or 33–c for a State Secondary Certificate. Junior and Senior subject. Required of Juniors in Agricultural and Seniors in Industrial and Home Economics Teacher Training. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

41–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 Prof. Bisbee.

Prerequisites: Senior standing in Professional Education Course and permission of the head of the department. 6–50 units.

42–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. Prof. Wellman.

Required of Seniors in Home Economics, Agricultural and Industrial Teacher Training courses. Senior subject. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

43–b. Mental Hygiene. This course will consider some of the more important chapters in modern school hygiene: conditions that determine growth and development, physiological age, the physical and mental differences between children and adults, the general principles of somatic and mental hygiene, tests of ability to work and physical condition, medical inspection, the development of habits of healthful

mental activity and the hygienic aspects of various school exercises. Lectures, assigned readings, cases and discussions. Prof. Ekdahl.

Prerequisite: Education 31–a. Junior and Senior subject. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

44–b–c. New Hampshire State Program of Studies and School Law. This course will consider the aims and purposes, the plan of organization and administration of the secondary school as outlined in the New Hampshire State Program of Studies. This program of studies will be evaluated in the light of those used in other states and students will have an opportunity here to become thoroughly acquainted with the secondary school organization in New Hampshire. Similar emphasis will be placed on the New Hampshire School Law. Lectures, assigned readings, and discussions. Prof. Bisbee.

Senior subject. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

45–a. School Administration. A subject in the fundamental principles of school administration intended primarily for superintendents, and for those who are preparing to become superintendents or supervisors, or directors of educational research. Topics: principles of scientific management applied to school administration; school records and reports; problems of school finance; judging school buildings; special schools; special phases of school work as health education, compulsory attendance; the training of school superintendents and supervisors; the uses of school surveys; the publicity work of a school system. Reference reports on special topics and discussions. Prof. Bisbee.

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. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

46–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. Prof. Bisbee.

Open especially to both men and women who wish to become principals or headmasters. Admission by consent of the instructor. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

47–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. Prof. Bisbee.

Open to men and women who wish to become administrators or supervisors. Admission by consent of instructor. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

AGRICULTURAL EDUCATION

48–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, 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. Farnum.

Required of Seniors taking the Agricultural Teacher Training Course, and open only to these students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

49–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. Farnum.

Required of Seniors taking the Agricultural Teacher Training Course, and open only to these students. 50 units.

52–a. Educational Problems. (Democracy in Education and Character Development.) This course will discuss student participation in

high school control; social functions, their nature, supervision, time, and place. The underlying principles of club work, together with a discussion of organization and administration of typical clubs of senior high schools, will be given careful attention. The problem of character education and a discussion of the moral standards in our high schools as revealed by investigations will furnish the student with concrete evidence in this interesting field. Lectures, assigned readings, problems, and problems of research. Prof. Wellman and Prof. Bisbee.

Open to Seniors in Professional Education. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

53–b. Educational Problems. (Educational and Vocational Guidance.) This course endeavors to make clear the problems with which the school counselor, the employment manager, and the intelligent individual himself have to deal. It discusses the beginnings of the guidance, pseudo-guidance, counselors' work in junior and senior high schools, and shows the intelligent student how he may guide himself, the methods of securing a position and obtaining advancement. Lectures, assigned readings, projects, problems, case studies with special reports. Prof. Wellman and Prof. Bisbee.

Open to Seniors in Professional Education. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

54–c. Educational Problems. (The Psychology of Management.) This course is designed to help those who are concerned with administration and supervision, whether in the teaching profession or in any business occupation, to establish and maintain that human efficiency which results from high group morale. There will be a discussion of teacher participation through advisory council, shop committee plans, and other means of promoting democracy in the field of management. Three tenths of the time of this course will be devoted to the consideration of the psychology of camp leadership and special lectures will be introduced through the coöperation of the college Y. M. C. A. and Y. W. C. A. The camp leadership section will be open to all students and will carry three time units credit. Projects, problems, topical reports and discussions. Prof. Wellman.

Open to Seniors in Professional Education. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

55–a, 56–b, 57–c. Special Problems in Educational Psychology. In this course an opportunity is afforded for intensive experimental and

statistical work in Educational Psychology. Special problems may be carried over two or more terms.

Open to Seniors and graduate students who have 30 units credit in Educational Psychology. Units to be arranged.

CLASSROOM PROCEDURES

The purpose of these subjects is to aid the student in obtaining a mastery of the technique of instruction in the secondary school subjects. The content of the high school subjects will be carefully scrutinized, standard texts evaluated, and visual aids manipulated. The content of each subject will be divided into teaching units and each student will plan the procedure for teaching these units to high school pupils. These special methods courses will be taught by expert high school teachers who will present the most approved devices for motivation, for concentric assignments, for supervision of study, and for effective pupil activity.

40.4–a. The Teaching of History in Secondary Schools. Prof. Wellman.

40.7–b. The Teaching of Science in Secondary Schools. Prof. Wellman.

Prerequisite: Junior standing in Professional Education. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

ELECTRICAL ENGINEERING

Leon W. Hitchcock, *Professor*
Frederick D. Jackson, *Assistant Professor*
William B. Nulsen, *Assistant Professor*

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, electrical measuring instruments, inductance, capacitance, alternating current circuits, power factor, wave form, alternators and armature windings. Prof. Hitchcock, Prof. Jackson, Prof. Nulsen.

Prerequisites: Physics 8–c, Mathematics 9–c, and Electrical Engineering 33–c. Required of Juniors in Electrical Engineering. Rec., 3 hrs.; prep., 6 hrs.; 9 units.

4–a. Telephone and Telegraph Communication. A study of the acoustic and electrical principles of telephony, transmitting and receiving apparatus; magneto and common-battery switchboards and accessories; principles of automatic telephone systems; selective party-line systems; overhead and underground construction; phantom, simplex, and composite circuits; transpositions; protection; transmission theory of lines. Prof. Jackson.

Prerequisites: Electrical Engineering 3–c, 16–b, or 27–c. Required of Seniors in Electrical Engineering. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

5–b. Telephone and Radio Communication. Transmission units and measurements; vacuum tube repeater circuits; carrier-current systems; radio communication, including a study of the thermionic vacuum tube, properties of oscillating circuits, antenna systems, radiation, damped and undamped wave telegraphy, radio telephony, and the principles of television. Prof. Jackson.

Prerequisites: Electrical Engineering 4–a. Required of Seniors in Electrical Engineering. Rec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

6–c. Telephone Transmission Characteristics; Radio Circuits and Application. Measurement of transmission losses and gains; gain-frequency characteristics; network balance; filters; a study of circuits for reception and broadcasting; tubes for the rectification of alternating current; a study and measurement of tube characteristics. Prof. Jackson.

Prerequisites: Electrical Engineering 5–b. Elective for Seniors in Electrical Engineering. Rec., 3 hrs.; lab., 2½ hrs.; prep., 6½ hrs.; 12 units.

7–a, 8–b. Electrical Engineering Practice. This subject includes a detailed study of alternators, transformers, induction motors, regulators, synchronous motors, converters and rectifiers. Prof. Jackson, Prof. Hitchcock.

Prerequisite: Electrical Engineering 3–c. Required of Seniors in Electrical Engineering. Rec., 3 hrs.; prep., 6 hrs.; 9 units.

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. Prof. Hitchcock.

Prerequisite: Electrical Engineering 8–b. Required of Seniors in Electrical Engineering. Rec., 3 hrs.; prep., 6 hrs.; 9 units.

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. Prof. Hitchcock.

Required of Seniors in Electrical Engineering. Rec., 2 hrs.; prep., 2 hrs.; 4 units.

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. Prof. Nulsen.

Prerequisite: Electrical Engineering 30–c. Required of Seniors in Electrical Engineering. 11–a and 12–b: lab., 5 hrs.; prep., 5 hrs.; 10 units. 13–c: lab., 5–8 hrs.; prep., 7–4 hrs.; 12 units.

15–a, 16–b. 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; inductance; capacitance; the alternating current circuit; alternating current generators, motors, starting devices, controllers, transformers, converters and rectifiers. Prof. Nulsen.

Required of Seniors in Chemical Engineering. Rec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

19–a. 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. Prof. Nulsen.

Required of Seniors in Electrical Engineering. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

21–c. Theory of Electrical Circuits. The application of mathematics to the solution of problems and in the treatment of circuits. The derivation of fundamental formulas and constants.

Prerequisites: Electrical Engineering 8–b and 20–a. Required of Seniors in Electrical Engineering. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

22–a, 23–b, 24–c. Term Paper. An investigation of the history and development of electrical theory or equipment, or an original research involving electrical principles and their application. The written paper must conform to the rules of grammar and composition and must be submitted at stated intervals for criticism. Prof. Hitchcock.

Required of Seniors in Electrical Engineering. Lab., 4 hrs.; 4 units.

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; inductance; capacitance; the alternating current circuit; alternating current generators, motors, starting devices, controllers, transformers, converters and rectifiers. Prof. Jackson.

Required of Juniors in Mechanical and Industrial Engineering. Rec., 3 hrs.; lab., 2½ hrs.; prep., 5½ hrs.; 11 units.

28–a, 29–b, 30–c. Electrical Laboratory. The operation and testing of direct current circuits and machinery to supplement the theory covered in Electrical Engineering 1–a, 2–b and 3–c. Prof. Nulsen.

Prerequisite: Electrical Engineering 33–c. Required of Juniors in Electrical Engineering. Lab., 2½ hrs.; prep., 2½ hrs.; 5 units.

31–a, 32–b, 33–c. Introduction to Electricity. An elementary study of electrical circuits and machinery consisting of both calculations and experiments. Prof. Hitchcock, Prof. Jackson, Prof. Nulsen.

Required of Sophomores in Electrical Engineering. 31–a: Lab., 2 hrs.; prep., 1 hr.; 3 units. 32–b: Rec., 1 hr.; lab., 2 hrs.; prep., 1 hr.; 4 units. 33–c: Rec., 2 hrs.; lab., 2 hrs.; prep., 1 hr.; 5 units.

34–a, 35–b, 36–c. Electric Machinery. The electric circuit; the magnetic circuit; direct current generators and motors; primary and secondary cells; inductance; capacitance; the alternating current circuit; alternating current machinery and controlling devices. Prof. Jackson.

Required of Juniors in Civil Engineering. Rec., 2 hrs.; lab., 2½ hrs.; prep., 2 hrs.; 7½ units.

37–a, 38–b, 39–c. Electrical Problems. The solution of problems involving both direct current and alternating current circuits and machinery. Prof. Hitchcock.

Required of Juniors in Electrical Engineering. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

41–a, 42–b, 43–c. Student Branch of the American Institute of Electrical Engineers. A student organization conducted in accordance with the by-laws of the Institute with meetings given a place on the student's class schedule. Each student is required to present and discuss a paper on an approved subject. At times the meeting may take the form of a debate, an address by an outside lecturer or a motion picture of an instructive nature. A member of the department will be present at each meeting.

Required of Juniors in Electrical Engineering. Rec., 1 hr.; prep., ½ hr.; 1½ units.

44–a, 45–b 46–c. Student Branch of the American Institute of Electrical Engineers. Continuation of 43–c. The meetings of the Branch are attended by both Juniors and Seniors.

Required of Seniors in Electrical Engineering. Rec., 1 hr.; prep., ½ hr.; 1½ units.

100–c. Electric Circuits. Adapted primarily to students in Architectural Construction. The calculation of wire sizes for circuits; a comparison of three-wire with two-wire circuits; the wiring of buildings for light and power; the requirements of the National Board of Fire Underwriters in connection with electrical installations; a study of types of lighting fixtures; reflectors; residence lighting; etc. Prof. Hitchcock.

Required of Juniors in Architecture. Elective for Seniors in Liberal Arts and Agriculture. It is necessary to limit the number of students electing this subject. Approval of the head of the department must be secured. Rec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

101–b. Electricity on the Farm. 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. Prof. Nulsen.

Required of Seniors in Dairy Husbandry, Poultry Husbandry and Teacher Training Course in Agriculture. Elective for other Seniors in the College of Agriculture. Rec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

ENGLISH

ALFRED E. RICHARDS, *Professor*
HAROLD H. SCUDDER, *Professor*
WILLIAM G. HENNESSY, *Associate Professor*
CLAUDE T. LLOYD, *Associate Professor*
LUCINDA P. SMITH, *Associate Professor*
EDMUND A. CORTEZ, *Assistant Professor*
PAUL S. SCHOEDINGER, *Assistant Professor*
ROBERT G. WEBSTER, *Instructor*
THOMAS H. MCGRAIL, *Instructor*
E. BARTON HILLS, *Instructor*
NELLIE E. POTTLE, *Instructor*
GERTRUDE E. NYE, *Assistant*

Major: 150 time units of departmental and related departmental subjects, exclusive of elementary subjects.

Graduate Work: For subjects primarily for graduate study, see Catalog of the Graduate School.

COMPOSITION

1–a, 2–b, 3–c. English Composition. The chief purpose of this subject is to give the student drill in the mechanics and conventions of English composition. Stress is laid upon expository writing. At the same time the elementary principles of grammar, punctuation, paragraphing, etc., are reviewed. Prof. Richards, Mr. McGrail, Mr. Hills and Miss Nye.

Required of Freshmen in the Colleges of Agriculture and Technology. Lec. or rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

1.5–a, 2.5–b, 3.5–c. English Reading. This subject has for its chief aim the correlation of Freshman English with the required subjects in other departments of the College of Liberal Arts. It consists of extensive reading (at least seven books or their equivalent) in the fields of biog-

raphy, fiction and history. Class drill in English grammar and composition is based upon the subject matter of the books read. Prof. Richards, Prof. Scudder, Prof. Hennessy, Prof. Schoedinger, Prof. Cortez, Mr. Webster, Mr. Hills and Mr. McGrail.

Required of Freshmen in the College of Liberal Arts. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

4–a, 5–b, 6–c. 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 is frequent theme writing illustrating these forms of composition, and the work is supplemented by a program of outside reading. Prof. Smith, Prof. Lloyd, Mr. Webster and Mr. McGrail.

Required of Sophomores in the College of Liberal Arts. Lec. or rec., 1–3 hrs.; prep., 6 hrs.; lab., 0–2 hrs.; 9 units. Prerequisites: English 1.5–a, 2.5–b, and 3.5—c.

4.5–a, 5.5–b, 6.5–c. Principles of Business Writing. (Exclusively for Sophomores taking the Business Fundamentals Course.) This subject is the complement of 4–a (Second Year English) and differs from it only in the added emphasis it places upon the special forms of English writing employed in business. Drill in English grammar, collateral reading and discussion, and the writing of expository themes and business letters. Prof. Hennessy.

Prerequisites: English 1.5–a, 2.5–b, and 3.5–c. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

9–a. Daily Themes. Short papers reproducing impressions of daily life; class discussion and general criticism; weekly individual conferences. Prof. Lloyd.

Prerequisite: English 6–c or 6.5–c. Elective for Juniors and Seniors. Lec. or rec., 1–3 hrs.; prep., 6 hrs.; lab., 1-2 hrs.; 9 units.

10–b. Writing the Short Story. A study in the technique of writing short stories; criticism of representative short stories; extensive practice in writing. Prof. Lloyd.

Prerequisite: English 9–a. Lec., rec., and conf., 3 hrs.; prep., 6 hrs.; 9 units.

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 the dean of the college concerned and the head of the English Department. This subject does not give credit toward graduation. Prof. Smith.

22–a, 23–b, 24–c. (See Electrical Engineering 22–a, 23–b, 24–c.) Mr. Webster.

73–a. Expository Writing. Practice in the writing of reports and bulletins pertaining to Agriculture. Mr. Webster.

Prerequisite: English 3–c. Required of all Seniors in the College of Agriculture. No others admitted except by special permission. Lec. or rec., 2 hrs.; prep., 5½ hrs.; 7½ units. (Formerly given as 73–a–b–c.)

89–a, 90–b, 91–c. (See Mechanical Engineering 89–a, 90–b, 91–c.) Mr. Webster.

LITERATURE AND LANGUAGE

16–a, 17–b, 18–c. Introduction to English Literature. A general survey of English literature from its beginnings to the year 1900. To one who intends to teach English it is of fundamental importance. Lectures and recitations. Prof. Schoedinger.

Elective for all classes. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

20–a, –b. The Literature of the Seventeenth Century. A study of prose and poetry (exclusive of Milton and the drama) from Bacon and Donne to Dryden. Prof. Lloyd.

Elective for Juniors, Seniors, and graduate students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

20.5–a, 21.5–b. Milton. A detailed study of Milton's minor poetry and *Paradise Lost.* Consideration is also given to the social, political and religious history of Milton's day as reflected in his life and poetry. Prof. Scudder. (Not given in 1930–31.)

20.5–a is a prerequisite for 20.5–b.

Elective for Juniors, Seniors and graduate students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

21–c. History of the English Drama. A survey of the English drama from its beginnings to the closing of the theatres. Constant reading of the plays, with written criticisms and reports, is required. Prof. Scudder.

Elective for Sophomores, Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

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. Prof. Scudder.

Elective for Juniors, Seniors, and graduate students. Lec. or rec., 3 hrs.; prep., 8 hrs.; 11 units.

23–a, 24–b, 25–c. American Literature. Lectures and extensive outside reading. Prof. Scudder.

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

26–a–b–c. Victorian Poetry. A study of English poetry from 1837 to 1900, with special reference to the poetry of Tennyson and Browning. Prof. Schoedinger.

Elective for Juniors and Seniors. Lec or rec., 3 hrs.; prep., 6 hrs.; 9 units.

26.–5a, –b. The English Romantic Poets. A study of the poetry of Wordsworth, Coleridge, Scott, Byron, Shelley, and Keats, and of the causes and characteristics of the romantic movement. Prof. Lloyd. (Not given in 1930–1931.)

Elective for Juniors, Seniors, and graduate students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

27–a, 28–b, 29–c. Shakespeare's Plays. A critical study of the major histories, comedies, and tragedies—Shakespeare, as poet and as dramatist. Prof. Hennessy.

Elective for Juniors, Seniors and graduate students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

31–b. An Introduction to Drama. A comprehensive survey of the field of drama, beginning with the drama of Greece and ending with that of Ibsen. Prof. Hennessy.

Elective for Juniors, Seniors and graduate students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

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.

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

35–c. The English Essay. A study of selected essays from Bacon to Stevenson, designed to show the development of the essay as a literary form. Prof. Hennessy.

Elective for Juniors, Seniors and graduate students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

37–c. John Ruskin. The reading of selected essays by Ruskin which bear upon the literary, artistic and social problems of the present day. Prof. Richards.

Elective for Sophomores, Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

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. Prof. Scudder.

Elective for Juniors, Seniors and graduate students. Lec. or rec., 3 hrs.; prep., 8 hrs.; 11 units.

40–c. The American Short Story. A study of the short story in American fiction from 1786 to the present day. Prof. Scudder.

Elective for Sophomores, Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

41–a. Modern Poetry. A study of American poetry written since 1900. Mr. Hills.

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

48–b. Contemporary Drama. Modern British and Continental drama from Ibsen to the present. Theories, types and developments. Prof. Hennessy.

Elective for Juniors, Seniors and graduate students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

ORAL ENGLISH

60–a,–b, –c. Public Speaking. Theory and practice. The intellectual element in vocal expression with reference to phrasing, inflection and emphasis; technique of composition and delivery of various types of speeches; a general course for prospective business men, teachers, and candidates for the various professions dependent upon a college training. One section.

Elective for Sophomores, Juniors and Seniors. Rec. or lab., 3 hrs.; prep., 6 hrs.; 9 units.

61–a. Principles of Argumentation. Nature of persuasion, public discussion, and debate; nature of evidence; elements and analyses of reasoning; a study of fallacies in reasoning; refutation; briefing; limited classroom debates. Two sections.

Elective for Sophomores, Juniors and Seniors. Rec. or lab., 3 hrs.; prep. 6 hrs.; 9 units.

62–b. Varsity Debating. Admission by try-out only. Lab., 3 hrs.; 5–18 units.

63–c. Advanced Public Speaking. A study of the emotional element with reference to utterance, quality of voice, force, time, etc. Intensive drill and individual practice in the technique of composition and delivery of various types of speeches for formal and informal occasions. Prerequisite: Eng. 60–a or its equivalent.

Permission of the instructor must be secured before enrolling for this subject, and the registration is limited to sixteen members.

Elective for Sophomores, Juniors and Seniors. Lab., 3 hrs. prep., 6 hrs.; 9 units.

65–a–b–c. Play Production. This is not an elective subject. It is an advanced laboratory course in the actual staging and presenting of plays by standard authors. Members of the course are chosen by competitive trial test, and credit is given both for acting and for constructive work in the technical phases of production. Prof. Hennessy.

Time units 1–9.

69–a. Dramatic Interpretation. An elementary course in the fundamentals of acting and play producing. A laboratory course in which theory is taught through constant practice drill. Designed particularly for prospective teachers of English. Prof. Hennessy.

Elective for Juniors and Seniors. Rec., 3 hrs.; prep., 6 hrs.; 9 units.

JOURNALISM

76–c. News Writing. This is a course in the elements of journalism, and covers the preparation of news copy and the duties of the reporter. Special stress is laid upon newspaper publicity and the problems of the press agent. Prof. Scudder.

Elective for those who have attained a grade of 75 or higher in English 3–c or 3.5–c. Lec. or rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

FOR SENIOR, ADVANCED AND GRADUATE STUDENTS ONLY

84–a, 85–b, 86–c. The Teaching of High School English. The subject is especially designed for those who major in English and are planning to become teachers of English. It offers training in the teaching of oral and written composition, and in poetry, prose fiction, the essay, and drama. The state requirements in English are thoroughly reviewed. New Hampshire and Massachusetts schools are visited and the teaching of English observed in those institutions. Special tutoring of freshmen students who are deficient in English is also a part of this course. A student can receive credit for two terms only. Prof. Smith.

Prerequisites: English 6–c and Education 40–c. Elective for Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

85–a, 86–b, 87–c. The English Language. A study of Middle English language and literature as exemplified by Chaucer's *Canterbury Tales*, followed by a study of the development of the English language from the time of Chaucer to the present. Open only to Seniors majoring in English. Prof. Richards.

85–a is required; 86–b and 87–c are elective. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

ENTOMOLOGY

WALTER C. O'KANE, *Professor*
PHILIP R. LOWRY, *Assistant Professor*

Major: 150 time units from the Department of Entomology and from related departments, especially Chemistry, Botany, and Zoölogy, exclusive of elementary subjects. **Professional Training:** The Department of Entomology is prepared to offer professional training in Entomology. For adequate training a broad foundation as well as thorough specialization is necessary. To accomplish this the period of training should extend beyond the regular four years of undergraduate college work. Students who desire to specialize in Entomology are requested to consult the head of the department in order to plan an adequate and comprehensive sequence of studies.

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. Prof. O'Kane and Prof. Lowry.

Required of Sophomores in Agriculture. Elective for Sophomores, Juniors and Seniors in other courses. Lec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

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. Prof. O'Kane.

Prerequisite: Entomology 1–a. Required of Juniors in Horticulture. Elective for other Juniors and Seniors. Lec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units. (Given in alternate years beginning with 1931–32.)

3–b. Insects of Domestic Animals. The insect enemies of domestic livestock; the life histories, habits and means of control. Adapted especially for students in Animal Husbandry. Prof. O'Kane.

Prerequisite: Entomology 1–a. Required of Seniors in Animal Husbandry. Lec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units. (Given in alternate years beginning with 1930–31.)

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. Prof. O'Kane.

Required of Seniors in Institutional Management. Elective for Sophomores, Juniors and Seniors. Lec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

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. Prof. O'Kane and Prof. Lowry.

Required of students specializing in Entomology. Open to students only by permission of head of department. Hours and units 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. Prof. O'Kane and Prof. Lowry.

Open to students only by permission of head of department. Required of students specializing in Entomology. Hours and units 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. Prof. O'Kane.

Prerequisite: Entomology 1–a. Required of Juniors in Forestry. Elective for others. Lec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

For subjects primarily for graduate students see Catalog of the Graduate School.

FORESTRY

KARL W. WOODWARD, *Professor*
CLARK L. STEVENS, *Assistant Professor*

1–c. Principles of Forestry. This subject is intended to meet the needs of students who desire 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. Prof. Woodward.

Required of all Freshmen in Agriculture except Forestry. Lec., 3 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 9 units.

2–c. Principles of Forestry. The same as Forestry 1–a, except that no laboratory work is included. Prof. Woodward.

Elective for any student. Lec., 3 hrs.; prep., 3 hrs.; 6 units.

3–a. Dendrology. This course deals with the characteristics of our native tree species, and with the identification of trees in the field and from specimens. Additional practice in identifying northern species is given during Summer Camp. Prof. Stevens.

Required of Freshmen in Forestry. Elective for others. Lec., 2 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 9 units.

4–b. Wood Identification. A study of the uses and grades of lumber, the physical properties and the identification of the commercially important woods. Each student is required to provide himself with a hand lens. Prof. Stevens.

Required of Freshmen in Forestry. Elective for others. Lec., 2 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 9 units.

5–a. Silvics. This course considers the effect of the environment of the forests: the factors which influence the growth of trees and stands. The field work consists of practice in measuring the intensity and dura-

tion of the environmental factors, and of detailed as well as general studies of forest vegetation. A part of the field work is carried out during Summer Camp. Toumey's "Foundations of Silviculture" is used as a text. Prof. Stevens.

Required of Juniors in Forestry. Elective for others with approval of the instructor. Prerequisite: Forestry 3–a. Lec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

6–a, 24–b, 7–c. Silviculture. The art of producing and tending a forest. Includes seed collection, storage and testing; nursery practice; forest plantations; systems of natural regeneration; intermediate cuttings; forest protection; and discussion of silvicultural practice in the most important forest regions of the United States. Each student is required to provide himself with a serviceable axe. Hawley's "Practice of Silviculture," and Toumey's "Seeding and Planting" are used as texts. Prof. Stevens.

Required of Sophomores in Forestry. Elective for others with approval of the instructor. 6–a and 7–c: Lec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units each. 24–b: Lec., 3 hrs.; prep., 6 hrs.; 9 units. (Given in alternate years, commencing with 1930–31.)

26–a, 8–b, 9–c. Forest Mensuration. Includes practice in forest mapping; measurement of forest products; timber cruising; and studies of growth and yield of the commercial tree species of New England. The course is continued during Summer Camp. Each student is required to provide himself with a box compass. Prof. Stevens.

Required of Juniors in Forestry. Elective for others with approval of the instructor. Prerequisites: Forestry 3–a, Civil Engineering 7–a, 26–a: Lec., 1 hr.; lab., 5 hrs.; prep., 3 hrs.; 9 units. 8–b, 9–c: Lec., 2 hrs.; lab., 5 hrs.; prep., 2 hrs.; 9 units. (Given in alternate years, commencing with 1931–32.)

10–a, 11–b, 12–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. Prof. Woodward.

Prerequisites: Forestry 3–a, 7–c, 9–c, 16–b, 17–c. Required of Seniors in Forestry. Lec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units.

13–b, 14–c, 15–a. Thesis. Work to be arranged according to the needs of individual students. Prof. Woodward and Prof. Stevens.

Prerequisites: Forestry 3–a, 7–c, and 9–c. Required of Juniors and Seniors in Forestry. Lec., 2 hrs.; lab., 4 hrs.; prep., 2 hrs.; 8 units.

16–b, 17–c. Logging and Forest Products. Methods and costs of logging and milling in the chief lumber-producing regions of the United States; various types of forest products, their manufacture and marketing, together with special problems of the lumber business. Emphasis is placed upon New England conditions. Attendance on instruction trips is required for credit in this course. Bryant's "Logging," and Brown's "Forest Products" used as texts. Prof. Stevens.

Required of Juniors in Forestry. Elective for others. Lec., 3 hrs.; prep., 6 hrs.; 9 units.

18–b, 19–c. History 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. Prof. Woodward.

Required of Seniors in Forestry. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

20–a, 21–b. National Forest Administration. The principles and methods employed on the National forests. "The Use Book" is used as a text. Prof. Woodward.

Prerequisites: Forestry 3–a, 7–c, and 9–c. Required of Seniors. Lec., 3 hrs.; prep., 4 hrs.; 7 units.

22–s. Summer Camp. A six weeks' course at the Swift River Camp, Passaconaway, N. H. Lectures and field work on the following projects: A forest survey of a large area of the White Mountain National Forest; silvical studies of the northern forest types; fish and game on the national forests; dendrology. There is opportunity for instruction by officers of the U. S. Forest Service, and from three to six days are spent under their supervision on such work as fighting forest fires, building trails, telephone lines, etc. Each student is required to act as cook for a part of the course, and the details of running the camp and directing the survey are handled by the students as part of the instruction. Prof. Stevens.

Required of Juniors in Forestry. Prerequisites: Forestry 9–c, 25–c, Home Economics 65–b. Lec., 3 hrs.; field and office work, 42 hrs.; 23 units. (Given in alternate years, beginning in 1930.)

23–a. Farm Woodlot Problems. This course is intended primarily to cover the methods of teaching Farm Forestry in agricultural high schools, but may be changed to meet the needs of the individual student. (Given in alternate years beginning in 1931–32.) Prof. Stevens.

Prerequisite: Forestry 1–a. Required of Seniors in Teacher Training. Lec., 2 hrs.; lab., 2½ hrs.; prep., 2½ hrs.; 7 units.

25–c. Forest Improvements. Lectures on the methods of construction and the costs of the more important structures listed as improvements of the forest. Includes roads, trails, simple bridges, logging railroads, telephone lines, flumes, slides, ranger cabins, lookout stations, etc. Prof. Stevens.

Required of Freshmen in Forestry. Elective for others with approval of the instructor. Lec., 3 hrs.; prep., 6 hrs.; 9 units.

GEOLOGY

C. Floyd Jackson, *Professor*
George W. White, *Assistant Professor* (*In Charge*)
Theodore Ralph Meyers, *Instructor*

Major: 150 time units of departmental and related departmental subjects, exclusive of elementary subjects.

1–a, 2–b, 3–c. Elementary Geology. The study of the earth and its history. A consideration of the forces that have operated to produce land forms and structures, and a discussion of the materials of the earth's crust. These facts will then be applied to the interpretation of past geologic events, together with their effect on the development of life forms. Prof. White and Mr. Meyers.

A unit course, to be started only with 1–a. Freshman subject. Lec. or rec., 3 hrs.; prep., 5 hrs.; lab., 2 hrs.; 10 units.

16–a. Advanced Physiography. An advanced study of land forms and erosion cycles, glaciation, work of the ocean, and related forces,

together with their effects on the various physiographic provinces of North America. Field trips for the study of physiographic features are made to the White Mountains, to the New Hampshire coast, and to the glacial features near Durham. Prof. White.

Prerequisite: Geology 3–c. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

17–b. Structural and Dynamic Geology. A consideration of the structure of the earth's crust, metamorphism, and the forces that have operated to produce them. Prof. White.

Prerequisite: Geology 3–c. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

18–c. Historical Geology. A study of the development of the earth and its life, using the facts gained in the previous study of physical geology. Prof. White.

Prerequisites: Geology 17–b, or consent of instructor. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

20–b. General Geology. A general introductory course in physical geology, in which the structures and materials of the earth's crust are discussed, together with the forces which have produced and altered them. Mr. Meyers.

Required of Freshmen in Agriculture, Sophomores in Chemistry, and Juniors in Civil Engineering. Open to Liberal Arts students by permission only. Lec. or rec., 3 hrs.; prep., 5 hrs.; 8 units.

30–a, 31–b, 32–c. Economic Geology. A discussion of the metals, their ores, and their occurrence, and consideration of the types of coal and their occurrence in the coal fields of the United States. A brief study of petroleum, the structures in which it occurs, and the distribution in the oil fields of the world, especially those of the United States. Lime, cement, building stones and related products will be treated briefly. Prof. White and Mr. Meyers.

Prerequisites: Geology 18–c, or consent of the instructor. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units. (Formerly given as 7–a, 8–b, 9–c.)

33–a, 34–b, 35–c. Mineralogy. A study of the minerals that make up the earth's crust. The first term will be devoted to a study of

crystals, by means of models and specimens showing well defined crystals. The second term will be given to a study of minerals and their determination, by means of physical characteristics. The third term will continue the work of the second term and may take up in addition the aggregation of minerals to form rocks, or some work on minerals with the blow pipe, depending somewhat on the needs and desires of the class. Prof. White.

Prerequisites: At least one year's work in Geology and Chemistry, or consent of the instructor. Lec. or rec., 2 hrs.; lab., 2 hrs.; prep., 4 hrs.; 8 units.

36–a, 37–b, 38–c. Paleontology. A study of the history, development, and morphology of the various groups of plants and animals as recorded by fossils found in the rocks of the earth's crust. More attention will be given to the development of animals than to plants. Prof. White and Mr. Meyers.

Prerequisites: Zoölogy 3–c and Geology 3–c, or consent of instructor. Lec. or rec., 2 hrs.; lab., 2 hrs.; prep., 6 hrs.; 10 units. (Formerly given as 13–a, 14–b, 15–c.) (Not given in 1930–31.)

100–a. Building Stones and Clay Products. A study of the origin and occurrence of the various types of building stones. A consideration of the various types of clays, and the heavy-wares of constructional importance manufactured from them. Prof. White.

Required of Sophomores in Architectural Construction. Lec. or rec., 1 hr.; lab., 2 hrs.; prep., 3 hrs.; 6 units.

50–a, 51–b, 52–c. Geological Problems. A study of special problems, by means of conferences, assigned readings and field work. The work will be fitted to the needs of the individual students. Prof. White and Mr. Meyers.

Prerequisite: Permission of the instructor. Credits to be arranged.

HISTORY

DONALD C. BABCOCK, *Professor*
ARTHUR W. JONES, *Assistant Professor*
ALLAN B. PARTRIDGE, *Assistant Professor*
PHILIP M. MARSTON, *Assistant Professor*
WILLIAM YALE, *Instructor*

Major: In conference with the head of the department, 150 units in this and related departments, exclusive of elementary subjects. History 1–a, 2–b, 3–c will not be accepted for the major course, but students majoring in this department will be expected to have taken those three subjects in the Freshman year.
Graduate Work: For subjects primarily for graduate work, see Catalog of the Graduate School.

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 subjects in History are referred to the introductory note under Social Science.

The statements as to prerequisites, etc., below are for Liberal Arts students. Agricultural and Technology students should consult the head of the department.

SUBJECTS OPEN TO FRESHMEN AND SOPHOMORES

The following three subjects constitute a basic course, required of students majoring in history, and recommended for all students before taking other history subjects. A survey of history down to 1914. Some supplementary material aiming at the social interpretation of history is included. Attention is given to important intellectual and social movements.

1–a, 2–b, 3–c. Introduction to History. Prof. Babcock, Prof. Partridge, Prof. Marston, Mr. Yale.

Elective for Freshmen and Sophomores who are taking or who have had Social Science parallel with it, term by term. Not open to Juniors and Seniors. Required of students majoring in History. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

SUBJECTS NOT OPEN TO FRESHMEN

History subjects subsequent to those designed especially for the freshman year are arranged in two groups, as indicated below. Sopho-

mores taking any of these subjects must choose one or the other of the two groups, and follow it, if further work is done in history, through six term subjects. This rule takes precedence over the statements concerning eligibility and prerequisites for individual subjects.

It is suggested, though the student is free to choose, that Group I should be elected by those whose major interest is in Accounting, Economics, Education, Home Economics, Physical Education, Political Science, Spanish, or Zoölogy. Those particularly interested in English, French, German, Latin, Music, Psychology, or Sociology are likely to find Group II more useful to them.

It is permissible to take work in both groups at the same time.

Students majoring in history are urged, though not compelled, to take 75 units in one group and 25 units in the other.

GROUP I

29–a, 30–b, 31–c. The United States in the Nineteenth Century. The three terms cover the following periods successively: 1800 to 1830, 1830 to 1865, 1865 to 1900. Prof. Babcock.

Elective for Sophomores, Juniors, and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Formerly 104–a, 105–b, 106–c.)

25–a, 26–b, 27–c, 28–a. Colonial and Revolutionary American History. The first two subjects take up colonial beginnings and national rivalries. 27–c is a study of the English colonies in America. 28–a deals with the Revolution and with our early national life up to 1800. Prof. Babcock.

Elective for Juniors and Seniors, and for Sophomores who have had or are taking 29–a, 30–b, or 31–c. Lec. or rec., 2 hrs.; prep., 6 hrs.; 8 units. (Formerly 110–a, 111–b.) (25–a, 26–b, 27–c not offered in 1930–31.)

32–b, 33–c. Recent American History. 32–b covers the period from 1900 to 1920. 33–c takes up the last decade intensively. Prof. Babcock.

Elective for Juniors and Seniors and for Sophomores who have had or are taking 29–a, 30–b, 31–c. Lec. or rec., 2 hrs.; prep., 6 hrs.; 8 units.

34–a, 35–b, 36–c. Latin-American History. A survey of the Iberian peninsula and its history as a background, the Spanish and Portuguese colonial epoch, the separation from Europe, the national characters

and resources of the Latin-American states, and their relations with our country. Prof. Partridge.

Elective for Juniors and Seniors, and for Sophomores by permission. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

GROUP II

4–a. The Ancient Orient. The story of the first civilization and the cultural accumulations of ancient times previous to Grecian civilization. Prof. Partridge.

Elective for Sophomores, Juniors, and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Formerly 113–a.) (Not offered in 1930–31.)

5–b, 6–c. History of Greece. The aim is to bring home to the student the richness of content of Grecian civilization, and its cultural value for the modern world. Prof. Partridge.

Elective for Sophomores, Juniors, and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Formerly 128–b.) (Not offered in 1930–31.)

7–a, 8–b, 9–c. History of Rome. This year's work carries the story of Rome from its legendary origins and preliterary foundations to the death of Justinian in 565. Prof. Partridge.

Elective for Sophomores, Juniors, and Seniors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

10–a, 11–b, 12–c. Medieval History. This survey of the pageant of the Middle Ages is divided by terms as follows: 10–a, from 565 to 962; 11–b, from 962 to 1190; 12–c, from 1190 to 1320. Prof. Jones. (Not offered in 1930–31.)

Elective for Juniors and Seniors, and for Sophomores by permission. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Formerly 114–a, 130–b.) (Sec. 2 open only by permission of instructor.)

13–a, 14–b, 15–c. The Period of the Renaissance. The Renaissance as a regathering of past values and as a forward movement introducing the Modern Period. Prof. Jones.

Elective for Juniors and Seniors, and for Sophomores by permission. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

16–a, 17–b, 18–c. Modern Europe. (Not given in 1930–31.)

Elective without Regard to Groups I and II

19–a, 20–b, 21–c, 22–a, 23–b, 24–c. History of England. The division by terms is as follows: 19–a, to 1066; 20–b, to 1327; 21–c, to 1558; 22–a, to 1714; 23–b, to 1837; 24–c, since 1837. Prof. Partridge.

Elective for Juniors and Seniors, and for Sophomores by permission. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Formerly 107–a, 108–b, 109–c.) (19–a, 20–b, 21–c, not offered in 1930–31.)

19.5–a, 20.5–b, 21.5–c. Seminar. Problems in English History. More complete treatment of some of the problems connected with the development of English institutions. Prof. Partridge.

Elective for Juniors and Seniors on consultation with the instructor. Discussion, 2 hrs.; prep., 8 hrs.; 10 units.

37–a, 38–b, 39–c. Recent World History. A study of the World War, its roots, its progress, and its outcome, and of post-war problems and world developments. Mr. Yale.

Elective for Juniors and Seniors on consultation with the instructor. Lec. or discussion, 3 hrs.; prep., 8 hrs.; 11 units. (Formerly 136–a, 137–b, 138–c.)

46–a, 47–b, 48–c. Seminar in Religious History. Seminar discussions centering around some of the great personalities in Christian history or other socio-religious movements. Prof. Babcock.

Open to Juniors and Seniors by permission of the instructor. Discussion, 2 hrs.; prep., 8 hrs.; 10 units. (Formerly 139–a, 140–b, 141–c.)

49–a, 50–b, 51–c. The Interpretation of History. An investigation of some of the ways in which thoughtful persons have viewed the historic process as a whole. The aim is the interpretation of life; the method is to combine philosophy, sociology, and history, with emphasis on the last. Prof. Babcock.

Designed especially for students majoring in History, but elective for Juniors and Seniors on consultation with the instructor. Lec. or rec., 3 hrs.; prep., 9 hrs.; 12 units.

68–b. History of the Far East. An attempt to round out the usual historic knowledge by taking up the history of Asia outside the range of "western" history. Connection will be made with occidental affairs in recent times, however, and notice will be taken of the possible future significance of the Eastern culture for the West. Prof. Jones.

Prerequisite: 21 units of history for Juniors, 7 for Seniors. Elective for Juniors and Seniors. Lec. or rec., 2 hrs.; prep., 7 hrs.; 9 units. (Formerly 131–b.)

64–a. History of Eastern Europe. This course takes up Russia, Poland, Lithuania, the Balkans, etc.—in short, the Slavic contribution to history. Prof. Jones.

Prerequisite: 15 units of History for Juniors, 7 units for Seniors. Elective for Juniors and Seniors. Lec. or rec., 1 hr.; prep., 6 hrs.; 7 units. (Formerly 142–a.)

61–a, 62–b, 63–c. Honors Course in History. Majors in this department, with senior standing, who are of exceptional ability, and who are abreast of all institutional requirements for courses, groups, major program, etc., may be admitted. The Honors Course student will do all or most of his work under the supervision of the department head. The work will be so planned as to free him from the usual program of courses, time units, class attendance, etc. Greater freedom within a selected field of history will be the object. Weekly meetings will take place with the department head and such other instructors as may be concerned with his work from time to time. (Formerly 150–a, 151–b, 152–c.)

History of Costume. See Home Economics 12–b. Students interested in the social and cultural aspects of history are referred to this course as an available elective very largely historical in content.

HOME ECONOMICS

HELEN F. MCLAUGHLIN, *Professor*
IRMA G. BOWEN, *Assistant Professor*
HELEN W. LEIGHTON, *Instructor*
MARION STOLWORTHY, *Instructor*
GENEVIEVE K. PHILLIPS, *Instructor*

Major: (a) The completion of one of the prescribed four year vocational courses. A grade of at least 75 must be made in the following subjects, and in enough advanced subjects to make a total of 100 time units. Home Economics *1–a, 52–a, 53–b, 54–c, 84–c, 57–b, 60–c, 70–a, 72–c, 82–a, *106–a, †108–c, †107–b (‡91–a and 92–b, 94–a

* For Teacher Training and Extension Majors only.
† For Teacher Training Majors only.
‡ For Institutional Management Majors only.

or 95–b or 96–c) Agr. § 3–c, 20–a, 21–b, 22–c *26–a, 26.5–a, *27–a.
(b) General Arts Major in Home Economics (Foods, Clothing, Child Care and Training, Home Management). 150 time units to be arranged with the departmental head. A grade of at least 75 must be made in 100 time units.

CLOTHING AND TEXTILES

1–a. Textiles. A study of textile materials and fibers from the viewpoint of the consumer. Prof. Bowen.

Required of Home Economics Teacher Training and Extension Training majors. Elective for other students. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

12–b. History of Costume. A survey of the changes that have taken place in the development of costume with a consideration of the historical and social periods that have been contributing factors. Prof. Bowen.

Elective for all students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

16–a,–b,–c. Elementary Weaving. Making of hand-woven rugs. Mrs. Stolworthy.

Elective for all students. Laboratory by arrangement with instructor. Class limited to 10 each term. 1 unit.

19–a, –b, –c. Advanced Weaving. Plain and pattern weaving on hand looms. Prof. Bowen.

Prerequisite: H. E. 16–a, or b or c. Elective for all students. Laboratory by arrangement with instructor. Class limited to 8 each term. 2–4 units.

20–a, 21–b, 22–c. Clothing Selection. Problems in the selection of suitable and becoming clothing. Each term may be elected as a separate unit. Prof. Bowen.

Required of Home Economics Freshmen. Elective for other students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

23–b. Embroidery. The history of embroidering with attention given to the sources and development of good design and an analysis of the stitchery used in its application to various articles. Prof. Bowen.

Elective for all students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

§ For Extension Majors only.

25–a,–b,–c. Clothing Construction. Students registering for this course choose and carry out projects of special interest to the individual. The work is conducted by means of conferences and supervised laboratory periods. Prof. Bowen.

From 3 to 9 credit units may be elected in any one term depending on the projects selected. Home Economics students in Teacher Training or Extension will be required to register for not less than 3 units but may elect 24 if desired. Elective for other students.

26–a. Millinery. A half term course in the selection and making of hats. Prof. Bowen.

Required of Juniors in Teacher Training and Extension. Elective for other students. Lab., 4 hrs.; prep., 2 hrs.; 3 units.

26.5–a. Pattern Study. A half term course in the use of patterns. Prof. Bowen.

Required of Juniors in Teacher Training and Extension. Elective for other students. Lab., 4 hrs.; prep., 2 hrs.; 3 units.

27–a. Constructive Problems. Discussion of practical ways of solving problems in clothing construction. Prof. Bowen.

Required of Seniors in Teacher Training and Extension. Elective for other students. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

28–a. Children's Clothes. Study of the selection and making of children's clothes. Prof. Bowen.

Elective for all students. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

FOOD AND NUTRITION

52–a. Food Preservation. A study of canning, preserving, pickling and jelly making. Mrs. Stolworthy.

Required of Home Economics Sophomores. Elective for other students. Lec. or rec., 1 hr.; lab., 5 hrs.; prep., 3 hrs.; 9 units.

53–b, 54–c. Foods and Cookery. A study of foods and their healthful and economical preparation and serving. Mrs. Stolworthy.

Required of Home Economics Sophomores. Lec. or rec., 1 hr.; lab., 5 hrs.; prep., 3 hrs.; 9 units.

57–a. Meal Preparation. The selection of foods and their preparation and serving in typical family meals. Prof. McLaughlin.

Prerequisite: Home Economics 54–c or 69–c. Required of Home Economics Seniors. Lec. or rec., 1 hr.; lab., 5 hrs.; 6 units.

58–b. Experimental Cookery. Comparative experimental cookery. Assignments in individual project work. Mrs. Stolworthy.

Prerequisite: Home Economics 54–c. Elective for Home Economics Juniors and Seniors. Lab., 4 hrs.; prep., 2 hrs.; 6 units.

60–c. Dietetics. Application of the principles of human nutrition to varying physiological, social and economic conditions. Prof. McLaughlin.

Prerequisite: Home Economics 54–c. Required of Home Economics Sophomores. Lec. or rec., 3 hrs.; lab., 2 hrs.; prep., 4 hrs.; 9 units.

61–a. Nutrition. A reading course in current literature on nutrition. Prof. McLaughlin.

Required of Institutional Management majors. Elective for other Senior Home Economics students. 1 conference hr.; 5 hrs. outside reading; 6 units.

63–c. Dietetics. Special course given for women students majoring in Physical Education. Mrs. Stolworthy.

Lec. or rec., 2 hrs.; lab., 2 hrs.; prep., 2 hrs.; 6 units.

64–a,–b,–c. Food Selection. A study of the principles of human nutrition. Prof. McLaughlin.

Elective for all students not majoring in Home Economics. Lec. or rec., 2 hrs.; prep., 3 hrs.; 5 units.

65–b. Camp Cookery. A study of the principles of cookery as especially adapted to camp life. Prof. McLaughlin.

Elective for Forestry students and majors in Physical Education for Women. (Given in alternate years for men or women—given in 1931 for men.) Lec. or rec., 1 hr.; lab., 2 hrs.; 3 units. Class limited to 20.

66–c. Elementary Meal Preparation. The preparing and serving of simple meals. Mrs. Stolworthy.

Elective for Liberal Arts girls who have not taken Home Economics 67–a or 68–b. Lec. or rec., 1 hr.; lab., 2 hrs.; prep., 1 hr.; 4 units.

67–a, 68–b, 69–c. Food Selection and Preparation. A general course in the healthful and economical selection and preparation of foods. Mrs. Stolworthy.

Elective for students not majoring in Home Economics. Lec. or rec., 1 hr.; lab., 5 hrs.; prep., 3 hrs.; 9 units.

THE FAMILY

70–a. The Child. A survey of the present status of child study and of the need of the adult for an increased knowledge of the factors involved in child care. Prof. McLaughlin.

Required of Home Economics Juniors. Elective for Liberal Arts Juniors and Seniors. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units. Prerequisite: knowledge of the principles of Psychology.

71–a,–b,–c. Project in Child Development. Conferences and laboratory work with children at the Durham Kindergarten. Mrs. Phillips.

Prerequisite: Education 31–a. Conference, 1 hr.; lab. and outside reading; 6–9 units.

71.5–a, 71.6–b, 71.7–c. Advanced Project in Child Development. Conferences and laboratory work with children at the Durham Kindergarten. Mrs. Phillips.

Prerequisite: Home Economics 71–a, –b, –c. Conference, 1 hr.; lab. and outside reading; 6–9 units.

72–c. The Family. Consideration of the effects of changing society upon home and family life. Prof. McLaughlin.

Required of Home Economics Juniors. Elective for Liberal Arts Juniors and Seniors. Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

HOME MANAGEMENT

82a,–b,–c. Home Management. A study of the organization of the house as a home, and of the principles involved in its care and management. Prof. McLaughlin.

Required of Home Economics Sophomores. Elective for other students. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

83–a. Home Care of the Sick. Emergency treatment of minor injuries and the care of the sick at home. Mrs. Stolworthy.

Lec. or rec., 2 hrs.; lab., 2 hrs.; prep., 2 hrs.; 6 units. (Formerly given as Zoölogy 28–a.)

84–c. House Furnishing. Consideration of historic, artistic, economic and social factors involved in the furnishing of the home. Prof. Bowen.

Required of Home Economics Sophomores. Elective for other students. Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

88–a,–b,–c. Home Management House. Managerial and dietetic problems relating to home and family life worked out by students in residence in the Home Management House.

Prerequisites: Home Economics 54–c, 60–c, and 82–a. Class limited to 12 each term. 88–c required of Home Economics Juniors in Teacher Training and Extension Courses. Elective for other Home Economics Juniors and Seniors. Lec. or rec. and lab.; 12 units.

89–a, –b. Home Management House. Elementary practice in Home Management through 5–6 weeks' residence in the Home Management House.

Elective for all Liberal Arts women students. Permission of department head necessary to take the course. Class limited to 12 each term. 6 units.

INSTITUTIONAL MANAGEMENT

91–a, 92–b. Institutional Management. A study of the organization, equipment, and management of typical institutions and of the buying, planning, preparing, and serving of meals for large groups. Field trips to study equipment and management of institutions of different types are included in the course. Mrs. Leighton.

Prerequisite: Home Economics 54–a, 57–b. Required of Seniors in Institutional Management Course. Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

94–a, 95–b, 96–c. Institutional Practice. Practical experience of different types in the kitchens and serving rooms of the University Commons. Mrs. Leighton.

Prerequisite or parallel: 91–a and 92–b. Required of Seniors in Institutional Management Course. Lab., 8 hrs.; prep., 1 hr.; 9 units.

HOME ECONOMICS EDUCATION

102–a. Vocational Opportunities for Home Economists. A study of the vocational opportunities open to women and girls. Prof. McLaughlin.

Required of Home Economics Freshmen. Elective for other students. Lec. or rec., 2 hrs.; prep., 3 hrs.; 5 units.

103–a, 104–b, 105–c. Project in Home Economics. This course provides opportunity for the working out by the student of some project in home economics that supplements the work in the required courses. Prof. McLaughlin.

Elective for Home Economics Juniors and Seniors. Conf., 1 hr.; prep., 2–5–8 hrs.; 3–6–9 units.

106–a. Home Economics Education. A consideration of the Home Economics Course as presented in the elementary and high school. Prof. McLaughlin.

Required of Seniors in Home Economics Teacher Training Course. Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

107–b. Home Economics Teaching. Supervised cadet teaching in selected high schools in the state. Prof. McLaughlin.

Required of Seniors in Home Economics Teacher Training Course. Nine weeks or more teaching supplemented by conference sessions at the University. Lab., 25 hrs.; prep., 25 hrs.; 50 units.

108–c. Home Economics Education. A continuation of Home Economics 106–a, basing discussions on the experience of students during the teaching of the previous term. Prof. McLaughlin.

Required of Seniors in Home Economics Teacher Training Course. Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

109–a. Demonstration Course. The organization and practical application of demonstration methods in the field of Home Economics. Home Economics Staff.

Elective for Junior and Senior Home Economics Majors. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

HORTICULTURE

GEORGE F. POTTER, *Professor*
J. RAYMOND HEPLER, *Assistant Professor*
L. PHELPS LATIMER, *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 pro-

duction. 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, cultivation and irrigation of the garden. Prof. Hepler.

Required of Sophomores in Agriculture. (Given in the last half of the term.) Lec., 3 hrs.; lab., 2 hrs.; prep., 5 hrs.; 5 units.

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 plants and ventilating greenhouses. 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. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

3–c. Elementary Pomology. A brief consideration of some 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. Prof. Potter.

Required of Sophomores in Agriculture. (Given in the first half of the term.) Lec., 3 hrs.; lab., 2 hrs.; prep., 5 hrs.; 5 units.

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. Prof. Latimer.

Elective for any student. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

5–a. Systematic Survey of Fruits and Vegetables. A study of the more important species of fruits and vegetables and their botanical relationships. Prof. Latimer and Prof. Hepler.

Prerequisite: Bot. 1–a and Hort. 1–c, and 3–c. Required of Seniors in Horticulture. Lec., 2 hrs.; prep., 3 hrs.; 5 units.

6–b. Advanced Pomology. A detailed study of fundamental principles and experimental data and their application and relation to orchard problems such as growth and rest period in fruit plants, water requirements, soil management, pruning, fruit bud formation, fruit setting, pollination, thinning, winter injury, and the quality and keeping period of fruits in storage. Prof. Latimer.

Prerequisite: Horticulture 3–c. Required of Seniors in Horticulture who do not elect Horticulture 17–a. Elective for other students. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

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. Prof. Hepler.

Required of Seniors in Horticulture. Elective for other students. Lec., 3 hrs.; prep., 6 hrs.; 9 units.

7.5–c. Landscape Gardening: Laboratory Design. Practice in laying out and planting home and public grounds. Prof. Hepler.

Recommended elective for all students taking 7–c. Required of Seniors in Horticulture. Lab., 2 hrs.; 2 units.

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. Lec., 1 hr.; lab., 2 hrs.; prep., 2 hrs.; 5 units.

9.5–c. Floriculture: The Outdoor Flower Garden. A study of flowering annuals, herbaceous perennials, bulbs and bedding plants, with instruction in their propagation, culture and use in the beautifying of the home grounds. Lectures, laboratory, and field trips. Mr. Macfarlane.

Elective for any student. Lec., 1 hr.; lab., 2 hrs.; prep., 2 hrs.; 5 units.

10–b. Evolution and Improvement of Plants. The application of the principles of genetics to agricultural plant breeding. Hybridization and selection are studied as means of improving horticultural varieties of plants. Prof. Potter.

Prerequisite, Zoöl. 32–a. Required of Juniors and Seniors in Horticulture. Elective for other students. Lec., 2 hrs.; prep., 3 hrs.; 5 units. (Given in alternate years beginning 1931–32.)

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. Prof. Hepler.

Elective for all students. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

12–a, 12.5–b. Horticultural Seminar. A review of the recent horticultural literature and methods of investigational work. Each student is required to prepare and present a term paper on some horticultural topic. Prof. Potter and department staff.

Required of Seniors in Horticulture. Other students must obtain permission to enter. Lec., 2 hrs.; prep., 2 hrs.; 4 units.

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. Prof. Hepler.

Elective for women students. Lec., 2 hrs.; lab., 2 hrs.; prep., 2 hrs.; 6 units.

14–a, 15–b, 16–c. Advanced Horticulture. Subject matter in any phase of horticulture (with laboratory practice if desirable) to meet the needs of special students or groups of students may be taken by arrangement with the head of the department. Prof. Potter and staff.

Elective for Juniors and Seniors. Students must obtain permission to register from the head of the department. Hours and units to be arranged.

17–a. Commercial Vegetable Gardening. This subject deals with the management of commercial vegetable gardens. Special attention is given to storing, packing of vegetables for market, their display and judging. Prof. Hepler.

Prerequisite: Horticulture 1–c. Elective for all students. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

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. Prof. Hepler.

Elective for any student. Lab., 5 hrs.; 5 units.

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 assembling and use of hives and hive fittings, and practice in handling and manipulating bees. Prof. Hepler.

Elective for any student. Lec., 1 hr.; lab., 2 hrs.; prep., 2 hrs.; 5 units.

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. Prof. Hepler.

Elective for any student. Lec., 1 hr.; lab., 2 hrs.; prep., 2 hrs.; 5 units.

21–c. Supervised Horticultural Experience. Supervised work in orchard, garden, or greenhouses, April 1st to September 1st. Weekly reports are required. Prof. Potter.

Required of all Juniors in the 3rd term of the Junior year. Lab., 50 units.

NOTE: Students who have previously had this experience may substitute 50 elective units for this required subject.

22–a. Fruit Judging. A study of the tree, fruit, leaf characters and commercial characteristics of the leading varieties of fruits with special reference to those important in New England. The student is required to become proficient in recognizing the varieties on sight and in judging exhibition fruit. Prof. Latimer.

Elective for any student. Lab., 6 hrs.; prep., 1 hr.; 7 units.

23–b. Commercial Pomology. The economic aspects of managing an orchard and handling of fruit crops, technicalities of fruit grading, agencies used and problems met in storing, transporting and merchandising the crop, with laboratory practice in actual packing house work. Prof. Potter.

Prerequisite Hort. 3–c. Elective for all students. Lec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

For subjects primarily for graduate students, see Catalog of the Graduate School.

LANGUAGES

J. Herbert Marceau, *Associate Professor*
John Stephen Walsh, *Associate Professor*
Rudolf L. Hering, *Assistant Professor*
Julio Berzunza, *Assistant Professor*
Paul P. Grigaut, *Instructor*
Frederic K. Arnold, *Instructor*
John A. Floyd, *Instructor*
Anna D. Murphy, *Instructor*

Major: 150 time units of departmental and related departmental subjects, exclusive of elementary subjects.

Graduate Work: For subjects primarily for graduate study, see Catalog of the Graduate School.

The subjects 1–a, 2–b, 3–c in French, German and Spanish constitute a year's subject, and must be taken in succession in the same year in order to complete lower division requirements. A student who fails in 1–a, or 2–b in one of these languages should repeat the work from the beginning.

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 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, 13–a, 14–b, 15–c; Spanish 13–a, 14–b, 15–c.

FRENCH

Prof. Marceau, Mr. Grigaut, Mr. Floyd and Mr. Arnold

1–a, 2–b, 3–c. Elementary French. Elements of French grammar, reading of simple prose, oral practice, dictation.

Rec., 3 hrs.; prep., 6 hrs.; 9 units.

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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

7–a, 8–b, 9–c. General View of French Literature. Prose and poetry of some of the more important writers with lectures and outside reading.

Prerequisite: French 6–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

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 lectures and outside reading.

Prerequisite: French 12–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

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 undergraduates, and to graduate students. Permission of the instructor is required before enrollment.

22–a. Review Course for Teachers. Review of elementary French grammar and practice in the presentation and arrangement of secondary school work in French. This course is open only to those students who have completed French 9–c and who are following a teacher training program.

Rec., 3 hrs.; prep., 7 hrs.; 10 units.

40–a, 41–b, 42–c. Lecture Course in French. On French literature, history, art, and civilization with quizzes, written and oral.

Lec., 3 hrs.; prep., 3 hrs.; 10 units.

51–a, 52–b, 53–c. Honors Course in French. (This is a year course. It cannot be taken by terms.) The work of this subject is arranged so that the students may gain a knowledge as comprehensive as possible of French language, literature, history, and civilization. At the weekly conference hours the students give reports in French and all discussion is carried on in French.

Permission to pursue this subject depends upon the student's record in subjects taken in French and in any other language or languages during the first three years, and on the quality of his work in general.

Credit equal to one year's work.

GERMAN

PROF. HERING

1–a, 2–b, 3–c. Elementary German. Elements of German grammar, reading of simple prose, oral practice, dictation and composition.

Rec., 3 hrs.; prep., 6 hrs.; 9 units.

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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

4.5–a, 5.5–b, 6.5–c. Scientific German. Limited to students of Science, Chemistry, Pre-Medical, etc.

Prerequisite: German 3–c or equivalent. Rec., 3 hrs.; prep., 5½ hrs.; 8½ units. (Given in 1928–29 as 5–b and 6–c.)

7–a, 8–b, 9–c. Schiller, Modern Drama and Modern Prose. Two dramas of Schiller, selections from Hauptmann, Sudermann, Hofmannsthal, Hart and other modern writers.

Prerequisite: German 6–c or equivalent. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

10–a, 11–b, 12–c. German Literature of the Eigtheenth and Nineteenth Centuries. Selections from the works of Lessing, Goethe, Schiller, Heine; Ballads and Lyrics.

Prerequisite: German 6–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

13–a, 14–b, 15–c. Contemporary German Literature. Sudermann, Hauptmann and other authors.

Prerequisite: German 6–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

16–a, 17–b. 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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

18–c. History of German Literature. Lectures in German, assigned readings and quizzes.

Lec., 3 hrs.; prep., 7 hrs.; 10 units.

GREEK

PROF. WALSH

1–a, 2–b, 3–c. Elementary Greek. Grammar, composition, translation. This course may be elected only by students who have completed Latin 1–a, 2–b, 3–c, and only with the consent of the instructor.

Rec., 3 hrs.; prep., 7 hrs.; 10 units.

LATIN

PROF. WALSH

1–a. Selections from Latin poets. 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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

2–b, 3–c. Works of Horace, Catullus and other poets. Translation, lectures, and study of Latin influence on English poetry.

Prerequisite: 1–a. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

4–a. Plautus. Study of ancient comedy; lectures on the literature and life of Rome.

Prerequisite: Latin 3–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

5–b. Terence: Andria, and Phormio. Comparison with the comedies of Plautus.

Rec., 3 hrs.; prep., 7 hrs.; 10 units.

6–c. Pliny's Letters. Careful study of the historical background of the letters. Translation, lectures.

Rec., 3 hrs.; prep., 7 hrs.; 10 units.

7–a. Horace, Satires and Epistles. Translation and lectures. Study of Roman society as portrayed in the literature of the time.

Prerequisite: 6–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units. (Not given 1930–31.)

8–b. Martial, Epigrams. Translation and lectures. Study of Roman society as portrayed in the literature of the time.

Rec., 3 hrs.; prep., 7 hrs.; 10 units. (Not given 1930–31.)

9–c. Cicero. Tusculan Disputations. Translation and lectures. Study of ancient views on philosophy, religion, and natural sciences.

Rec., 3 hrs.; prep., 7 hrs.; 10 units. (Not given in 1930–31.)

10–a, 11–b, 12–c. Literature and History. This subject offers 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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

13–a, 14–b, 15–c. Latin Composition. Translation of English narrative, beginning with the fundamentals of grammar and progressing to a study of prose style and effective idiomatic expression.

This subject may be taken in two successive years. It is open to those who have taken or are taking another course in college Latin and is most necessary for prospective teachers of Latin.

Rec., 3 hrs.; prep., 7 hrs.; 10 units.

SPANISH

PROF. BERZUNZA

1–a, 2–b, 3–c. Elementary Spanish. Elements of Spanish grammar, reading of simple prose, oral practice, dictation.

Rec., 3 hrs.; prep., 6 hrs.; 9 units.

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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

7–a, 8–b, 9–c. The Spanish Novel. Representative novelists of the modern period such as Fernán Caballero, Valera, Pérez Galdós, Pardo Bazán and Placio Valdés form the subject of study. Collateral reading, reports, and lectures on the history of the novel. In the Spring term, Cervantes will be studied.

Prerequisite: Spanish 6–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

10–a, 11–b, 12–c. Spanish Drama. Dramas of Lope de Vega, Calderón, Echegaray, the Brothers Alvarez Quintero, Benavente, and others. This course is carried on as far as possible in Spanish.

Prerequisite: Spanish 9–c. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

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. Rec., 3 hrs.; prep., 7 hrs.; 10 units.

LIBRARY SCIENCE

WILLIAM W. SHIRLEY, *Librarian*

Lectures on the Library followed by demonstrations of library methods and tools and individual problems are given to members of the Freshman Class during 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. Lec. or rec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units. (Not given in 1930–31.)

MATHEMATICS

HERMON L. SLOBIN, *Professor*
WALTER E. WILBUR, *Assistant Professor*
MARVIN R. SOLT, *Assistant Professor*
EDWARD H. WELLS, *Assistant Professor*
BRADFORD F. KIMBALL, *Assistant Professor*
LOUISE S. WOODMAN, *Assistant*
CHARLES A. SEWELL, *Assistant*

Major: 150 time units: 90 time units as follows: 1–a, 12½ units; 2–b, 12½ units; 3–c, 12½ units; 4–a, 7½ units; 5–b, 7½ units; 6–c, 7½ units, and 30 time units of Mathematics selected subject to the approval of the head of the Department of Mathematics, and 60 time units in related departments, subject to the approval of the head of the Department of Mathematics. Students preparing to teach secondary school mathematics should include 14–b, 15–c, 16–a, 17–b and 18–c.

1–a, 2–b, 3–c. First Year Mathematics. This constitutes a course of algebra, trigonometry and analytic geometry.

Prerequisite: See requirements of Mathematics for admission to College of Technology. Rec., 5 hrs.; prep., 7½ hrs., 12½ units.

4–a, 5–b, 6–c. Calculus. The fundamental principles of the infinitesimal calculus, differential and integral, with applications to geometry; introduction to sequences and series. Required of Arts majors in Mathematics.

Prerequisite: Mathematics 3–c. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

7–a, –b, 8–b, –c, 9–c. Calculus. Applications of differentiation and integration; special methods of integration; the definite integral, applications of the definite integral to geometry, physics and mechanics; introduction to sequences and series.

Prerequisite: Mathematics 3–c. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

10–a, 11–b, 12–c. Advanced Calculus and an Introduction to Differential Equations. Prof. Slobin.

Prerequisite: Mathematics 9–c. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

14–b, 15–c. The History of Mathematics. This course is designed especially for those preparing to teach mathematics in the high school. It aims to given an historical background and an appreciation of the development of various fields of mathematics. Prof. Wells.

Prerequisite: Mathematics 1–a, 2–b, 3–c. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

16–a, 17–b, 18–c. Secondary School Mathematics and Advanced Algebra. A study of secondary school mathematics offered especially to seniors who expect to teach mathematics in the high schools. The state requirements in the several subjects, and topics in advanced algebra will be studied. Prof. Wilbur.

Prerequisites: Mathematics 1–a, 2–b, 3–c. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

19–b. Solid Geometry. Elements of solid geometry.

Prerequisites: High School Algebra and Plane Geometry. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

21–a, 22–b. Mathematics for Students of Agriculture. Elements of algebra, geometry and trigonometry.

Rec., 4 hrs.; prep., 4 hrs.; 8 units.

25–c. Mathematics of Finance. A study of simple and compound interest, discount, annuities, depreciation, evaluation of securities, building and loan associations, and the elements of life insurance.

Prerequisite: Mathematics 1–a. Rec., 3 hrs.; prep., 3 hrs.; 6 units.

101–a, 102–b, 103–c. Elementary Mathematical Analysis. This course is designed to prepare students for the study of statistics and mathematics of finance. It uses both analytical and graphical methods. The subjects studied are some of the fundamental functions, logarithmic computations, the simpler elements of least squares, etc. Emphasis is placed upon finding mathematical laws or formulas from empirical data.

Prerequisites: High School Algebra and Plane Geometry. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

104–c. Mathematics of Finance. A study of simple and compound interest, discount, annuities, depreciation, evaluation of securities, building and loan associations, and the elements of life insurance.

Prerequisite: Mathematics 102–b or 1–a. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

120–c. Astronomy. A brief descriptive course. The earth as an astronomical body; the sun and the solar system; the constellations; the stars. Prof. Solt.

Rec., 3 hrs.; prep., 6 hrs.; 9 units.

121–c. Astronomy. A brief descriptive course, similar to 120–c, but less extensive. Lectures and text. Prof. Solt.

Prerequisite: Civil Engineering 2–a. Rec., 2 hrs.; prep., 1½ hrs.; 3½ units.

NOTE.—For Advanced Courses in Mathematics see Catalog of the Graduate School.

MECHANICAL ENGINEERING

GEORGE W. CASE, *Professor*
EDWARD L. GETCHELL, *Associate Professor*
THOMAS J. LATON, *Assistant Professor*
E. T. DONOVAN, *Assistant Professor*
E. HOWARD STOLWORTHY, *Assistant Professor*
LYMAN J. BATCHELDER, *Instructor*
JOHN C. TONKIN, *Instructor*
ELIAS O'CONNELL, *Instructor*

1–a. Engineering Drawing. The fundamentals of engineering drawing, including free-hand lettering, use of drawing instruments, the solution of problems in orthographic projection and a brief study of isometric drawing. Prof. Laton and Prof. Stolworthy.

Required of all Freshmen in Technology. Lab., 6 hrs.; 6 units.

2–b, 3–c. Engineering Drawing. An application of the principles of descriptive geometry to the solution of problems in points, lines, planes and solids. Prof. Laton and Prof. Stolworthy.

Prerequisite: Mechanical Engineering 1–a. Required of Freshmen in Mechanical, Electrical and Civil Engineering. Lab., 5 hrs.; prep., 1 hr.; 6 units.

4–a, –c, 5–b. Machine Drawing. A further application of the principles of orthographic projection to the drawing of machine parts. Various pictorial systems are studied as an aid in sketching. Problems in intersections and developments as applied to sheet metal work are taken up. Commercial drafting room methods are studied and employed in sketching machine parts, drawing from sketches, making of tracings and blueprints. Prof. Laton.

Prerequisite: Mechanical Engineering 1–a. Required of Sophomores in Mechanical and Electrical Engineering. 4–c required of Juniors in Industrial Engineering. Lab., 5 hrs.; 5 units.

7–c. Agricultural Drawing. Instruction in the subject includes drafting room exercises in free-hand lettering, use of drawing instruments, a brief study of orthographic and isometric projection, together with the drawings of plans and elevations of simple form structures. Prof. Stolworthy.

Required of Sophomores in Forestry. Elective for other Agricultural students. Lab., 5 hrs.; 5 units.

10–a, –b. Wood Work. Instruction in the care and use of wood working tools and machinery, saw filing, plain cabinet making. Mr. Batchelder.

For Freshmen in Technology. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

11–b, –c. Wood Work. Cabinet making and finishing, the use of stain, filler, shellac, and varnish as used in cabinet finishing and interior wood work. Mr. Batchelder.

Elective for Liberal Arts and Teacher Training students. Lab., 5 hrs.; 5 units.

12–c. Wood Shop. Carpentry and building, including the construction of buildings, a study of the steel square and its use in the laying out of rafters, stair stringers, trusses, etc. Mr. Batchelder.

Required of Seniors in Architecture. Lab., 2½ hrs.; 2½ units.

13–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; use of steel square; laying out framing; care of lumber on the farm. Mr. Batchelder.

Elective for Sophomores in Agriculture. Lab., 5 hrs.; 5 units.

14–b. Wood Shop. Practice teaching. Exercises, under the supervision of the instructor, in teaching manual training in the wood shop. Mr. Batchelder.

For Seniors in the Industrial Teacher Training Course. Lab., 5 hrs.; 5 units.

15–c. Wood Work. Advanced pattern making, involving split and loose piece patterns, core boxes, etc. Mr. Batchelder.

For Seniors in Mechanical and Electrical Engineering. Lab., 5 hrs.; 5 units.

16–a, –b. 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. O'Connell.

Freshmen in the College of Technology. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.

17–b. Forging. This is a study of the forging of iron and steel; and is designed to teach the operations of drawing, welding, upsetting, 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. O'Connell.

Required of Juniors in Agricultural Teacher Training Course. Lab., 7½ hrs.; 7½ units.

18–a. Forging. Advanced work in forging, welding, tempering, case hardening, tool dressing. Mr. O'Connell.

Prerequisite: Mechanical Engineering 16. For Seniors in Industrial Teacher Training Course. Lab., 5 hrs.; 5 units.

20–a, 21–b. Machine Work. Exercises in bench work. Chipping, filing, and scraping, and the laying out of work from drawings. Practice in operating machine tools and simple lathe work. Mr. Tonkin.

Required of Mechanical, Electrical and Industrial Engineering Sophomores. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

24–a, 25–b. Machine Work. Advanced work on the lathe, milling machine, planers, shaper, and grinding machines, and the manufacture of some machine, using more advanced methods and special tools. Mr. Tonkin.

For Seniors in Industrial Teacher Training Course. Lab. 5 hrs.; 5 units.

26–a, –b, –c. Machine Work. Advanced machine work, time study production methods, and shop management. Mr. Tonkin.

Prerequisite: Mechanical Engineering 25–b. Lab., 5 hrs.; 5 units.

30–b. Machine Work. An elementary study of the operation of the principal machines and tools suited to the chemist's needs. Mr. Tonkin.

Required of Freshmen in Chemical Engineering. Lab., 5 hrs.; 5 units.

35–a. Farm Shop. Forge and machine shop work in the repair of gas engines and the equipment of modern farm buildings, and the making, tempering and repair of farm tools.

Limited to Agricultural Teacher Training Juniors. Rec., 1 hr.; prep., 1 hr.; lab., 5 hrs.; 7 units.

36–c. Farm Shop. Design of farm buildings, the identification and selection of lumber, and the use and care of carpenter tools.

Limited to Agricultural Teacher Training Juniors. Rec., 1 hr.; prep., 1 hr.; lab., 5 hrs.; 7 units.

40–a, 41–b, 42–c. Mechanical Laboratory. This subject will give the student instruction in the elements of power plant work, operation of machines for testing materials, general survey of laboratory work and method of conducting tests. In the spring term a study is made of various methods of admitting steam to reciprocating engines. Design of plain slide valve and riding cut-off valve by means of Bilgram and Zeuner diagrams. Setting of valves; governors; reversing gears for locomotives and design of Corliss valve. Prof. Getchell.

Required of Sophomores in Mechanical Engineering. Lab., 4 hrs.; 4 units.

43–a, 44–b, 45–c. Mechanics. A study of forces and moment of forces; determination of stresses in trusses and cranes: centroids and center of gravity; rectilinear and curvilinear motion; translation and rotation of bodies; work, power and energy. The application of the principles of Mechanics to the determination of stress and strain in rigid bodies. Thin walled cylinders; riveted joints; torsion; transverse loading of beams; deflection in beams of all kinds; study of columns and compound stresses. Prof. Getchell.

Prerequisite: Mathematics 8–b. Required of Juniors in Mechanical, Electrical and Civil Engineering. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

46–a, 47–b, 48–c. Mechanics. Forces; composition and resolution of forces, center of gravity; stresses in cranes framed and structures; moment of inertia of areas and solids; motion of translation and rotation; work, power and energy; strength of materials; riveted joints; sheer and moment diagrams; study of beams of all kinds as regards strength and deflection; torsion and columns. Prof. Getchell.

Required of Juniors in Industrial and Chemical Engineering. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

49–a, 50–b, 51–c. Mechanics. Principles of Mechanics as applied to architectural work. Winter and spring laboratories to consist of the testing of cement and strength of materials. Study of methods of obtaining strongest and densest mixtures for concrete and making of specimens for later testing. Testing of steels in tension; column tests;

shear tests; transverse tests on wooden and concrete beams, etc. Prof. Getchell.

Required of all Junior Architects. Rec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

52–a. Testing Materials Laboratory. Testing of cements and concrete aggregates. Study of methods of obtaining strongest and densest mixtures for concrete and making of specimens for later testing. Prof. Getchell.

Required of all Junior Civil Engineers. Lab., 2½ hrs.; 2½ units.

53–c. Testing Materials Laboratory. Tension, torsion and sheer tests of steel; compression tests; transverse tests of wooden and concrete beams; column tests. Prof. Getchell.

Required of Junior Mechanical, Electrical and Civil Engineers. Lab., 5 hrs.; 5 units.

54–a. Manufacture of Iron and Steel. Study of the location of ores and other raw materials entering into the manufacture of pig iron, of the blast furnace and conversion of pig iron into wrought iron, Bessemer and open hearth steels and of the manufacture of steel by electrical methods. Heat treatment of steel to produce the various degrees of hardness, strength and ductility. Prof. Getchell.

Required of Senior Mechanical and Industrial Engineers. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

55–a. Heat Treatment Laboratory. Study of the effects of various heat treatments on different grades of steel. Testing of the above under different conditions. Microscopic identification of steels, etc. Prof. Getchell.

Required of Senior Mechanical Engineers. Lab., 5 hrs.; 5 units.

56–c. Kinematics. A study of motion in machine construction; belts and other flexible connectors; gears and gear teeth; wheels in trains; epicyclic trains; cams; instantaneous centers; linkwork, velocity and acceleration diagrams. Prof. Laton.

Required of Sophomore Mechanical and Electrical Engineers. Rec., 1 hr.; lab., 5 hrs.; prep., 1 hr.; 7 units.

58–a, 59–b, 60–c. Machine Design. The application of the principle of Mechanics to the design of machine elements. This work to be taken

up with the idea of manufacturing the parts in the most economical manner in the shops. General principles of design will be followed rather than attempting to develop any particular system of procedure. Prof. Laton.

Prerequisite: Mechanical Engineering 45–c. Required of Senior Mechanical Engineers. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

61–a, 62–b, 63–c. Heat Power Engineering. A general study of power generation adaptable to the needs of Civil Engineers. This subject will involve only enough fundamental theory to enable the students to grasp a working knowledge of such power mechanism as they may use after graduation. Prof. Donovan.

Prerequisites: Mathematics 8–b and Mechanical Engineering 45–c. Required of Civil Engineering Seniors. Rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

64–a, 65–b. Thermodynamics. A study of the fundamental laws of thermodynamics and their relation to the operation of mechanisms using gases and vapors as their working substances. Prof. Donovan.

Prerequisite: Mathematics 8–b. Required of Junior Mechanical, Industrial and Electrical Engineers. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

65.5–c. Thermodynamics. A further study of the laws of thermodynamics, and their engineering application. Prof. Donovan.

Prerequisite: Mechanical Engineering 65–b. Required of Junior Mechanical Engineers. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

66–b, 67–c. Thermodynamics. The laws of gases and vapors and their application to power plant apparatus. Prof. Donovan.

Prerequisite: Mathematics 8–b. Required of Senior Chemical Engineers. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

68–a, 69–b. Mechanical Laboratory. A study of the apparatus and methods for testing power plant operation and equipment. Prof. Donovan.

Prerequisite: Enrollment in Mechanical Engineering 65–b in winter term. Required of Junior Electrical Engineers. Lab., 5 hrs.; 5 units.

68.5–a, 69.5–b. Mechanical Laboratory. Methods of investigating operation and testing of power plant equipment. Prof. Donovan.

Prerequisite: Mechanical Engineering 42–c, and enrollment in 65–b in winter term. Required of Junior Mechanical Engineers. Lab., 5 hrs.; 5 units.

70–a, 71–b. Mechanical Laboratory. Testing of steam and gas power plant equipment. Prof. Donovan.

Prerequisite: Mechanical Engineering 65–b. Required of Senior Industrial Engineers. Lab., 5 hrs.; prep., 2½ hrs.; 7½ units.

72–b. Mechanical Laboratory. Testing of steam and gas engines in accordance with A. S. M. E. power test codes. Prof. Donovan.

Prerequisites: Mechanical Engineering 65–b and 69–b. Required of Senior Mechanical Engineers. Lab., 5 hrs; prep., 2½ hrs.; 7½ units.

73–c. Mechanical Laboratory. Testing of steam and gas power equipment. Prof. Donovan.

Prerequisites: Mechanical Engineering 71–b or 72–b. Required of Senior Mechanical and Industrial Engineers.

74–a, 75–b. Power Plants. A study of the steam generating power plant dealing with its equipment and costs. Prof. Donovan.

Prerequisites: Mechanical Engineering 65–b or 67–c. Required of Senior Mechanical, Electrical and Industrial Engineers. Rec., 2 hrs.; prep., 3 hrs.; 5 units.

75.5–c. Power Plants. A continuation of Power Plants 75–b. Professor Donovan.

Prerequisite: Mechanical Engineering 75–b. Required of Senior Mechanical, Electrical and Industrial Engineers. Lab., 5 hrs.; 5 units.

76–a, 77–b, 78–c. Automotive Engineering. A study of the general construction and operation of motor vehicles, particularly the engine. Prof. Stolworthy.

Prerequisite: Mechanical Engineering 45–c and 65.5–c. Required of Senior Mechanical Engineers. Rec., 2 hrs.; lab., 2½ hrs.; prep., 3 hrs.; 7½ units.

79–b, –c. Heating and Ventilating. A study of the heat losses of buildings, and the design of heating and ventilating systems for residences, factories, etc. Prof. Stolworthy.

Required of Seniors in Mechanical Engineering and Architectural Construction. Rec., 1 hr.; lab., 5 hrs.; prep., 1½ hrs.; 7½ units.

82–a, 83–b, 84–c, 85–a, 86–b, 87–c. Student Branch of American Society of Mechanical Engineering. An organization of Junior and Senior students in Mechanical and Industrial Engineering. The subject consists of preparation and presentation of addresses on mechanical engineering topics by members and in which the instructor present criticises the work from the point of view of delivery, subject matter and terms used.

Required of Juniors and Seniors in Mechanical Engineering. Rec., 1 hr.; prep., ½ hr.; 1½ units.

89–a, 90–b, 91–c. Thesis. The thesis embodies research or commercial investigation. Equal emphasis is placed upon composition and accuracy in subject matter.

Required of Senior Mechanical and Industrial Engineers. Rec. 1 hr.; prep., 4 hrs.; 5 units.

100–s, 101–c, 102–s, 103–s. Coöperative Work. Industrial Engineering students spend four terms amounting approximately to one year in the employ of industrial concerns of the State of New Hampshire, under the general supervision of a member of the Faculty. They receive the prevailing rates of pay for this employment. Reports on the work they have done are required to be submitted early in the term following the period of employment.

Required of Freshman, Sophomore and Junior Industrial Engineers.

104–b. Personnel Administration. A study of the history, developments and methods of solution of the problems connected with the human side of production management. Prof. Case.

Required of Senior Mechanical and Industrial and Junior Civil Engineers. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

105–a, 106–b, 107–c. Industrial Problems. Typical problem of production in which the Shops of the College are used as a manufacturing unit. This problem will include all steps of manufacture from the shop drawings to the final assembling and testing. Prof. Laton and Assistants.

Required of Senior Industrial Engineers. Lab., 5 hrs.; 5 units.

108–c. Industrial Problems. Plant and sales organization and study of market for article manufactured during the junior year. Prof. Case.

Required of Senior Industrial Engineers. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

109–a. Industrial Management. This subject deals in a broad way with the principles of personnel organization for manufacture, time and motion studies, planning and production control methods, plant location and arrangement and other similar problems in the field of management. Prof. Case

Required of Senior Mechanical and Junior Industrial Engineers and elective for Seniors in Business Fundamentals. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

110–b, 111–c. Industrial Management. A continuation of 109–a, in which the various topics are studied in greater detail and from a more technical point of view. Prof. Case.

Required of Junior Industrial Engineers and not elective for other students. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

112–a. Materials Handling. Modern methods of conveying and storing gases, liquids and solids. Prof. Case.

Prerequisite: C. E. 44–c. Required of Senior Mechanical and Industrial Engineers. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

METEOROLOGY

CHARLES H. PETTEE, *Professor*
HARRY M. RUGG, *Instructor*

1–a. Meteorology. Recitations and lectures on wind systems, precipitation, humidity, laws of storms and tornadoes, and methods of prediction of atmospheric changes. Mr. Rugg.

Prerequisite: Physics. Required of Juniors in Forestry and those Juniors in Civil Engineering who do not enroll in Mil. Sci. 24–a. Elective for others. Rec., 3 hrs.; prep., 4½ hrs.; 7½ units.

MILITARY SCIENCE

MAJOR HUGO E. PITZ, *Coast Artillery Corps, Professor*
CAPTAIN JAMES H. DAY, *Infantry, Assistant Professor*
CAPTAIN NORMAN P. WILLIAMS, *Infantry, Assistant Professor*
FIRST LIEUTENANT GEORGE B. ANDERSON, *Coast Artillery Corps, Assistant Professor*
FIRST LIEUTENANT JAMES F. MCGRAW, *Infantry, Assistant Professor*
SERGEANT FRED W. WOOD, *Coast Artillery Corps, Assistant*
SERGEANT FRED H. BROWN, *Infantry, 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.

Students enrolled in the Colleges of Liberal Arts and Agriculture will be assigned to the Infantry Course, and students enrolled in the College of Technology will be assigned to the Coast Artillery Course. 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, gun-

nery, 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 includes the following subjects: Command and Leadership; Scouting and Patrolling; Musketry; Map Reading and Sketching; Military Law; Military History; the Combat Principles of the various organizations composing the war strength infantry battalion; and, in addition, a study of the infantry weapons: the caliber .30 service rifle, the .45 caliber automatic pistol; the Browning automatic rifle; the Browning machine gun; the 37-millimeter gun and the 3-inch mortar. Physics, chemistry, history, mathematics and psychology have many practical applications in the Infantry Course.

Equipment furnished by the War Department includes machine guns, howitzer weapons, automatic rifles, service rifles, sketching cases, and field equipment. The entire R. O. T. C. is armed with the 1903 (Springfield) caliber .30 rifle, the same rifle used by the U. S. Army.

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 Breeches, wool, O. D.	1 Cap, overseas
2 Collar Ornaments	1 Shirt, wool, O. D.	1 Belt
1 Coat, wool, O. D.	1 Pair Leggings	2 R. O. T. C. insignia

Advanced Course.—The students who are selected for the Advanced Course and who devote the prescribed time to this course, and attend such summer training camps as may be prescribed by the Secretary of

* A deposit of $15 is required of each student having military equipment in his possession, whether registered for Military Science or not. 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.

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 1929–30 this was 30 cents per day, totalling about $178 for the two 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 college is elaborated upon and special attention is paid to 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 are 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 allots two entire days to the Military Department at which time the units engage in tactical exercises, ceremonies and competitive drills.

Organization.—The unit is organized into a regiment consisting of one battalion, three companies, of infantry and one battalion, three batteries, of Coast Artillery. Student officers, selected from the senior

class by the Professor of Military Science and Tactics, with the approval of the President, are designated for field, staff and company officers not later than the opening of the spring term.

MILITARY SCIENCE COURSE

First Year Basic, Infantry

1–a. Command and Leadership. Physical drill; military courtesy; individual, squad, platoon and company close and extended order drill. Students perform the duties of privates in the infantry battalion for drills, ceremonies and field problems. Lectures and practical work.

No prerequisites. Required of Freshmen. Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

2–b. Rifle Marksmanship. Theoretical and practical instruction in all the phases of rifle marksmanship, including sighting and aiming, positions, trigger squeeze, rapid fire, use of scorebook, nomenclature and care of the rifle; gallery practice.

Military Hygiene and First Aid. Lectures and practical instruction in personal and troop hygiene. Demonstration of and practical instruction in emergency treatment of wounds and injuries.

Required of Freshmen. Rec., 3 hrs.; prep., 2 hrs.; 5 units.

3–c. Command and Leadership. A continuation of 1–a.

Required of Freshmen. Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

Second Year Basic, Infantry

4–a. Scouting and Patrolling. Individual scouting: use of cover, crossing of obstacles, map reading, operation of compass, messages. The duties of platoon scouts. Observation and sniping posts. The conduct of day and night patrols. Map and terrain problems.

Command and Leadership. Squad, platoon and company close and extended order drill. Students perform the duties of corporals in the infantry battalion for drills, ceremonies and field problems.

Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

5–b. Infantry Weapons (Automatic Rifle). Nomenclature and operation of the Browning automatic rifle; marksmanship; tactical uses of the weapon.

Combat Principles. Theoretical and practical instruction in the conduct of a rifle squad in the field. Practical instruction on varied ground with a view to training the student to lead a squad in attack and defense and on security missions.

Rec., 3 hrs.; prep., 2 hrs.; 5 units.

6–c. Musketry. Includes: range estimation, target designation, the effect of fire, fire discipline, and fire control. Lectures; map and terrain problems.

Infantry Weapons (Automatic Rifle). Firing on the 1000-inch range.

Command and Leadership. A continuation of 4–a.

Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

First Year Advanced, Infantry.

7–a. Military Sketching. Practical work in sketching and map reading.

37-millimeter Gun and 3-inch Trench Mortar. Instruction covers determination of fire data, means of fire control, fire orders, field stripping, and assembling, going into action and out of action.

Command and Leadership. Theoretical and practical instruction in the duties of officers and non-commissioned officers of infantry. Students act as sergeants for drills, ceremonies and field problems.

Prerequisites: 1–a, 2–b, 3–c, 4–a, 5–b, 6–c. Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

8–b. Combat Principles. Tactical principles; estimate of the situation; field orders; tactics of the rifle squad and the rifle section.

Infantry Weapons (Machine Guns). The nomenclature and operation of the caliber .30 Browning machine gun; marksmanship; direct and indirect laying; preparation of battery charts.

Rec., 5 hrs.; prep., 3 hrs.; 8 units.

9–c. Command and Leadership. A continuation of 7–a.

Infantry Weapons. Gun drill; range firing with the Browning machine gun on the 1000-inch range.

Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

Second Year Advanced, Infantry

10–a. Combat Principles. Tactics of the rifle platoon, company and battalion; functioning of the battalion staff; map and terrain problems.

Command and Leadership. Students perform the duties of officers in the cadet regiment. Theoretical and practical instruction in platoon, company and battalion drill, and ceremonies.

Prerequisites: First Year Advanced. Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

11–b. Military History. Lectures, and study of American military history and policy from the Revolution to the World War; study of the National Defense Act of 1920.

Administration. Lectures and problems covering the administration of a rifle company.

Military Law. Lectures on the American system of military law: summary, special and general courtsmartial; preparation of charges; the articles of war.

Military Field Engineering. Problems in the intrenching of the rifle squad, section, platoon, and company; the building of obstacles.

Rec., 5 hrs.; prep., 3 hrs.; 8 units.

12–c. Combat Principles. Field problems involving the rifle company and the infantry battalion.

Command and Leadership. Continuation of 10–a.

Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

First Year Basic, Coast Artillery

18–a. Drill and Command. Military courtesy and discipline. The National Defense Act and the R. O. T. C.

Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

19–b. Instruction in 2nd Class Gunners' Work for C. A. C. Ammunition, cordage, telephones, service of the piece, nomenclature, care and adjustment of the 75 mm. anti-aircraft guns, and rifle marksmanship.

Rec., 3 hrs.; prep., 2 hrs.; 5 units.

20–c. Service of the Piece, Nomenclature, Care and Adjustment of the 155-mm. Gun. Drill and command. Ceremonies for the battalion and regiment. Military hygiene and first aid.

Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

Second Year Basic, Coast Artillery

21–a. Fire Control Instruments. Range section duties for seacoast, mobile, and anti-aircraft artillery. Drill and command.

Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

22–b. Range Section Duties. Indication and identification of targets (war ships and aircraft.)

Rec., 3 hrs.; prep., 2 hrs.; 5 units.

23–c. Drill and Command. Each student is given opportunity to drill the platoon. Ceremonies. Aiming and laying of guns and mortars. Definitions, Coast Artillery.

Rec., 2 hrs.; drill, 2 hrs.; prep., 1 hr.; 5 units.

First Year Advanced, Coast Artillery

24–a. Drill and Command. Map Reading. Military sketching, Orientation. Position finding systems (to include heavy artillery and anti-aircraft artillery).

Elective for Juniors. Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

25–b. Position Finding Systems. Gunnery, Heavy and Anti-aircraft artillery. Conduct of fire. Analysis of drill and target practice.

Elective for Juniors. Rec., 5 hrs.; prep., 3 hrs.; 8 units.

26–c. Drill and Command. Gunnery, Anti-aircraft artillery, continued. Analysis of drill and target practice.

Elective for Juniors. Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

Second Year Advanced, Coast Artillery

27–a. Artillery Material. To acquaint the student with those types of artillery material not covered in previous years, and to round out the information gained at camp.

Orientation. To enable the student to perform the topographical operations necessary for accurate computation of firing data in the field and in seacoast firing.

Drill and Command. To qualify the student to perform the duties of platoon and company commanders and to be instructors of basic students in close order drill, physical drill and ceremonies; especial attention being paid to the development of leadership qualities and methods of instructing and handling men.

Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

28–b. Military Law and Officers' Reserve Corps Regulations. Military history and policy; administration and supply; military field engineering.

Rec., 5 hrs.; prep., 3 hrs.; 8 units.

29–c. Military Motor Transportation. Artillery tactics; drill and command.

Rec., 3 hrs.; drill, 2 hrs.; prep., 3 hrs.; 8 units.

MUSIC

ROBERT W. MANTON, *Director and Associate Professor*
FRANCES E. DEWOLFE, *Instructor in Voice*
HARRIS S. SHAW, *Instructor in Pianoforte and Organ*
LEWIS SWAIN, *Bandmaster*

Major: 150 time units of departmental and related departmental subjects, *i.e.*, Language (French and German, important to musical literature), History (History of the Fine Arts), English Literature, and Physics (Acoustics), exclusive of elementary subjects.

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, 119–a, 120–b, 121–c.

2. Courses which treat of the historical, literary and aesthetic 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, 125–a, 126–b, 127–c.

3. The third group of courses is practical in nature and embraces the educational activities of the University Glee Clubs, Band, Orchestra and Choir.

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.

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, Music 104–a, 105–b, 106–c or 125–a, 126–b, 127–c as best adapted to this end.

Students interested in some particular musical organization, such as glee club or orchestra, are permitted to elect work with the organization desired.

1. **University Band**
   Prerequisite: Ability to play some band instrument and satisfactory completion of Basic Course, R. O. T. C. Open to others with special permission of the Professor of Military Science and Tactics. 5 units.
2. **The Men's Glee Club**
   Open to all undergraduates interested in choral singing and who fulfill the requirements of a try-out. 1 unit.
3. **Advanced Choral Club (Men)**
   Prerequisite: A grade of 80, or more, in the previous course. Participation in some extra-curricular work, *i.e.*, Double Quartet, Choir, Vesper Services, and the like. 2–4 units.
4. **The Women's Glee Club**
   Open to all undergraduates interested in choral singing and who fulfill the requirements of a try-out. 1 unit.
5. **Advanced Choral Club (Women)**
   Prerequisite: A grade of 80, or more, in the previous course. Participation in some extra-curricular activity, *i.e.*, Treble Clef Club, Choir, Vesper Services, and the like. 2–4 units.
6. **The University Orchestra**
   Open to all undergraduates interested in orchestral playing and who fulfill the requirements of a try-out. 1 unit.
7. **Advanced Orchestral Club**
   Prerequisite: A grade of 80, or more, in the previous course; ability to assist at Vesper Services, exceptional solo technique. Departmental class illustrations, string quartet, trio playing and the like. 2–4 units.

8. The University Choir

Open to all students who fulfill the requirements of a try-out.

The purpose of this organization is to supply the music each Sunday at the Community Church. Faithfulness and dependability, together with pronounced musical ability, are necessary qualifications for each member. The usual opportunities will be given to study and participate in the finest examples of Church music in existence, thereby giving a distinctive educational and cultural value in this splendid field of music.

2 rehearsals: 2 units.

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, Greek and Roman music, the early church, systems of notations, beginnings of harmony and counterpoint, the Troubadours and Minnesingers, the Motet and Madrigal, Folk Song, the 17th, 18th, 19th and 20th century composers, music in America, modern tendencies, are some of the topics treated together with many other phases. This course is open to Freshmen and others and presupposes knowledge of the fundamental principles of music. Prof. Manton.

Elective. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

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 formulae 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, 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. Prof. Manton.

Elective. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

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 bases 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. Prof. Manton.

Elective. Lec. or rec., 2 hrs.; prep., 3 hrs.; 5 units.

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, a thorough study of modal harmony and its relation to composition and appreciation of fifteenth- and sixteenth-century music; and to give the student a thorough grounding in preparation for contrapuntal writing. Prof. Manton.

Prerequisite: Music 107–a—109–c. Lec. or rec., 2 hrs.; prep., 3 hrs.; 5 units.

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, choral figuration, 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. Prof. Manton.

Prerequisite: Music 107–a—112–c. Lec. or rec., 2 hrs.; prep., 3 hrs.; 5 units.

116–a, 117–b, 118–c. Canon and Fugue. Canon and Fugue are the most advanced forms of polyphonic composition requiring a thorough grounding in harmony and counterpoint. The object of this course is to perfect the contrapuntal technique of the student, enabling him to study the larger and freer forms of composition. The work will be based on the fugal works of Bach and Franck, consisting of practice in writing canons of all species, and in the analysis and composition of fugues. Prof. Manton.

Prerequisite: 107–a—115–c. Lec. or rec., 2 hrs.; prep., 3 hrs.; 5 units.

119–a, 120–b, 121–c. Instrumentation. This course is designed to ground the student in the idiomatic writing and technique necessary to score effectively for symphonic orchestra. It necessitates an authoritative background in harmony and counterpoint. All the orchestral and incidental instruments will be considered individually as to their technique, possibilities and limitations; in separate choirs; and in combination as a whole unit.

Orchestral scores will be studied in detail; score reading and reduction emphasized; and original work in this idiom encouraged. Prof. Manton.

Prerequisite: 104–a—115–c. 3 hrs.; 7 units.

125–a, 126–b, 127–c. The History and Development of Choral Music. This is a special course consisting of lectures, readings and reports, and only a limited number of qualified students will be admitted.

The course is designed to trace a straight line through such study as: Gregorian Chant, folk song, the music of the Troubadours, the beginnings of harmony and counterpoint, the work of the Netherland masters and of Palestrina and his contemporaries; the German choral works of the Reformation, the Tudor School in England; the choral works of Bach, Handel, etc., ending with a consideration of the choral literature of the nineteenth century and the modern French, English and Russian composers.

Students will meet three times a week, the third meeting being devoted to class singing of the works considered in the lectures. Prof. Manton.

5 hrs.; 5 units.

NOTE: No fee is attached to courses 101–a inclusive.

128–a. 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.

Elective. Lec. or rec., 1 hr.; prep., 1 hr.; 2 units.

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.

Elective. 1 lesson.

25–a, 26–b, 27–c. Intermediate Course. This course consists of the development and strengthening of 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.

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.

Prerequisite: 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.

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.

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.

Prerequisite: 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.

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.

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, Vierné and the English and American schools together with a study of adaption, modulation, accompaniment, Gregorian chant, mediaeval or modal harmony, conducting, hymnology, etc.; in relation to practical church service work.

Prerequisite: Organ 40–a—45–c. 1 lesson.
NOTE: 40–a—48–c inclusive are fee courses.

TUITION

Private instruction in piano, 50 minute lesson a week, $36 a term.
Private instruction in organ, 50 minute lesson a week, $36 a term.
All tuition is payable at the Business Office at the time of registration.

PHILOSOPHY AND PSYCHOLOGY

HERBERT F. RUDD, *Professor*
ADOLPH G. EKDAHL, *Associate Professor*

Major: 150 time units in this and related departments, exclusive of elementary subjects.

Graduate Work: For subjects primarily for graduate study see Catalog of Graduate School.

PHILOSOPHY

PROF. RUDD

24–a, 25–b, 26–c. Introduction to Philosophy. This is a survey of some of the main problems of philosophy. First term: a study of the problems of personality and the factors that determine its development. Second term: an analysis of the modern sciences and their bearing on the persistent problems of philosophy. Third term: an inquiry into modern problems, and the ethical principles required for their solution. (Formerly given as 24–a, 25–b, 31–a, and 32–b.)

Elective for Sophomores, Juniors, and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

31–a, 32–b, 33–c. History of Philosophy. A history of philosophic thinking from ancient Greece up to and including a study of the critical and constructive thinking of contemporary philosophers. (Formerly given as 41–a, and 42–b.)

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

41–a. The Art of Thinking: Logic. A study of the methods, criteria and processes involved in the search for truth. (Formerly given as 34–a.)

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

42–b. Oriental Philosophy. An introduction to the great thinkers of the East. (Formerly given as 43–c.)

Elective for Juniors and Seniors. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

43–c. Applied Ethics. A study of the application of ethical theory to contemporary social, economic and political problems. (Formerly given as 33–c.)

Elective for Juniors and Seniors who have taken 24–a, 25–b, 26–c, or who secure the consent of the instructor. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

44–c. Literary Contributions to Philosophy. A study of philosophic tendencies as revealed in selected literary material. Extensive readings and reports form the basis of discussion. (Not given in 1930–31.)

Elective for Seniors who have taken a year's work in Philosophy and who possess a general acquaintance with literature. Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

54–a, 55–b, 56–c. Seminar: Special Problems in Philosophy.

Elective with consent of instructor for Seniors who have taken two years' work in Philosophy. Credit to be arranged.

PSYCHOLOGY

PROF. EKDAHL

Graduate Work: For subjects primarily for graduate study see Catalog of Graduate School.

The main purpose of the subjects in general psychology is to give to the student wishing a well-rounded education an opportunity for gaining a knowledge of the human mind and the bases of human behavior. The sequence of courses is arranged so as to lay also a suitable foundation for those who might desire to enter graduate work in psychology or to become psychologists by profession.

INITIAL SUBJECTS

21–a. Elementary Psychology. This course together with 22–b covers the general field of psychology and consists of lectures, recitations and class demonstrations. A study of the sensations, feeling, attention, reflexes, instincts and emotions.

Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

22–b. Elementary Psychology. A continuation of 21–a. A study of perception, judgment, imagination, association, memory, learning and reasoning.

Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

SECONDARY SUBJECTS

Prerequisites: Psychology 21–a and 22–b, unless otherwise specified or permission is granted by instructor.

23–c. Advanced Psychology. A brief historical survey of the field of theoretical psychology. Psychological concepts and theories as developed by the various modern "schools" of psychology such as Functionalism, Behaviorism and Structuralism are considered.

Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

37–a. Experimental Psychology. Simple experiments on the sensations. Emphasis will be given toward the development of the proper technique of psychological investigation.

Lec. and lab., 6 hrs.; prep., 4 hrs.; 10 units.

38–b. Experimental Psychology. Experiments on the complex mental processes involving perception, association, imagination, learning and reasoning.

Lec. or lab., 6 hrs.; prep., 4 hrs.; 10 units.

39–c. Experimental Psychology. Psychophysical measurements, the determination of Weber constants, limens of sensibility, etc.

Prerequisites: Psychology 21–a and 22–b may be waived for seniors and pre-medical Sophomores in the following courses. Lec. and lab., 6 hrs.; prep., 4 hrs.; 10 units.

47–a. Physiological Psychology. A study of the physical basis of mind, nerve functions and their correlations with mental processes.

Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

48–b. Comparative Psychology. A study of psycho-genesis or the development of "mind" beginning with the one-celled organisms.

Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

49–c. Abnormal Psychology. A study of abnormal phenomena such as disorders of perception, association, memory, judgment and personality. The psychoses and psychoneuroses will be considered and a brief review of mental deficiency presented. Visits to institutions.

Lec. or rec., 3 hrs.; prep., 7 hrs.; 10 units.

51–a, 52–b, 53–c. Seminar. Special Problems in Psychology. Credit to be arranged.

PHYSICAL EDUCATION

PHYSICAL EDUCATION FOR MEN

WILLIAM H. COWELL, *Professor, Director of Athletics and Coach of Football*
HENRY C. SWASEY, *Associate Professor, Coach of Baseball, Soccer, Basketball*
PAUL C. SWEET, *Assistant Professor, Coach of Track, Cross-Country, Relay and Wintry Sports*
E. W. CHRISTENSEN, *Instructor, Assistant Coach Varsity Football, Coach of Hockey*
CARL LUNDHOLM, *Instructor, Supervisor and Coach Freshman Football, Basketball and Baseball*
PERCY F. REED, *Assistant, Coach of Boxing*
ALFRED H. MILLER, *Assistant, Assistant Coach Football, Relay and Track*
CHARLES O. NASON, *Department Secretary*
WILLIAM F. MARSH, *Trainer*

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.

On the second floor are the offices of the athletic director and assistants.

The Memorial Field adjoins the Gymnasium. The field, one of the best in New England, is equipped with a one-fourth mile cinder track, a fine sodded grass football gridiron, and adequate stands for the large crowds attending New Hampshire activities. Adjoining Memorial Field a beautiful pond has been constructed for swimming, skating, hockey, and water sports.

Three minutes' walk from the Gymnasium is the new baseball field and other fields under construction.

On these fields are found practice grounds for football, soccer, class contests, as well as the regulation baseball diamond.

Requirements.—All men students in the freshman and sophomore classes are required to complete the prescribed work in Physical Education.

The gymnasium suit adopted by the department consists of a gray cotton sleeveless jersey, gray flannel trunks with blue trimming on leg seams, blue athletic stockings and rubber-soled tennis or basketball shoes. This suit must be worn at all class exercises in Physical Education.

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, snowshoeing, swimming, tennis, track, volleyball, in-door baseball and handball.

(*Consult "Subject and Room Schedule" 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. Work, 2 hrs.; 2 units.

52–b. Physical Education. Continuation of recreational activity program.

Required of all Freshmen. Work, 2 hrs.; 2 units.

53–c. Physical Education. Continuation of recreational activity program.

Required of all Freshmen. Work, 2 hrs.; 2 units.

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. Work, 2 hrs.; 2 units.

55–b. Physical Education. Continuation of recreational activity program.

Required of all Sophomores. Work, 2 hrs.; 2 units.

56–c. Physical Education. Continuation of recreational activity program.

Required of all Sophomores. Work, 2 hrs.; 2 units.

PHYSICAL EDUCATION FOR WOMEN

KATHARINE WATSON, *Director*
BERTHA M. KIRK, *Assistant Professor*
MARION RUSSELL, *Instructor*

Major: See page 84.

Students registering in the Professional Physical Education Course after September 1, 1929, must obtain a grade of 75 in at least 100 time units from the following list of required subjects:

Physical Education 14–a, 15–b, 16–c, 17–b, 18–a, –b, 19–c, 20–a, 21–b, 22–c, 23–a, 24–b, 25–c, 26–a, 27–b, 28–c, 29–a, 30–b, 31–c, 32–a, 33–b, 34–c, 35–a, 36–b, 37–c, 38–c, Chemistry 14–b, 15–c, Zoölogy 33–a, 34–b, 35–c, 13–a, 14–b, 15–c, 42–a, 43–b, 44–c, Agric. Chem. 1–a, 23–b, Home Economics 63–c, 83–a.

The aim of this department is to give to each woman student an opportunity to enter into activities of a wholesome, stimulating and enjoyable nature, which will enable her to reach her utmost of social, physical, and mental perfection.

Requirements: Every woman student must take at least one subject of practical work each term of her Freshman, Sophomore, and Junior years.

Every woman student must, upon entering, have a physical examination by the University Physician. The results of this examination determine the type of activity each may pursue.

Except in special cases, no more than four units in the same sport shall be credited.

Required costume.—White step-in blouse, black knickers, black stockings, and high or low black tennis shoes. This costume may be purchased at Wright & Ditson's, Boston, Mass.

PRACTICAL SUBJECTS

Fall term.—Hockey, Soccer, Tennis, Volley-ball, Swimming, Horseback riding, Individual Gymnastics, Archery, Natural Gymnastics, Clog Dancing, Natural Dancing, Riflery and Bowling.

Winter term.—Basketball, Clog Dancing, Natural Dancing, Skating, Snowshoeing, Horseback riding, Individual Gymnastics, Formal Gymnastics, Riflery and Bowling.

Spring term.—Outdoor Baseball, Field and Track, Tennis, Individual Gymnastics, Horseback Riding, Archery, Swimming, Folk Dancing, Riflery and Bowling.

1–a, 2–b, 3–c. Physical Education.
Required of Freshmen. Lab., 2 hrs.; 2 units.

1.5–a, 2.5–b, 3.5–c. Physical Education.
Required of Freshmen majoring in Physical Education. Lab., 4 hrs.; 4 units.

4–a, 5–b, 6–c. Physical Education.
Required of Sophomores. Lab., 2 hrs.; 2 units.

4.5–a, 5.5–b, 6.5–c. Physical Education.
Required of Sophomores majoring in Physical Education. Lab., 4 hrs.; 4 units.

7–a, 8–b, 9–c. Physical Education.
Required of Juniors. Lab., 2 hrs.; 2 units.

7.5–a, 8.5–b, 9.5–c. Physical Education.
Required of Juniors majoring in Physical Education. Lab., 4 hrs.; 4 units.

10–a, 11–b, 12–c. Physical Education.
Elective for Seniors. Lab., 2 hrs.; 2 units.

10.5–a, 11.5–b, 12.5–c. Physical Education.
Required of Seniors majoring in Physical Education. Lab., 4 hrs.; 4 units.

THEORETICAL SUBJECTS

13–a. Health Problems. Lectures and discussions on college health problems. Reference readings and reports. Prof. Kirk and Miss Russell.

Required of all Freshmen. Lec. or rec., 1 hr.; prep., 1 hr.; 2 units.

14–a, 15–b, 16–c. The Theory and Practice of Play. This course deals with the theory, nature, and function of organized play. Very useful for those who intend to do playground work. Not open to Freshmen. Prof. Kirk.

Required of majors. Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

17–b. History of Physical Education. This deals with ancient, mediaeval, and modern forms of physical education and traces the development into the present type. Miss Russell.

Lec. or rec., 3 hrs.; prep., 3 hrs.; 6 units.

18–a, b. Kinesiology. This course deals with a consideration of body mechanics, the muscles involved in various movements, etc. Prof. Watson.

Prerequisite: Zoölogy 33–a, 34–b, 35–c. Required of majors. Lec. or rec., 3 hrs.; prep., 3 hrs.; 6 units.

19–c. Scouting. This subject includes methods of organizing and conducting girl scout troops, with special reference to subject material. Prof. Kirk.

Required of majors. Lab., lec., or rec., 2 hrs.; prep., 2 hrs.; 4 units.

20–a, 21–b, 22–c. Clog and Folk Dancing. Intended chiefly for those especially interested in teaching physical education. Prof. Kirk and Prof. Watson.

Required of majors. Lec. or lab., 2 hrs.; 2 units.

23–a, 24–b, 25–c, 26–a, 27–b, and 28–c. Physical Education. Deals with teaching material, team plays, methods of coaching, and other phases of the subject which are of interest to the prospective teacher.

Required of students majoring in Physical Education.

23–a. Technique of Soccer and Formal Gymnastics. Miss Russell.

Lab., 2 hrs.; lec. or rec., 2 hrs.; prep., 2 hrs.; 6 units.

24–b. Technique of Indoor Baseball and Basketball. Prof. Kirk.

Lab., 2 hrs.; lec. or rec., 1 hr.; prep., 1 hr.; 4 units.

25–c. Technique of Tennis, Archery and Outdoor Baseball. Prof. Kirk.

Lab., 2 hrs.; lec. or rec., 1 hr.; prep., 1 hr.; 4 units.

26–a. Technique of Hockey and Natural Gymnastics. Prof. Watson.

Lab., 2 hrs.; lec. or rec., 1 hr.; prep., 1 hr.; 4 units.

27–b. Technique of Natural, Folk, and Clog Dancing. Prof. Kirk.

Lab., 2 hrs.; lec. or rec., 1 hr.; prep., 1 hr.; 4 units.

28–c. Technique of Track and Swimming. Prof. Watson.

Lab., 2 hrs.; lec. or rec., 1 hr.; prep., 1 hr.; 4 units.

29–a, 30–b, 31–c. Natural and Advanced Clog and Folk Dancing. Prof. Kirk.

Required of students majoring in Physical Education.
Lab., 2 hrs.; 2 units.

32–a, 33–b, 34–c. Practice Teaching. An opportunity is given to teach in the public schools under supervision of the college instructors. Prof. Kirk.

Prerequisites: 14–a, 15–b, 16–c. Required of majors.
Lab., 2 hrs.; prep., 1 hr.; 3 units.

35–a, 36–b. The Theory and Practice of Individual Gymnastics. This course is essentially an advanced course for those majoring in Physical Education. Prof. Watson.

Prerequisite: Physical Education 18–a. Lec. or rec., 2 hrs.; lab., 2 hrs.; prep., 2 hrs.; 6 units.

37–c. The Theory and Practice of Massage. This course is a continuation of 36–b. Prof. Watson.

Prerequisite: Physical Education 35–a, 36–b. Lec. or rec., 2 hrs.; lab., 2 hrs.; prep., 2 hrs.; 6 units.

38–c. Curriculum Building. Instruction in teaching, adaptation and preparation of lesson plans. Prof. Watson.

Lec. or rec., 2 hrs.; prep., 2 hrs.; 4 units.

PHYSICS

HORACE L. HOWES, *Professor*
CLEMENT MORAN, *Associate Professor*
RAYMOND R. STARKE, *Assistant Professor*
WILLIAM H. HARTWELL, *Instructor*
HAROLD I. LEAVITT, *Instructor*

Major: 150 time units of departmental and related departmental subjects.

1–a, 2–b, 3–c. Introductory College Physics. The properties of matter, heat, magnetism, electricity, wave-motion, sound, and light. The subject includes experimental lectures, laboratory exercises, recita-

tions from Kimball's "College Physics." Prof. Howes, Prof. Moran, Prof. Starke, Mr. Hartwell.

Required of students in Agriculture. Elective for Arts students. Demonstration lecture, 1 hr.; rec., 2 hrs.; lab., 2 hrs.; preparation and report writing, 3 hrs.; 8 units.

6–a, 7–b, 8–c. General Physics. Mechanics and properties of matter the first term, followed by heat and selected topics in sound and light the second term; magnetism and electricity the third term. Anderson's "Physics" and Henderson's "Problems in Physics" are used in recitation work. Prof. Howes, Prof. Moran, Prof. Starke.

Prerequisites: Mathematics 201–a, 202–b, and 203–c in advance and Mathematics 7–a, 8–b, and 9–c either in parallel or as a prerequisite. Required of Sophomore Engineers in the Chemical, Civil, Mechanical, Electrical and Industrial Courses. Elective for those Arts students who have passed Introductory College Physics and have the prerequisites in Mathematics. Rec., 3 hrs.; demonstration lecture, 1 hr.; prep., 4½ hrs.; 8½ units.

9–a. General Physics Laboratory. Open only to those students who are studying 6–a, or who have previously obtained credit for 6–a. Experiments in properties of matter and mechanics with report writing and curve-plotting. Reports are carefully criticized by the department and corrected by the student. The appreciation of the laws of physical science, with the development of laboratory technique and an estimation of the limitations of scientific experimentation is the aim. Prof. Moran, Prof. Starke, Mr. Hartwell, Mr. Leavitt.

Prerequisite: The same as for *General Physics.* Required of Sophomores in Chemical, Civil, Mechanical, Electrical and Industrial Engineering Courses. Elective for Liberal Arts students under the same conditions as those specified for Physics 6–a. Lab., 5 hrs.; report writing and graphical representation of data, 6 hrs.; 11 units.

10–b. General Physics Laboratory. A continuation of Physics 9–a to include experiments in heat, sound, and light. Prof. Moran, Prof. Starke, Mr. Hartwell, Mr. Leavitt.

Prerequisites: Physics 6–a and 9–a. Physics 7–b in parallel or as a prerequisite. Lab., 5 hrs.; report writing, 5 hrs.; 10 units.

11–c. General Physics Laboratory. A continuation of Physics 10–b to include experiments in electricity and magnetism. Prof. Moran, Prof. Starke, Mr. Hartwell, Mr. Leavitt.

Prerequisites: Physics 6–a, 7–b, 9–a, 10–b. Physics 8–c in parallel or as a prerequisite. Lab., 5 hrs.; report writing, 5 hrs.; 10 units.

13–c. Elementary Optics and Photography. Lectures and recitation on the fundamental principles of geometrical optics as applied to photographic instruments. The laboratory is devoted to the study of focal planes, images and other properties of lenses, together with the making of photographs. Students will furnish their supplies. Prof. Moran.

Prerequisites: Physics 1–a, 2–b, 3–c, or the equivalent. Not open to Freshmen. Rec., 1 hr.; lec., 1 hr.; lab., 2 hrs.; prep., 4 hrs.; 8 units.

15–a. Theory of Electrons. A brief study of the theory of electricity to include the passage of a current through a gas by ions, the mobility of ions, the determination of the charge and mass of an electron, ionization by collision, the corona discharge, cathode rays, positive rays, thermionic emission, photo-electricity, X-Rays. Prof. Howes.

Prerequisites: Physics 8–c and 11–c. Mathematics 7–a, 8–b, 9–c. Open only to Juniors and Seniors. Required of Seniors in Electrical Engineering. Lec., 2 hrs.; quiz, 1 hr.; prep., 4 hrs.; 7 units.

17–a, 18–b, 19–c. Pre-Medical Physics. An intensive course in the general principles of physics with especial attention to the needs of students in preparation for medical work. Prof. Starke.

Open only to Juniors and Seniors in the Pre-medical Course. Lec. or rec., 3 hrs.; lab., 4 hrs.; preparation and report writing, 7 hrs.; 14 units.

25–b. Advanced Physics for Teachers. The aim is to study the most difficult topics to teach to high school or academy students. One standard college text and several high-school texts are used as reference books. Prof. Howes.

Prerequisite: A one-year course in college Physics. Open only to Juniors and Seniors. Rec., 2 hrs.; lec., 1 hr.; prep., 4½ hrs.; 7½ units. (Given in alternate years.)

27–a, 28–b, 29–c. Applied Physics for Students in Architecture. Recitations and experiments with carefully criticized reports on the stresses in solids, pressure in fluids, transmission of heat, resonance of sound, intensity of light and distribution of illumination, the measurement of electric current, etc. Mr. Hartwell.

Required of Sophomores in Architecture. Lec., 1 hr.; rec., 2 hrs.; prep., 2 hrs.; lab., 2 hrs.; report writing, 2 hrs.; 9 units.

33–b, 34–c. Household Physics. A study of the principles of physics with applications to household processes and appliances. The recitations will be based on Osborn's "Physics of the Home." Prof. Moran.

Required of Sophomores in Home Economics. Not open to Freshmen. Lec. or rec., 3 hrs.; prep., 4 hrs.; lab., 2 hrs.; report writing, 1 hr.; 10 units.

37–c. Advanced Electrical Measurements. Laboratory work on such problems as battery resistance by a potentiometer method, conductivity of electrolytes, low resistance by the Kelvin bridge, high resistance measurement, magnetic permeability, capacitance and inductance measurements, thermo-junction calibration, pyrometry. Prof. Moran.

Prerequisites: Physics 8–c and 11–c. Required of Seniors in Electrical Engineering. Rec., 1 hr.; lab., 4 hrs.; prep., 2 hrs.; 7 units.

POLITICAL SCIENCE

THORSTEN KALIJARVI, *Associate Professor*
PHILIP G. NESERIUS, *Instructor*

Major: 150 time units of Political Science and related subjects, exclusive of elementary subjects.

Courses in this department aim to give the student a thorough grounding in Political Science which should not only serve the purpose of general culture, but also prepare for more intensive work in fields of specialized study, such as law, teaching, politics, government service, and social work. Students are strongly urged to supplement their work in Political Science with courses in Economics, History, and Sociology. The department, with the view of broadening the student's range of ideas or in preparation for research, strongly recommends the acquisition of a reading knowledge of one or more foreign languages, preferably French and German.

Students taking the Pre-law Course must obtain an average of 75 or better in the following list of subjects:

Political Science—101–a, 102–b, 103–c
Political Science—104–a, 105–b, 106–c
Political Science—113–a, 114–b, 115–c

Political Science—118–c
Political Science—122–a, 123–b, 124–c

and in enough advanced subjects to make a total of 100 time units.

GROUP I

INTRODUCTORY COURSES

101–a, 102–b, 103–c. An Introduction to the Principles of Political Science. All majors in this department are expected to take this course. It treats with fundamentals in political science. Classes will be largely devoted to lectures occasionally supplemented with a discussion. Text. Collateral reading. Prof. Kalijarvi.

Open to Sophomores with a course in Social Science, or to such as intend to major in this department. Lec. or rec., 3 hrs.; prep., 3 hrs.; 6 units.

104–a. American Government. A discussion of both federal and state governments in the United States. This discussion will include the origin and development of American political institutions, the interrelation of governmental departments, the tendencies for the federal government to expand its powers, and the national party system. A text and collateral reading will be required. Classes will be largely discussion supplemented by an occasional lecture. Mr. Neserius.

Open to Sophomores, Juniors, and Seniors who have had courses in the social sciences. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

105–b. Constitutional Law. The aim in this course is to supplement in part 104–a, but more especially to survey the constitutional development of this country and government in the terms of supreme, federal, and state court decisions. Mr. Neserius.

Open on the same terms as 104–a. Purely discussion. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

106–c. Municipal Government. This is the logical conclusion to a complete survey of local, state, and federal government in the United States, which 104–a and 105–b begin. A study of the organization and growth of municipal government, the relation of the city to the state, the mechanism and legal status of the municipal community, and an examination in detail of the government of four or more large typical American cities. Mr. Neserius.

Open on the same basis as 104–a and 105–b. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

107–a, 108–b. European Governments. A survey of the British and continental systems of government. Details will be stressed only as time will permit. Discussion very largely. Mr. Neserius.

Prerequisite: History 16–a or its equivalent. Consent of the instructor in special cases may override requirements. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

109–c. Colonial Governments. This course is the logical successor to 107–a and 108–b. The development of colonial empires such as those of England, France, Italy, United States, and former Germany will be taken up. Mr. Neserius.

Prerequisite as in 107–a and 108–b. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

GROUP II

INTERMEDIATE COURSES

113–a, 114–b, 115–c. International Law. The study of the law governing the relations among the various states. Primarily discussions supplemented by the weekly preparation of hypothetical cases. Prof. Kalijarvi.

Prerequisites: 101–a, 102–b, 103–c. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

116–a, 117–b. Comparative Government. A survey of the theories underlying governments in general. A comparison of the organs or institutions of government as they are observed in action or as they may be evaluated in theory. Mr. Neserius.

Open to any major in the department, or to those who have had any work in the field from 104–a to 109–c. Also admission to the class may be obtained with the consent of the instructor. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

118–c. Introduction to Jurisprudence. A study of the generalized principles of law and legal institutions. A systematic review of the law as a whole, investigating the historical, sociological, analytical, and philosophical methods. Discussion and lecture. Mr. Neserius.

Prerequisite: The student must have taken or be taking one of the subjects in Group II. Lec. or rec., 2 hrs.; prep., 6 hrs.; 8 units.

GROUP III

ADVANCED COURSES

119–a, 120–b, 121–c. Political Theory. For majors in the department when they have reached their Junior year. Also for graduate

students. The work consists of directed reading in political science. Mr. Neserius.

Open only to students in the department or with the instructor's consent. Lec. or rec., 2 hrs.; prep., 6 hrs.; 8 units.

122–a, 123–b, 124–c. Seminar. Prof. Kalijarvi.

Open to all majors and graduate students to meet course requirements or with the department's consent. Papers will be prepared on assigned topics and reports made under the guidance of the head of the department or a proxy. Lec. or rec., 1 hr.; prep., 3 hrs.; 4 units.

125–a, 126–b, 127–c. Research and Thesis. Prof. Kalijarvi.

Required of all graduate students. Open to Seniors majoring in the department who have attained a high average. Only a limited number will be admitted. This course cannot be taken without the consent of the head of the department. A flexible way of testing out the student who must conduct original research himself under the supervision of the head of the department. He will be directed and instructed in the methods of research by conference. Credit to range from 4 to 12 for undergraduates and from 4 to 25 for graduates.

128–a, 129–b, 130–c. International Relations, or World Government. A study of the forms of international organizations and world politics. This course deals with the rise of the modern nations and their relations to each other. Prof. Kalijarvi.

Open to Juniors and Seniors majoring in Political Science, History or Economics. Lec. or rec., 2 hrs.; prep., 10 hrs.; 12 units.

POULTRY HUSBANDRY

T. Burr Charles, *Professor*
Carl L. Martin, *Assistant Professor*
Homer O. Stuart, *Instructor*
Charles A. Bottorff, *Instructor*

1–c. Farm Poultry. A general subject in poultry husbandry, taking up the breeds, housing, incubation, brooding, feeding, breeding, culling and selection, and management. Prof. Charles and Mr. Stuart.

Required of all Sophomores in Agriculture except those in Forestry. Lec., 2 hrs.; lab., 2½ hrs.; prep., 2½ hrs.; 7 units.

5–b. 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. Prof. Charles.

Prerequisite: Poultry 1–c. Required of all Seniors in Poultry. Elective for others. Lec., 3 hrs.; lab., 2 hrs.; prep., 4 hrs.; 9 units.

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 treatment. Mr. Bottorff.

Prerequisite: 1–c. Required of all Juniors in Poultry. Elective for others. Lec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

7–b. Incubation. A study of the theories involved in incubation and brooding, with each student running an incubator and keeping all the necessary records. Mr. Stuart.

Prerequisite: Poultry 1–c. Required of all Seniors in Poultry. Elective for others. Lec., 2 hrs.; lab., 5 hrs.; prep., 3 hrs.; 10 units.

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 hens. Prof. Charles and Mr. Stuart.

Prerequisite: Poultry 1–c. Required of Seniors in Poultry and Teacher Training. Elective for others. Lec., 3 hrs.; lab., 4 hrs.; prep., 3 hrs.; 10 units.

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. Prof. Charles and Mr. Stuart.

Prerequisite: Poultry 1–c. Required of all Seniors in Poultry. Elective for others. Lec., 3 hrs.; prep., 4 hrs.; 7 units.

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. Stuart.

Lec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

12–c. Poultry Brooding. This is a laboratory subject designed to give to students special information in the care and management of chicks. Required of Teacher Training and Poultry students. Mr. Stuart.

Lab., 4 hrs.; 4 units.

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 Juniors in Poultry. 50 units.

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. Prof. Charles and staff.

Required of all Seniors in Poultry. Hours to be arranged. 6 to 9 units.

17–b. 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. Prof. Charles.

Required of all Juniors in Poultry. Elective for others. Lec., 3 hrs.; prep., 4 hrs.; 7 units.

22–c. Poultry House Design and Construction. Students design and construct various types of poultry houses and equipment. Prof. Charles and Mr. Batchelder.

Required of all Seniors in Poultry. Elective for others. Lab., 2 hrs.; prep., 1 hr.; 3 units.

23–a. Poultry Breeds and Judging. The history, characteristics and classification of the different breeds of poultry. Laboratory will consist of practice in judging and scoring of fowls from the utility and exhibition standpoint. Mr. Stuart.

Required of Poultry Seniors. Elective for others. Lec., 2 hrs.; lab., 2½ hrs.; prep., 2 hrs.; 6½ units.

31–a, 32–b, 33–c. 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. Group dis-

cussions covering pertinent poultry topics will also be held. Prof. Charles and staff.

Prerequisite: Poultry 1–c. Required of all Seniors in Poultry. Elective for others. Lec., 3 hrs.; prep., 2 hrs.; 5 units.

SOCIAL SCIENCE

DONALD C. BABCOCK, *Professor (In Charge)*
ESTHER L. BROWN, *Assistant Professor*
PHILIP M. MARSTON, *Assistant Professor*
ROLAND E. PARTRIDGE, *Assistant Professor*
GWENDOLYN JONES, *Instructor*

1–a, 2–b, 3–c. Social Science. Social Viewpoints, an introduction to the social sciences. Various approaches to the problems of human society will be made, taking by turn the points of view of the anthropologist, the biologist, the historian, the economist, the sociologist, etc. The influence of physical environment upon man, the evolution of the major institutions and the significance of some of the problems confronting society will be discussed.

Required as a group elective for Freshmen in Liberal Arts. A prerequisite for Education, History, Philosophy, Psychology, and Sociology. Elective for Sophomores by permission. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

SOCIOLOGY

ALBERT N. FRENCH, *Professor*
HANNIBAL G. DUNCAN, *Associate Professor*
ROLAND E. PARTRIDGE, *Assistant Professor*

Major: 150 time units of departmental and related departmental subjects, exclusive of elementary subjects.
Graduate work: See Catalog of the Graduate School.

It is the purpose of this department to present to students, in a constructive manner, some of the major theories and principles, results of scientific investigations, and general information regarding associational activities and relationships in their various forms.

In addition to general background and fundamental courses, special courses are designed (1) to supplement the work in other departments where a better understanding of social relations would be an asset, and (2) to offer preparatory professional courses to those anticipating the

teaching of sociology, engaging in social work, personnel work, and group leadership.

It is recommended that majors in the Department of Sociology acquire fundamental training in Psychology and Zoölogy and add as preferred electives such supplementary courses as Principles of Economics, or Political Science, or Philosophy, and when their backgrounds will permit, Economics 10–a, Statistics 7–b, Philosophy 34–a, 35–b, 36–c, and Political Science 119–a, 120–b, 121–c and 118–c.

Initial Subjects—Group A

Prerequisite: Sophomore standing.

14–a, 15–b, 16–c. Principles of Sociology. This elementary course aims to give the student a background for social relationships. It presents some of the viewpoints of modern sociologists; discusses some of the major social problems and social institutions; sets forth and analyzes the basic principles of sociology as related to the foundations of social life; suggests the development of personality, isolation versus social interaction, and social control. Prof. Duncan.

Required of all majors in Sociology. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

20–a, 21–b. Social Survey. This elementary survey of the social aspects of intellectual history includes a comparative study of the writings of early social theorists as well as present-day sociologists. Particular attention will be given to the development of outstanding concepts and theories deemed necessary as a cultural background. Prof. Partridge.

Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

22–c. Social Emergence. A synthetic study in social amelioration, social evolution and social work. Prof. Partridge.

Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Previously given as 25–b.)

Secondary Subjects—Group B

Prerequisites: Junior standing and Sociology 14–a, 15–b, and 16–c.

17–a. Social Psychology. An analytic study of human traits in so far as these are basic to a study of social personality and social psychology. The approach is largely from the angle of sociology. Prof. French.

Required of all majors. Prerequisite: 3 terms of major standing or instructor's permission to register. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

18–b. Societal Psychology. A further analytic study of the principles of social psychology largely from the standpoint of psychology. A more detailed analysis of the social dynamics of nature and nurture, of modifying human traits, of heredity and social environment, of behavior and creative experience, of institutional stimuli and cultural responses. Prof. French.

Prerequisite: Major standing or instructor's permission to register. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

19–c. Social Dynamics. A synthetic study of the principles of social change, social conflict, etc., in light of modern biology, psychology, education and other social sciences. The approach is philosophical. Prof. French.

Prerequisite: Preliminary study in General Psychology or Philosophy 34–a. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units. (Previously given as 24–a.)

23–a. Man and Culture (Anthropology). It is the purpose of this course to treat the characteristics of pre-historic races and their culture, together with the criteria used in distinguishing various human races and stages of culture; to study specifically the psychological and sociological implications involved in rites, beliefs, and other cultural acquisitions of man. Prof. Duncan.

Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units. (Previously given as 19–c.)

24–b. Race and Population Problems. This course consists of theories and policies of population; the increase of numbers; the problems of quality as affected by the differential birth rate, migrations, and racial mixtures; the sociological effects of cultural diffusion; and the control of population increase. Prof. Duncan.

Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

25–c. Immigration and Assimilation. This course deals with immigrant backgrounds, immigrants, their children and grandchildren. It traces the natural process of assimilation, showing the conflicts and adjustments peculiar to each generation. Prof. Duncan.

Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

26–a. Social Research. A general treatment of the technique in gathering data and the various methods of evaluation. Certain comprehensive problems like marriage and the family, criminology, social work, etc., will be studied by appropriate methods. Prof. Duncan.

Required of all majors. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

28–b. Urban-Rural Sociology. This course is a survey of certain problems and conditioning factors and influences of community life, trends in quality and quantity of population and of suggested remedial measures for improvement. Prof. French.

Required of Juniors in Agricultural Teacher Training. Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units.

27–b. Criminology. This subject presents a general survey of the theories of crime; the causes of crime from the viewpoint of personality and the social situation; and the aims underlying the treatment of offenders. Prof. French.

Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

29–c. Educational Sociology. This course is a study of educational procedures considered in the light of psychological theory and the principles of sociology. Prof. French.

Prerequisite: A professional interest in teaching. Required of Seniors in Home Economics Teacher Training. Lec. or rec., 3 hrs.; prep., 6 hrs.; 9 units.

29.5–c. Social Work. The purpose of this course is to give an insight into the nature of social work. Prof. French.

Lec. or rec., 2 hrs.; prep., 4 hrs.; 6 units. (Given as 40–c in 1929–30.)

Advanced Subjects—Group C

Prerequisite: Senior standing and permission of the professor in charge.

30–a, 31–b, 32–c. Seminar: Sociological Research. Provision is here made for social research. Typical methods involved in the technique are first studied and illustrated; later opportunity is given to pursue the following subjects:

(a) A seminar in population problems.
(b) A seminar in social case work.
(c) A seminar in social theory.

Prerequisite: A major in Sociology or the equivalent, otherwise by invitation. Credit to be arranged.

33–c. Seminar: Professional Research. Methods of teaching social science in high school and junior college are studied. Objectives, selection, organization and presentation of content are analyzed. Seniors planning to teach may request invitation. Prof. French.

Credit to be arranged.

STATISTICS

GEORGE N. BAUER, *Professor*

1–a, 2–b. Statistical Methods. This is a basic course and aims to present some of the fundamental principles and methods of statistics. It is designed as the introductory course for students of business and engineering. It deals with such topics as the graphical representation of statistical material, frequency distribution, measure of dispersion, averages, time series, index numbers, and correlation.

Prerequisites: Mathematics 103–c or Mathematics 8–b or 8–c. Required of Sophomores in the Business Fundamentals Course, of Juniors in the Industrial Engineering Course, and recommended for Sociology majors. Rec., 3 hrs.; prep., 4 hrs.; 7 units.

4–a, 5–b. Economic and Business Statistics. Applications of the statistical method to economic and business problems. Price levels, seasonal changes, economic cycles, principles used in business forecasting including a consideration of existing business barometers.

Prerequisites: Statistics 1–a and 2–b. Elective for Juniors and Seniors. Rec., 3 hrs.; prep., 5 hrs.; 8 units.

7–c. Social Statistics. Applications of the statistical method to social problems. Some of the recent results achieved in this field. A study of the relation of certain social phenomena to the economic cycle. Application of the method of correlation to determine the lag of one time series in relation to another.

Prerequisites: Statistics 2–b. Recommended for majors in Sociology. Elective for Juniors and Seniors. Rec., 3 hrs.; prep., 5 hrs.; 8 units.

ZOÖLOGY

C. Floyd Jackson, *Professor*
Alma D. Jackson, *Associate Professor*
Edythe M. Richardson, *Assistant Professor*
* Donald G. Barton, *Instructor*
Dorothy T. Barton, *Instructor*
James M. Sanders, *Instructor*
John E. Sheehan, *Assistant*
Ruth E. Thompson, *Assistant*

Major: 150 time units in this and related departments, exclusive of elementary subjects.

Graduate work: For subjects primarily for graduate study see Catalog of the Graduate School.

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 includes advanced subjects primarily for major or pre-medical students.

Note: Students desiring to prepare for Medical or Dental Schools will consult the head of the department.

Students pursuing the regular Pre-medical Course must obtain a grade of 75 or better in at least 100 time units during their junior and senior years.

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 advised to carry the laboratory work (Zoölogy 4–a, 5–b and 6–c) parallel with this subject. Prof. Jackson.

Freshmen subjects. Lec. or rec., 3 hrs.; lab., 2 hrs.; prep., 5 hrs.; 10 units.

* On leave of absence.

13–a, 14–b, 15–c. Hygiene and Sanitation. A detailed study of the principles of health preservation. The subject deals with hygiene of digestion, muscular hygiene, neural hygiene, and various other important physiological processes affecting health. The latter half of the work is devoted to a study of food, water, and general sanitation, and the control of bacterial disease. The subject is continuous throughout the year. Prof. Jackson.

Prerequisite: One year of Zoölogy. Lec. or rec., 3 hrs.; prep., 4 hrs.; 7 units.

16–a, 17–b, 18–c. Evolution and Eugenics. 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. This will be followed by a consideration of the chief problems of eugenics. Prof. Jackson.

Prerequisite: Two years of Zoölogy. Lec. or rec., 3 hrs.; prep., 4 hrs.; 7 units.

19–a, 20–b, 21–c. Advanced Zoölogy. Arranged to suit the need of students who wish to specialize in Zoölogy. Two lectures 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.

Prerequisite: This subject may not be elected except by students who have completed at least 75 units in Zoölogy or Entomology with an average grade of at least 80. Open only to students by special permission. Credit and hours to be arranged.

22–a, 23–b, 24–c. General Taxonomy and Morphology. A study of the structure, classification, habits, and ecological relationships of the different groups of invertebrate animals, and the classification and ecological relationships of the vertebrates. The purpose of this subject is to acquaint the student with a large number of type forms, and with the identification, habits, and habitats of the common invertebrate and vertebrate animals. Mrs. Barton.

Required of Zoölogy majors. Prerequisite: One year of Zoölogy. Lec. or rec., 2 hrs.; lab., 4 hrs.; prep., 4 hrs.; 10 units.

30–b, 31–c. General Zoölogy. A detailed study of the fundamental principles of life; the nature and physiology of protoplasm; the struc-

ture of the cell and the processes of cell division. The structure and physiology of man will be discussed in detail. Mr. Sanders.

Required of Freshmen in Agriculture. Lec. or rec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units.

32–a. Genetics. A detailed study of the physical basis of inheritance, laws governing Mendelian inheritance, and the application of such laws to plant and animal breeding. (Same content as 50–c.) For agricultural students. Prof. Richardson.

Lec. or rec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units.

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. Prof. Richardson.

Required of Sophomores in Home Economics. Elective for Liberal Arts Sophomores not having credit in 2–b and 3–c. Lec. or rec., 3 hrs.; lab., 2 hrs.; prep., 3 hrs.; 8 units.

Group C. Advanced Major and Pre-medical Subjects

36–a, 37–b, 38–c. Histology. A study of the detailed structure of vertebrate animals, cell specialization and the manner in which tissues are combined into organs. The subject is of special interest for pre-medical students, those interested in becoming laboratory technicians or in teaching zoölogy. A great deal of attention is paid to general histological technique. Prof. A. D. Jackson.

Prerequisite: Two years' work in Zoölogy. Junior subject. Lec. or rec., 2 hrs.; lab., 6 hrs.; prep., 4 hrs.; 12 units.

39–a, 40–b, 41–c. Embryology. A detailed study of invertebrate and vertebrate embryos and their method of development. The first term's work is a brief résumé of invertebrate embryology for six weeks. Protochordata one week, and the remainder of the term on vertebrates, closing with the development of the frog. The second term is spent entirely on the chick. The third term deals with mammalian embryology, the last half being spent on human embryology. Lectures and text books are used throughout the course. Laboratory work is on type specimens of available embryos. The subject is primarily for pre-medical and advanced zoölogy students. Prof. A. D. Jackson.

Prerequisite: Two years' work in Zoölogy. Senior subject. Lec. or rec., 3 hrs.; lab., 4 hrs.; prep., 5 hrs.; 12 units.

42–a, 43–b, 44–c. Advanced Physiology. An advanced study of human physiology with special emphasis on nutrition, circulation, respi-

ration, excretion and secretion. The work will consist of lectures, assigned topics and laboratory experiments. Mrs. Richardson.

Prerequisite: Two years' work in Zoölogy. Lec. or rec., 3 hrs.; lab., 2½ hrs.; prep., 6½ hrs.; 12 units. (Not given in 1931–32.)

45–a, 46–b, 47–c. Comparative Anatomy of the Vertebrates. A careful study of the anatomy of the vertebrate animals. The first term's work is osteology and myology; the second term considers the digestive and vascular systems; the third, respiratory, excretory, reproductive, and endocrine systems. Laboratory dissections are made of each type of vertebrate. This is a fundamental course for pre-medical students, students of physical education, or those interested in advanced zoölogy. Mr. Sanders.

Prerequisites: Zoölogy 1–a, 30–a or 33–a. Sophomore subject. Lec. or rec., 3 hrs.; lab., 5 hrs.; prep., 4 hrs.; 12 units.

48–a, 49–b, 50–c. Cytology and Genetics. A detailed study of the cell, including morphology, the chemical and physical nature of protoplasm, mitosis, meiosis, syngamy, and related phenomena leading up to the physical basis of inheritance and the study of Mendel's laws, the expression and interaction of the genes, linkage, sex and its inheritance, the inheritance of quantitative characters, and the types and causes of variations. Prof. Richardson.

Prerequisite: Two years' work in Zoölogy. Lec. or rec., 3 hrs.; lab., 2½ hrs.; prep., 6½ hrs.; 12 units.

51–a, 52–b, 53–c. Advanced Neurology. A comparative study of the nervous systems of the lower animals and a detailed study of the morphology, physiology, and histology of the human nervous system. This subject is intended to give a practical knowledge of the nervous system and its operation. Prof. Richardson.

Prerequisite: Two years' work in Zoölogy. Lec. or rec., 3 hrs.; lab., 2½ hrs.; prep., 6½ hrs.; 12 units. (Not given in 1930–31.)

Zoölogy 100–a,–b,–c. Zoölogy Honors. Each term the head of the Department of Zoölogy will permit not more than two percent of the most proficient students in Zoölogy to transfer to this subject. This will consist of the work elected and such additional work as may be prescribed, which will include conferences and a thesis; to be followed at the close of the term with a comprehensive examination which may include all previous work taken in the department.

Prerequisites: Special appointment. Credit: To be arranged.

THE TWO-YEAR COURSE IN AGRICULTURE

FREDERICK W. TAYLOR, *Dean*

The Two-Year Course in Agriculture which was established in 1895 affords a splendid opportunity for the farm 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, live-stock 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 for the most part separate and distinct from those of the four-year courses. The work of the first year is largely a study of the sciences like bacteriology, 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 two-thirds of their time in specializing along some particular line of work in which they expect to engage later on.

The two-year course now consists of three terms of about twelve weeks each for two years. Students may enter at the beginning of the winter or spring terms, although we advise them to enter only at the beginning of the course in September. The work of this course is made as thorough and practical as the limited time will permit. The students are given practice both in the laboratory and in the field in doing many of the very things which are taught them in the classroom.

Military Science is not required of two-year students, but any student desiring to take this subject may elect it with the four-year students.

A student who meets the entrance requirements of the University may receive credit, towards graduation from a four-year course in the College of Agriculture, for work completed with a grade of 75 or better in certain agricultural subjects of the two-year course.

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 $75 per year. For out-of-state students the tuition is $175 per year. One-third of the tuition is payable at the beginning of each term.

Scholarships.—The University grants to residents of the state a limited number of scholarships which cover the tuition charges. Students desiring to secure scholarships should apply 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	$175	$75	
Books	30	25	$22
Room	120	72	63
Board	215	215	175
Laundry	35	20	15
Incidentals	50	30	25
	$625	$437	$300

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 Monday, September 22, 1930, and will close Monday, June 15, 1931. A Christmas recess of two weeks and a spring recess of seven 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 of 270 units or its equivalent.

UNIVERSITY OF NEW HAMPSHIRE

TWO-YEAR COURSE OF STUDY

First Year

	Fall Term Units	Winter Term Units	Spring Term Units
Eng. 201–a, 202–b, 203–c (*Grammar and Composition*)	8	8	8
Agr'l Chem. 201–a, 202–b (*Chemistry*)	8	8	
Agr'l Eco. 203–a (*Rural Economics*)	8		
Agr'l Eco. 202–b (*Farm Records and Accounts*)		6	
Bot. 201–a, 202–b (*Elements of Botany*)	8	6	
Bot. 203–c (*Plant Diseases*)			5
*A. H. 201–b (*Types and Breeds*)		9	
*D. H. 201–a (*Farm Dairying*)	10		
*For. 201–c (*Farm Forestry*)			7
M. E. 201–b (*Agricultural Drawing*)		5	
M. E. 202–c (*Forge Work*)			3
M. E. 203–c (*Wood Shop*)			5
Hort. 201–c (*Fruit Growing*)			7
Zoöl. 201–c (*Physiology and Hygiene*)			7
P. E. 51–a, 52–b, 53–c (*Physical Education*)	2	2	2
Convocation	1	1	1
	45	45	45

Second Year

Agron. 202–a (*Field Crops*)	8		
Agron. 203–b (*Soils*)		7	
Agron. 201–c (*Farm Equipment*)			8
Ento. 201–b (*Economic Entomology*)		7	
Convocation	1	1	1
Electives from subjects listed below	36	30	36
	45	45	45

Electives

Agr'l Eco. 204–a (*Agricultural Marketing*)	6		
Agr'l Eco. 205–a (*Farm Statistics*)	6		
A. H. 203–a (*Anatomy*)	7½		
A. H. 205–a (*Animal Breeding*)	10		
Hort. 203–a (*Greenhouse Management*)	7		
Hort. 205–a (*Orchard Problems*)	8		
Hort. 207–a (*Advanced Horticulture*)	4–8		
P. H. 201–a (*Farm Poultry*)	8		
P. H. 205–a (*Poultry Breeding*)	7		
P. H. 208–a (*Breeds and Judging*)	6½		
Agr'l Eco. 201–b (*Farm Management*)		9	
Agron. 204–b (*Manures and Fertilizers*)		7	
A. H. 202–b (*Feeds and Feeding*)		7	
A. H. 204–b (*Animal Diseases*)		7½	
D. H. 202–b (*Dairy Manufactures*)		10	
Hort. 204–b (*Home Decoration*)		8	
Hort. 208–b (*Advanced Horticulture*)		4–8	
P. H. 203–b (*Poultry Diseases*)		10	
P. H. 206–b (*Incubation*)		11	
P. H. 209–b (*Poultry Marketing*)		7	
A. H. 206–c (*Animal Diseases*)			7½
D. H. 203–c (*Dairy Production*)			9
Hort. 202–c (*Vegetable Gardening*)			7
Hort. 206–c (*Small Fruits*)			7
Hort. 209–c (*Beekeeping*)			7
Hort. 210–c (*Advanced Horticulture*)			4–8
P. H. 204–c (*Poultry Feeding*)			11
P. H. 207–c (*Poultry Brooding*)			4

* Students desiring to specialize in Poultry may substitute P. H. 201–a, 203–b and 204–c for these subjects.

*DESCRIPTION OF SUBJECTS OF TWO-YEAR COURSE IN AGRICULTURE

AGRICULTURAL ECONOMICS

201–b. Farm Management. Textbook, lectures, and recitations relating to farming as a business. Problems of marketing, buying, size, cropping systems, balance in organization, etc. Prof. Eastman.

Elective second year. Lec., 2 hrs.; lab., 2 hrs.; prep., 5 hrs.; 9 units.

202–b. Farm Records and Accounts. Lectures and practical farm problems relating to the use of accounts and research information in farming. Actual farm figures used. Prof. Eastman.

Required first year. Lec. and lab., 2 hrs.; prep., 4 hrs.; 6 units.

203–a. Rural Economics. Intended to acquaint the two-year man with some of the outstanding agricultural questions of the present time and their relation to theoretical and practical economics. Prof. Eastman.

Required first year. Lec., 3 hrs.; prep., 5 hrs.; 8 units.

204–a. Agricultural Marketing. A consideration of the increasing importance of marketing and some of its attendant problems. Special phases of coöperative marketing developed. Prof. Eastman.

Elective second year. Lec., 3 hrs.; prep., 3 hrs.; 6 units.

205–a. Farm Statistics. An elementary subject dealing with problems of chance in everyday occurrences, and with some consideration of dispersion and correlation. Prof. Eastman.

Prerequisite: Algebra. Elective second year. Lec., 1 hr.; lab., 2 hrs.; prep., 3 hrs.; 6 units.

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. Prof. Taylor.

Required second year. Lec. and rec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units.

* Only Two-Year students in Agriculture are admitted to these subjects, except by special arrangement with the Dean.

202–a. 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. Mr. Higgins.

Required second year. Lec. and rec., 3 hrs.; lab., 2 hrs.; prep., 3 hrs.; 8 units.

203–b. Soils. Textbook 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. Higgins.

Required second year. Lec. and rec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

204–b. Manures and Fertilizers. Textbook and recitations upon the constituents of farm manures, the home-mixing of fertilizers, and the modifications required by different soils and crops. Prof. Taylor.

Elective second year. Lec. and rec., 3 hrs.; prep., 4 hrs.; 7 units.

ANIMAL HUSBANDRY

201–b. Types and Breeds of Livestocks. 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.

Required first year. Lec. and rec., 3 hrs.; lab., 2 hrs.; prep., 4 hrs.; 9 units.

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.

Required second year. Lec. and rec., 3 hrs.; prep., 4 hrs.; 7 units.

203–a. Anatomy of Farm Animals. Same as A. H. 4–a. 7½ units. Prof. Martin.

204–b. Animal Diseases. Same as A. H. 5–b. 7½ units. Prof. Martin.

205–a. Animal Breeding. Same as A. H. 7–a. 10 units.

206–c. Animal Diseases. Same as A. H. 6–c. 7½ units. Prof. Martin.

BOTANY

201–a. 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. Dunn.

Required first year. Lec. and rec., 2 hrs.; lab., 4 hrs.; prep., 2 hrs.; 8 units.

202–b. Elements of Botany. Similar to 201–a. Mr. Dunn.

Required first year. Lec. and rec., 2 hrs.; lab., 2 hrs.; prep., 2 hrs.; 6 units.

203–c. Fungous Diseases of Plants. The principal fungous diseases, their cure and their prevention. Mr. Dunn.

Required first year. Lec. and rec., 1 hr.; lab., 2½ hrs.; prep., 1½ hrs.; 5 units.

AGRICULTURAL CHEMISTRY

201–a. Agricultural Chemistry. A study of the elementary principles of chemistry, with special emphasis upon the elements of importance in agriculture. Prof. Phillips and Mr. Pickett.

Required first year. Lec. and rec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units.

202–b. Agricultural Chemistry. Elements of the chemistry of plants, soils, fertilizers, lime, foods and animal physiology. Prof. Phillips and Mr. Pickett.

Prerequisite: Agricultural Chemistry 201–a. Required first year. Lec. and rec., 2 hrs.; lab., 2½ hrs.; prep., 3½ hrs.; 8 units.

DAIRY HUSBANDRY

201–a. Farm Dairying. A general survey of the field of dairy husbandry in all its phases. Mr. Moore.

Required first year. Lec. and rec., 3 hrs.; lab., 2 hrs.; prep., 5 hrs.; 10 units.

202–b. Manufacturing Dairy Products. Producing, handling and distributing milk; manufacturing and distributing ice cream, butter, condensed milk and other dairy products. Mr. Moore.

Elective second year. Lec. and rec., 3 hrs.; lab., 2½ hrs.; prep., 4½ hrs.; 10 units.

203–c. Dairy Production. The field of dairy husbandry in its relation to the producer. Care, feeding and management of dairy animals; dairy herd development; dairy cattle judging. Prof. Fuller.

Elective second year. Lec. and rec., 3 hrs.; lab., 2 hrs.; prep., 4 hrs.; 9 units.

ENGLISH

201–a, 202–b, 203–c. Grammar and Elementary Composition. Prof. Cortez.

Required first year. Lec. and rec., 3 hrs.; prep., 5 hrs.; 8 units.

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. Prof. O'Kane and Prof. Lowry.

Required second year. Lec. and rec., 2 hrs.; lab., 2½ hrs.; prep., 2½ hrs.; 7 units.

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. Prof. Stevens.

Required second year. Lec. and rec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

HORTICULTURE

201–c. Fruit Growing. This subject embraces a study of commercial orcharding. Each fruit is studied with reference to planting, culti-

vating, pruning, fertilizing, picking, packing, storing and marketing. Prof. Potter.

Required first year. Lec. and rec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

202–c. Vegetable Gardening. A study of the commercial methods of vegetable growing. Special attention is given to the home garden. Prof. Hepler.

Elective second year. Lec. and rec., 2 hrs.; lab., 2½ hrs.; prep., 2½ hrs.; 7 units.

203–a. Greenhouse Management. Combined lecture, demonstration and laboratory work in greenhouse management. Mr. Macfarlane.

Elective second year. Lec. and rec., 2 hrs.; lab., 2 hrs.; prep., 3 hrs.; 7 units.

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. Prof. Hepler.

Elective second year. Lec. and rec., 2 hrs.; lab., 2 hrs.; prep., 4 hrs.; 8 units.

205–a. 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. Prof. Latimer.

Elective second year. Lec. and rec., 3 hrs.; prep., 5 hrs.; 8 units.

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. Prof. Latimer.

Elective second year. Lec. and rec., 2 hrs.; lab., 2½ hrs.; prep., 2½ hrs.; 7 units.

207–a, 208–b, 210–c. Advanced Horticulture. Special work in any phase of horticulture may be taken by arrangement with the head of the department. Prof. Potter and staff.

Prerequisites will depend upon the work taken. Elective second year. Hours and units 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, hive fittings, and winter cases. Prof. Hepler.

Elective second year. Lec. and rec., 2 hrs.; lab., 2½ hrs.; prep., 2½ hrs.; 7 units.

POULTRY HUSBANDRY

201–a. 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. Prof. Charles and Mr. Stuart.

Lec. and rec., 3 hrs.; lab., 2 hrs.; prep., 3 hrs.; 8 units.

203–b. Poultry Diseases. Same as P. H. 6–b. 10 units. Dr. Bottorff.

204–c. Poultry Feeding. Same as P. H. 9–c. 10 units. Prof. Charles and Mr. Stuart.

205–a. Poultry Breeding. Same as P. H. 10–a. 7 units. Prof. Charles and Mr. Stuart.

206–b. Incubation. Same as P. H. 7–b. 10 units. Mr. Stuart.

207–c. Poultry Brooding. Same as P. H. 12–c. 4 units. Prof. Charles and Mr. Stuart.

208–a. Breeds and Judging. Same as P. H. 23–a. 6½ units. Mr. Stuart.

209–b. Poultry Marketing. Same as P. H. 17–b. 7 units. Prof. Charles.

MECHANICAL ENGINEERING

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. Prof. Stolworthy.

Lab., 5 hrs.; 5 units.

202–c. 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. A study is made of the construction, care, and management of the forge, and instruction is given in tempering, case hardening and annealing. Mr. O'Connell.

Lab., 3 hrs.; 3 units.

203–c. Wood Shop. Farm carpentry and joinery. Care and use of tools, making of implements for the farm, and care of lumber on the farm. Mr. Batchelder.

Lab., 5 hrs.; 5 units.

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. Sanders.

Required first year. Lec. and rec., 3 hrs.; prep., 4 hrs.; 7 units.

NEW HAMPSHIRE AGRICULTURAL EXPERIMENT STATION

JOHN C. KENDALL, *Director*

The New Hampshire Agricultural Experiment Station, a branch of the University, was established by the state, August 4, 1887, under an act of Congress of March 2 of that year. This and subsequent acts appropriated funds for conducting research work on agricultural problems in New Hampshire and throughout the nation.

The investigations conducted by the Experiment Station vary according to their nature, some lasting through one season only and some covering a period of years. The projects of the Station which now number 84 include fundamental investigations to determine the underlying principles of agricultural science and others of more practical application.

Appropriations from the state enable the Experiment Station to carry on a much more extensive state service work on agricultural problems. 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; plants and insects are identified; blood samples from hens are tested, and *post mortem* examinations of animals made.

The library of the Experiment Station, which is open daily to students and visitors, contains complete files of all bulletins issued by the experiment stations in other states, all United States Department of Agriculture bulletins, and many other reports, bulletins and records as well as books of agriculture value.

Publications of the Station comprise 249 bulletins of the regular series and 31 circulars, 39 technical bulletins, 25 scientific contributions and 4 school bulletins. The publications cover a wide range of subjects and contain the information gathered by the experts of the Station while working on the various projects. The bulletins are issued at regular intervals and notices of publications are sent to all residents of New Hampshire requesting them.

UNIVERSITY OF NEW HAMPSHIRE EXTENSION SERVICE

(AGRICULTURE AND HOME ECONOMICS)

JOHN C. KENDALL, *Director*

What the colleges and universities are to those young men and 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. A coöperative arrangement was first made possible in 1914 between the United States Department of Agriculture, the state college and the counties of the state by the Smith-Lever Act of Congress, which appropriated funds to be offset by each state. This arrangement was extended by the State Legislature of 1925, which passed a special extension appropriation for county work, and by the Capper-Ketcham Act of Congress of 1928. There are now ten agricultural agents in the ten counties, ten home demonstration agents, and ten boys' and girls' club agents and five assistant agents. Farm management, dairying, forestry, soils and crops, poultry, horticulture, nutrition, clothing and home management demonstrations are also conducted with specialists in charge.

The extension service works largely through a group of rural people known as the Farm Bureau, one of which has been formed in each county. With its corps of fifty-two men and women the extension service relieves the college teaching staff and station workers from much of the miscellaneous extension work which they handled in the past. It also carries the work to a much larger public and carries it in a much more intimate way than it would otherwise be possible to do.

The publications of the extension service comprise 162 press bulletins, 103 circulars and 35 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.

DEGREES AND HONORS, 1929

At the Fifty-ninth Annual Commencement Exercises, Monday, June 17, 1929 at which Charles Stelzle of New York City made the Commencement address, President Edward M. Lewis conferred the following degrees and certificates:

HONORARY DEGREES

DOCTOR OF LAWS

Charles William Tobey, Temple.
William David Gibbs, St. Louis, Mo.

MASTER OF ARTS

Mary Lyon Cheney Schofield, Peterborough.
George Martin Putnam, Contoocook.

ADVANCED DEGREES

MASTER OF ARTS

In Education:

Blanche Elliott Danforth, Th.B., Gordon College, 1928, Peabody, Mass.

Florence Hamilton Hewitt, B.A., Wellesley, 1904, Portsmouth
Minor: English.
Thesis: "The Organization and Supervision of a High School English Department with Special Reference to the Problem of Working with Young Teachers."

Helen Gwendolyn Jones, B.A., U. of N. H., 1927, Concord

Frank Herbert Lewis, B.S., U. of N. H., 1922, Tilton
Minor: Educational Psychology.

Lester Eric Smith, B.A., Bates College, 1924, Rochester
Minor: English.

Ralph Frank Weston, B.A., U. of N. H., 1925, Pelham
Minor: Educational Psychology.

In History:

Patrick John Murnane, B.A., U. of N. H., 1928, Somersworth
Minor: English.

MASTER OF SCIENCE

In Agricultural and Biological Chemistry:

Frank Stott Schlenker, B.S., U. of N. H., 1927, Haverhill, Mass.
Minor: Chemistry and Physics.
Thesis: "Chemical Phases of Poultry Paralysis."

In Botany:

Russell Bissey, B.S., Colo. Agri. College, 1927, Durham
Minor: Agricultural and Biological Chemistry.
Thesis: "Relative Values of Herbicides for the Control of Mustard."

Ralph Richards Jenkins, B.S., U. of N. H., 1927, Durham
Thesis: "Effect of Hydrocyanic Acid Gas on Greenhouse Plants Sprayed with Bordeaux Mixtures."

In Chemistry:

William Prescott White, B.S., U. of N. H., 1927, Rye Beach
Minor: Agricultural and Biological Chemistry.
Thesis: "The Oxidation of Ammonia from Crude By-Product Liquors."

In Education:

Samuel Lucky Cutler, B.S., Mass. Agri. College, 1927, Springfield, Mass.
Thesis: "The Junior Craftsman League:—An Experiment in the Motivation of Manual Training for Character Education."

In Entomology:

James Gilder Conklin, B.S., Conn. Agri. College, 1926, Durham
Minor: Horticulture.
Thesis: "Some Details in the Performance of Lime-Sulphur Spray When Applied to Scale Insects."

Charles Carlton Plummer, B.S., Conn. Agri. College, 1928, Durham
Minor: Zoölogy.
Thesis: "The Life History and Control of the White Pine Weevil in New Hampshire."

Warren Adelbert Westgate, B.S., U. of N. H., 1928, Plainfield
Minor: Agricultural and Biological Chemistry.
Thesis: "Some Factors Involved in the Wetting, Penetration and Toxicity of Contact Insecticides."

In Horticulture:

Edwin Herbert Putnam, 2nd, B.S., U. of N. H., 1928, South Lyndeboro

Minor: Botany.
Thesis: "Growth Characteristics of the McIntosh Apple."
Edwin John Rasmussen, B.S., U. of Wis., 1927, Durham
Minor: Chemistry.
Thesis: "The Period of Blossom Bud Differentiation in the Baldwin and in the McIntosh Apple."
William Watson Smith, B.S., U. of N. H., 1924, Gilford
Minor: Agricultural and Biological Chemistry.
Thesis: "The Comparative Efficiency of Common and Cold Storage for Apples as Indicated by Respiration Rate."

In Mathematics:
Leo Henry Maynard, B.S., U. of N. H., 1926, Nashua
Minor: Electrical Engineering.
Thesis: "The Historical Development of Integration."

In Political Science:
Dorothy Nutting Prescott, LL.B., Portia Law, 1926, Haverhill, Mass.
Minor: Economics.

In Psychology:
George Seavey Nossiff, B.A., U. of N. H., 1928, Dover
Minor: Zoölogy.
Susan Taylor Rinear, B.A., U. of Wis., 1924, Durham
Minor: Sociology.
Thesis: "A Study of the Social Intelligence of Fifty-seven Superior 4-H Club Girls."

In Zoölogy:
Walter Albert Chipman, Jr., B.S., U. of N. H., 1927, Durham
Minor: Chemistry.
Thesis: "Studies of the Effects on the Offspring of the Prenatal Feeding of Caffeine to Albino Rats."

DEGREES CONFERRED (258)

BACHELOR OF SCIENCE

College of Agriculture (24)

Name	Course	P. O. Address
Leon Wallace Batchelder	*A. H.*	*Durham*
Woodbury Dow Bell	*For.*	*Hollis*
Maurice Elmer Bickford	*D. H.*	*Center Harbor*

Name	Course	P. O. Address
John Maurice Chandler	*For.*	*Bartlett*
Alexander Blackwood Currie	*A. H.*	*Manchester*
Clyde Sutherland Eaton	*P. H.*	*Greenville*
Guilford Smith Elwood	*P. H.*	*Derry*
John Beecher Evans	*For.*	*North Stratford*
Paul James Fenton	*T. T.*	*Andover*
Alexander Leo Guptill	*T. T.*	*Northwood*
Richard Moses Hare	*Gen.*	*Amherst*
George Warren Higgins	*Gen.*	*Salem*
Gerald Randolph Hyde	*For.*	*Goffstown*
Roger Manus Lindsay	*For.*	*Lakeport*
*Edward Butterfield McClenning	*Gen.*	*Westmoreland*
Eric Lumsden McNab	*Hort.*	*East Andover*
Walter Stokes Mason	*P. H.*	*Canobie Lake*
Warren Edward Percival	*For.*	*Gorham*
Frank Dudley Reed	*P. H.*	*Newport*
*Charles Mermier Smith	*Hort.*	*Laconia*
*Carl Emil Walker	*For.*	*Contoocook*
Howard Melvin Wiggin	*Gen.*	*Stratham*

College of Liberal Arts (102)

Oscar Sumner Aiken	*Econ.*	*Farmington*
*Harold Willey Avery	*Bus. Fund.*	*Manchester*
Theodore Henry Ayer	*Educ.*	*Milton Mills*
Harold Marshall Babbitt	*Bus. Fund.*	*Hartford, Conn.*
Madelene Edson Bakeman	*Sociology*	*Franklin*
Edwin Betz	*Zoölogy*	*Whitefield*
Jane Elizabeth Blake	*Econ.*	*Manchester*
Dorothy Claire Block	*H. E. Tr.*	*North Hampton*
Joseph Edward Bourque	*Zoölogy*	*Somersworth*
Mary Elizabeth Breck	*H. E. Tr.*	*Claremont*
Elizabeth Frances Brown	*H. E. I.*	*Ashland*
Florence Melissa Brown	*Math.*	*Derry*
Fred Herman Brown	*Econ.*	*Concord*
Robert Edmund Bruce	*Educ.*	*Ashland*
Edward Henry Buffam	*Pre-Med.*	*Manchester*
David Robert Campbell	*Arch.*	*Durham*
William Laurence Chadwick	*Bus. Fund.*	*Sutton*

Name	Course	P. O. Address
*Randolph Wallace Chapman	*Educ.*	*Groveton*
Elizabeth Lucinda Child	*Educ.*	*Woodsville*
Doris Hilda Clifford	*Educ.*	*Conway*
Hurley Eliphalet Cloutman	*Zoölogy*	*Conway*
Mildred Viola Corey	*Phys. Ed.*	*Manchester*
Dane Pettee Cummings	*Bus. Fund.*	*Peterboro*
Margeret Valentina Dicey	*H. E. I.*	*East Derry*
Gordon Sumner Dow	*Bus. Fund.*	*North Hampton*
John Henry Dow	*Bus. Fund.*	*Lakeport*
Roger Herwald Downing	*Bus. Fund.*	*Wentworth*
Lloyd Walter Dunlap	*Educ.*	*Laconia*
Gertrude Alice Eldridge	*Sociology*	*Cambridge, Mass.*
Lloyd Llewellyn Evans	*Bus. Fund.*	*Wentworth*
Ralph Maxon Garlock	*Econ.*	*Manchester*
Arthur Gilbert	*Pre-Med.*	*Somersworth*
Carmel Irene Goodhue	*H. E. I.*	*Wolfeboro*
Crystal Goodwin	*Sociology*	*Dover*
Beatrice Abigail Gray	*H. E. Tr.*	*Bellows Falls, Vt.*
Donald Brooks Harriott	*Sociology*	*Concord*
Harris Hatch	*Econ.*	*Stratham*
John Knight Hatch	*Bus. Fund.*	*Dover*
John Enoch Hayford, Jr.	*Bus. Fund.*	*Newton*
Virginia Porter Haynes	*Sociology*	*Brookline, Mass.*
Clarissa Hills	*Econ.*	*Pelham*
Ethel Mae Hobbs	*Sociology*	*Somersworth*
Joseph Mahlan Houser	*Pre-Med.*	*Canterbury*
*Cecil Vernon Howell	*Math.*	*Dover*
Isabelle Madeline Huntoon	*Sociology*	*Warner*
Earle Fletcher Jenkins	*Educ.*	*Bradford, Vt.*
Robert Otis Jennings	*Econ.*	*Winchester, Mass.*
James Joseph Johnson	*Chem.*	*Somersworth*
George Elias Joslin	*Sociology*	*Spofford*
Theodore Louis Karabelas	*Pre-Med.*	*Dover*
Norman Luther Larson	*Educ.*	*Berlin*
Pauline LeClaire	*H. E.*	*Nashua*
Morris Leo Leopold	*Pre-Med.*	*Lisbon*
Winston Hammond Lothrop	*Bus. Fund.*	*Dover*
Stewart Foster Lovell	*Bus. Fund.*	*Goffstown*
Edward James McNamara	*Bus. Fund.*	*West Lebanon*

Name	Course	P. O. Address
Helen Lavinia McShane	*Econ.*	*Dover*
John Joseph Mara	*Pre-Med.*	*Manchester*
Evelyn Alice Melendy	*H. E.*	*Bedford*
Willard Everett Mooar	*Botany*	*Hudson*
Miriam Andrews Nealley	*Zoölogy*	*South Berwick, Me.*
John Francis Nelson	*Arch.*	*Gloucester, Mass.*
Norbert Coyne Nodes	*Bus. Fund.*	*Bergenfield, N. J.*
Arnold Frederick Noyes	*Bus. Fund.*	*Sunapee*
James Diamond Osgood	*Sociology*	*Pittsfield*
Isabelle Paige	*H. E. Tr.*	*Weare*
Sylvester Mansfield Parshley	*Econ.*	*Wolfeboro*
Cynthia Madalyn Patten	*H. E. I.*	*Brookline, Mass.*
Charlotte Mildred Pearl	*H. E. Tr.*	*Exeter*
Charlotte Lucy Peaslee	*H. E. Ext.*	*Reed's Ferry*
*Ruth Emery Pitcher	*H. E. Tr.*	*Keene*
Hattie Frances Record	*Educ.*	*East Jaffrey*
Gordon Franklin Reed	*Econ.*	*Gorham*
David Dunlop Robinson	*Arch.*	*Lawrence, Mass.*
Edward Isaac Rosenthal	*Pre-Med.*	*Manchester*
Marion Russell	*Zoölogy*	*Dover*
Robert Everett Sargent	*Bus. Fund.*	*Franklin*
Paul Hayward Scovell	*Educ.*	*Unity*
Gordon Bailey Seavey	*Econ.*	*Westford, Mass.*
*Charles Arthur Sewell	*Math.*	*Dover*
Richard Emery Smith	*Econ.*	*Laconia*
Wilmot Haven Smith	*Arch.*	*Plymouth*
Carolyn Emma Soper	*H. E. I.*	*Shelbourne Falls, Mass.*
*Alice Spinney	*Sociology*	*Worcester, Mass.*
Clarence Emons Sprague	*Econ.*	*Concord*
Lucy Catharine Stewart	*H. E. I.*	*Exeter*
Ronald Edmund Tetley	*Econ.*	*Laconia*
Roger Ramsdell Thompson	*Econ.*	*Somersworth*
Ruth Eliza Thompson	*Zoölogy*	*Hudson*
Edward Francis Tilc	*Botany*	*Groveton*
Rodger Milton Tolman	*Educ.*	*Rochester*
Ross Vilardo	*Pre-Med.*	*Garfield, N. J.*
Gardner Howard Wales	*Econ.*	*Penacook*
Margaret Elizabeth Walsh	*Math.*	*Lexington, Mass.*

Name	Course	P. O. Address
Frank Emil Watts, Jr.	*Bus. Fund.*	*Malden, Mass.*
Warren Gilbert Wentworth, Jr.	*Botany*	*Dover*
Marjorie Marie West	*Zoölogy*	*Worcester, Mass.*
Henry Ambrose Willey	*Econ.*	*Durham*
Louise Sherman Woodman	*Math.*	*Woburn, Mass.*
Ruth Louise Woodman	*Sociology*	*Amesbury, Mass.*
Frank George Woodward	*Econ.*	*Woodsville*
Harriett Frances Wyatt	*H. E. Tr.*	*North Rochester*

College of Technology (42)

Arthur Joseph Adams	*Chem.*	*Somersworth*
Robert Cuthbert Adams	*C. E.*	*Gilsum*
Edward Neil Aldrich	*Chem.*	*Lancaster*
Frank Clement Ames	*C. E.*	*Wilton*
George Lloyd Atwood	*I. E.*	*Berlin*
Willard Frederick Bean	*C. E.*	*Errol*
David Milton Beck	*Arch.*	*Durham*
Leon Eli Boodey	*E. E.*	*Barrington*
George James Bowden	*Chem.*	*Somersworth*
Charles Anthony Bujnievicz	*Chem.*	*Laconia*
Edward Parker Burnham	*I. E.*	*Nashua*
Thomas Arthur Caie	*I. E.*	*Berlin*
Justin Munro Clark	*Chem.*	*Portsmouth*
Thomas William Colby	*E. E.*	*Haverhill, Mass.*
Real DesRochers	*Chem.*	*Manchester*
Theodore Elliott	*E. E.*	*Dover*
Charles Richard Fish	*Chem.*	*East Kingston*
*Kenneth Eugene Glidden	*Chem.*	*South Berwick, Me.*
Hollis Robert Goode	*Chem.*	*Winchester, Mass.*
Melville Stuart Hodgdon	*E. E.*	*Dover*
Edward Hamilton Hunt	*I. E.*	*Exeter*
Reginald Foster Knapton	*Arch.*	*Henniker*
Raymond Malcolm Knight	*I. E.*	*New London*
Wilfred Burleigh Krabek	*Chem.*	*Dover*
**Kenneth Stacy Lane	*C. E.*	*Concord*
Joseph Walton Langford	*E. E.*	*East Candia*
Daniel Joseph Lucinski	*C. E.*	*Haverhill, Mass.*
Everett Brooks Moore	*E. E.*	*Keene*
Leon Uless Morrissette	*E. E.*	*Farmington*

Name	Course	P. O. Address
Albert Robert Neal	*E. E.*	*Portsmouth*
Edward Arthur Necker	*I. E.*	*West Norwood, N. J.*
John Lewis Phillips	*E. E.*	*Rochester*
Warren Baker Pinney	*Arch.*	*Springfield, Mass.*
Herbert Briggs Reed	*M. E.*	*Keene*
Francis Chadbourne Savage	*I. E.*	*Groveton*
Bernard Shedd	*Chem.*	*Manchester*
Robert Leslie Snodgrass	*Arch.*	*Berlin*
William Albert Stocker	*Arch.*	*Sunapee*
Malcolm Percival Toone	*Arch.*	*West Concord*
Carl Emil Turschmann	*E. E.*	*Somersworth*
Stanley Norman Vogel	*C. E.*	*Manchester*
John Quincy Wendell	*E. E.*	*Portsmouth*

BACHELOR OF ARTS

College of Liberal Arts (90)

Peter John Agrafiotis	*Hist.*	*Manchester*
Margaret Baker	*Hist.*	*Manchester*
Mary Haywood Barker	*Eng.*	*New Castle*
Charles Edwin Batchelder	*Eng.*	*Portsmouth*
*Elisabeth Blum Bauer	*Eng.*	*Durham*
Frederic Moore Biathrow	*Hist.*	*Hanover*
Mildred Evelyn Brannen	*Eng.*	*Durham*
Marjorie Lind Britton	*Hist.*	*Marlboro*
Ralph Adams Brown	*Hist.*	*Concord*
John Ogden Buckley	*Poli. Sci.*	*Nashua*
Gertrude Burnham	*Eng.*	*Grafton Center*
Arthur Travers Burroughs	*Hist.*	*Hudson*
Earl Francis Cahalan	*Hist.*	*West Somerville, Mass.*
Celia Storrs Campbell	*Eng.*	*Enfield, Conn.*
*Martha Grace Carl	*Hist.*	*Schenectady, N. Y.*
Marian Louise Cheney	*Latin*	*South Berwick, Maine*
John Revie Clark	*Hist.*	*Manchester*
Esther Mary Cleveland	*French*	*North Stratford*
Ethel Mary Collins	*Eng.*	*Portsmouth*
Walter Woodworth Cook	*Eng.*	*Manchester*
Margaret Laura Cournoyer	*French*	*East Jaffrey*

Name	Course	P. O. Address
Edward William Crawford	*Music*	*Manchester*
Marjorie Agnes Dahlberg	*French*	*Manchester*
Burnham Burrowes Davis	*Eng.*	*Conway*
Marjorie Dillingham	*Hist.*	*Somersworth*
Winona Mabel Dimock	*French*	*Portsmouth*
Merial Louise Duncan	*Art*	*Manchester*
Lillian Eleanora Ekstrom	*French*	*Manchester*
Lyle Harlan Farrell	*Eng.*	*Portland, Maine*
Leo Patrick Fitzgerald	*Hist.*	*Dover*
*John Daly Fleming	*Eng.*	*Flushing, N. Y.*
Richard Joseph Flynn	*Pre-Law*	*Dover*
Ralph Lees Fowler	*Poli. Sci.*	*Dover*
Horace Brown Francis	*French*	*Manchester*
Irene Louise Gadbois	*Eng.*	*Manchester*
Rober Wendell Googins	*Hist.*	*Dover*
*Iva Louise Handy	*Eng.*	*Keene*
Eleanor Woodward Harris	*Hist.*	*Keene*
Kora Temple Harris	*Latin*	*Boothbay Harbor, Maine*
Mary Louise Haselton	*Hist.*	*Manchester*
Charlotte Pauline Hirschner	*Eng.*	*Amesbury, Mass.*
Ruth Frances Horne	*Eng.*	*Rochester*
Gerald Albion Jack	*French*	*Topsham, Maine*
John Alfred Jackson	*Hist.*	*Durham, Conn.*
Lloyd Charles Johnson	*Poli. Sci.*	*Milford*
Walter Leslie Jones	*Poli. Sci.*	*Bellows Falls, Vt.*
Raymond Joseph Joyal	*Hist.*	*Somersworth*
John Thomas Kelley	*Poli. Sci.*	*Nashua*
Mary Helen Kidder	*Eng.*	*New London*
Paul James Kirvan	*Poli. Sci.*	*Portsmouth*
Eloise Leocadie Ledoux	*French*	*Nashua*
Dorothy Mae Little	*French*	*Methuen, Mass.*
Julia Winter Locke	*French*	*Saco, Maine*
Alice Frances McWeeney	*Ger.*	*Nashua*
William Anthony Mahoney	*Eng.*	*North Conway*
John Marcellus Manning	*Poli. Sci.*	*Durham*
*Ella Josephine Martin	*Psych.*	*Hartland, Vt.*
Marshall Edward Messenger	*Poli. Sci.*	*Westmoreland*
Elizabeth Claire Moynihan	*Latin*	*North Walpole*

NAME	COURSE	P. O. ADDRESS
Elizabeth Louise Murdoch	*Eng.*	*Manchester*
Wallace Stevens Nelson	*Poli. Sci.*	*Portsmouth*
Maurice Seymour Nichols	*Pre-Law*	*Henniker*
Ruth Gertrude Norris	*Latin*	*Woodsville*
Gertrude Elizabeth Nye	*Eng.*	*Atkinson*
*Esther Elizabeth Otis	*Latin*	*Farmington*
Ruth Beveridge Phelps	*Eng.*	*Durham*
Gyneth Prew	*Eng.*	*Foxboro, Mass.*
Lawrence Sargent Putnam	*Hist.*	*South Lyndeboro*
Shirley Gertrude Putnam	*Eng.*	*Portland, Maine*
Archie Rabinovitz	*Eng.*	*Concord*
Mary Gertrude Raymond	*Latin*	*Reed's Ferry*
Robert Hodgkins Reynolds	*Poli. Sci.*	*Dover*
Eugene Edward Rourke	*Hist.*	*Exeter*
Joseph Sandy Roy	*Psych.*	*Amesbury, Mass.*
Helen Frances St. George	*Eng.*	*Walpole*
Francis John Silvia	*Hist.*	*Middleboro, Mass.*
Dorothy Rita Slack	*Eng.*	*Stratham*
Esther Hervey Smith	*Eng.*	*Dover*
Arthur Ladd Somers	*Poli. Sci.*	*Gloucester, Mass.*
Leon Leslie Soule	*Poli. Sci.*	*Brunswick, Maine*
Louise Amelia Sprague	*French*	*Concord*
**Lewis Morgrage Stark	*Music*	*Goffstown*
Robert Joseph Starke	*Eng.*	*Lawrence, Mass.*
John Wilbur Tahaney	*Poli. Sci.*	*Beverly, Mass.*
Julia Alice Taylor	*French*	*Durham*
*Mary Elizabeth Timmins	*French*	*Exeter*
John Demosthenes Valakis	*Hist.*	*Manchester*
James Gray Walls	*Poli. Sci.*	*Newton*
Celia Thaxter Williams	*Hist.*	*New Castle*
Norman Holt Young	*Hist.*	*Rochester*

* Indicates "With Honor" (average of 85 to 90 for college course).
** Indicates "With High Honor" (average of 90 or above for college course).

TWO-YEAR CERTIFICATES

College of Agriculture (6)

Charles Warren Brown	*Hampton Falls*
Howard Newton Bullock	*Saxton's River, Vt.*

UNIVERSITY OF NEW HAMPSHIRE

Name	P. O. Address
Karl Edward Fish	*Peterboro*
Arthur Massingham	*Durham*
Roy George Parkhurst	*Colebrook*
Charles Richard Waters	*Hampton*

PRIZES AWARDED, 1929

BAILEY PRIZE

Kenneth Eugene Glidden, South Berwick, Maine

BARTLETT PRIZE

John Henry Adams, Keene

KATHERINE DeMERITT MEMORIAL PRIZE

Carrie May Hopkins, Francestown

DIETTRICH MEMORIAL CUP

Elizabeth Margaret Ahern, Charlestown

ERSKINE MASON MEMORIAL PRIZE

Gertrude Elizabeth Nye, Atkinson

HOOD ALL-ROUND ACHIEVEMENT PRIZE

George Lloyd Atwood, Berlin

HOOD DAIRY CATTLE JUDGING PRIZES

Bernard Arthur Kimball, Contoocook
Eugene Henry Seften, Bedford, Mass.
Alonzo Robertson Gile, Tilton

MILITARY HONOR MEDAL

Randolph Wallace Chapman, Groveton

AMERICAN LEGION AWARD

Thomas William Colby, Haverhill, Mass.

PHI MU MEDAL

Ruth Emery Pitcher, Keene

PHI SIGMA PRIZE

Ruth Eliza Thompson, Nashua

CLASS OF 1899 PRIZE

Edward Butterfield McClenning, Westmoreland

MASK AND DAGGER ACHIEVEMENT PRIZE

Charlotte Pauline Hirschner, Amesbury, Mass.

UNIVERSITY OF NEW HAMPSHIRE

DELTA CHI ACHIEVEMENT PRIZE

Leonard Boast Bushey, Concord

CHI OMEGA PRIZE

Yvette DuPaul Menard, Manchester

ALPHA XI DELTA CUP

Mary Elizabeth Timmins, Exeter

ALPHA CHI OMEGA PRIZE

Elizabeth Margaret Ahern, Charlestown

EDWARD THOMSON FAIRCHILD PRIZES

Paul James Kirvan, Portsmouth
Thomas W. Colby, Haverhill, Mass.
David Robert Campbell, Durham

PSI LAMBDA SCHOLARSHIP CUP

Dorothy Claire Block, North Hampton

INTERCOLLEGIATE WRITING CONTEST

Essays:

First Prize—Doris H. Vivian, Gloucester, Mass.
Second Prize—Elizabeth M. Ahern, Charlestown

Short Stories:

First Prize—Elizabeth M. Ahern, Charlestown

Poems:

First Prize (co-winner)—Dorothy P. Duncklee, West Lebanon

STUDENTS, 1929–1930

ABBREVIATIONS DESIGNATING COURSES

Agr. Ch.—Agricultural Chemistry
Arch.—Architecture
A. Ch.—Arts Chemical
A. Cn.—Architectural Construction
A. G.—Arts General
Agr.—General Agriculture
Agr. Tr.—Agriculture, Teacher Training
A. H.—Animal Husbandry
Bus. Fund.—Business Fundamentals
C. E.—Civil Engineering
Ch. E.—Chemical Engineering
D. H.—Dairy Husbandry
Ed. Tr.—Education, Teacher Training
Educ.—Professional Education
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
Phys. Ed.—Professional Physical Education for Women
Pre-Law—Pre-Law
Pre-Med.—Pre-Medical

GRADUATE STUDENTS (56)

NAME	COURSE	P. O. ADDRESS
Abbott, Harold Elliott, B.S. New Hampshire, 1928	*Major Chemistry*	*Lakeport*
Ames, Elizabeth H., A.B. Mount Holyoke, 1927	*Major Zoölogy*	*Somersworth*
Bauer, Elizabeth Blum, B.A. New Hampshire, 1929	*Major English* *Minor German*	*Durham*

Name	Course	P. O. Address
Bourque, Joseph Edward, B.S. New Hampshire, 1929	*Major Zoölogy* *Minor Chemistry*	*Somersworth*
Breck, Mary Elizabeth, B.S. New Hampshire, 1929	*Major Home Econ. Tr.*	*Windsor, Vt.*
Daggett, Albert Frederick, B.S. New Hampshire, 1928	*Major Chemistry* *Minor Mathematics*	*Concord*
Dearborn, Roland Balch, B.S. New Hampshire, 1928	*Major Horticulture* *Minor Agr. Chemistry*	*New Boston*
Eastwood, Medora Viola, B.S. New Hampshire, 1927	*Major Home Econ. Inst.*	*Plymouth, Mass.*
Eaton, Frank Lewell, B.A. Oskaloosa College, 1925	*Major Education*	*Wells, Maine*
Eddy, George Norman, Th.B. Gordon College, 1929	*Major Sociology* *Minor Psychology*	*Durham*
Eddy, Ruth Garland, Th.B. Gordon College, 1929	*Major Sociology* *Minor Psychology*	*Durham*
Ekdahl, Hulda Elisabeth, B.A. Syracuse University, 1923	*Major Education* *Minor History*	*Nashua*
Elliott, Charles Ned, B.A. New Hampshire, 1928	*Major History* *Minor English*	*Contoocook*
Fox, Robert Howard, B.A. Ohio State, 1929	*Major Entomology* *Minor Botany*	*Dayton, Ohio*
Fritz, James Clarence, B.S. Penn State, 1929	*Major Agr. and Bio. Chem.* *Minor Zoölogy*	*Berlin, Penn.*
Fuller, John McElroy, B.S. Iowa State, 1911	*Major Dairy Husbandry* *Minor Economics*	*Durham*
Fussell, Clyde Greenleaf, B.A. Middlebury, 1925	*Major Education*	*Whitefield*
Geremonty, Francis Howard, B.S. New Hampshire, 1925	*Major Political Science* *Minor History*	*Manchester*
Googins, Robert Wendell, B.A. New Hampshire, 1929	*Major Education* *Minor History*	*Dover*
Gordon, Philip Augustine, Th.B. Gordon College, 1928	*Major Philosophy* *Minor History*	*Groveland, Mass.*
Guptill, George Herbert, B.A. New Hampshire, 1928	*Major Political Science* *Minor History*	*Raymond*

GRADUATE STUDENTS

Name	Course	P. O. Address
Hill, Bernice Mary, B.S. New Hampshire, 1923	*Major Education*	*Center Strafford*
Hoitt, Samuel Waldo, B.S. New Hampshire, 1928	*Major Agr. Economics* *Minor Statistics*	*Durham*
Joyal, Raymond Joseph, B.A. New Hampshire, 1929	*Major History* *Minor Education*	*Somersworth*
Krabek, Wilfred Burleigh, B.S. New Hampshire, 1929	*Major Chemistry* *Minor Mathematics*	*Dover*
Landelius, Conrad Goethe E., Th.B. Gordon College, 1928	*Major Sociology* *Minor Phil. and Psychology*	*Brooklyn, N. Y.*
Lane, Walter Eben, B.A. Bates College, 1912	*Major Education*	*North Berwick, Me.*
Lowry, Mrs. Doris Gallup, B.S. Simmons College, 1923	*Major English* *Minor History*	*Durham*
McKelvey, Isabelle Wilder, B.A. Wheaton College, 1921	*Major Education*	*Whitefield*
Martin, Josephine Ella, B.A. New Hampshire, 1929	*Major Psychology* *Minor Zoölogy*	*Hartland, Vt.*
Morrison, Leonard Samuel, B.S. New Hampshire, 1910	*Major Education*	*Whitefield*
Murphy, Anna Dorothy, B.A. Boston University, 1929	*Major French* *Minor English*	*Springfield, Vt.*
Murray, Harry Lee, B.S. University of Maine, 1929	*Major Botany*	*Hampden Highlands, Maine*
Nulsen, William B., B.S. Calif. Inst. of Technology, 1918	*Major Mathematics* *Minor E. E.*	*Durham*
Nye, Gertrude Elizabeth, B.A. New Hampshire, 1929	*Major English* *Minor French*	*Westville*
Parkinson, Everton Harry, B.A. Wesleyan, 1926	*Major Education*	*Whitefield*
Pease, Perley Henry, B.S. New Hampshire, 1926	*Major Education*	*Meredith*
Pickett, Thomas Austin, B.S. Mass. Agr. Coll., 1928	*Major Agr. and Bio. Chem.* *Minor Chemistry*	*Beverly, Mass.*
Putnam, Shirley Gertrude, B.A. New Hampshire, 1929	*Major English* *Minor Education*	*Portland, Maine*

Name	Course	P. O. Address
Rasmussen, Edwin John, B.S., M.S. Univ. of Wisconsin, 1927	*Major Horticulture* *Minor Botany*	*Durham*
Redden, Elizabeth Adelaide, B.A. New Hampshire, 1928	*Major Sociology* *Minor Education*	*Dover*
Rosenthal, Edward Isaac, B.S. New Hampshire, 1929	*Major Zoölogy* *Minor Chemistry*	*Manchester*
Scott, R. Beatrice, B.A. Wellesley College, 1913	*Major English* *Minor Education*	*Wolfeboro*
Sewell, Charles Arthur, B.S. New Hampshire, 1929	*Major Mathematics* *Minor Education*	*Dover*
Smith, Charlotte Marie, B.S. New Hampshire, 1927	*Major Zoölogy*	*Dover*
Stark, Lewis Morgrage, B.A. New Hampshire, 1929	*Major English* *Minor History*	*Goffstown*
Swain, Howard Eugene, B.S. New Hampshire, 1916	*Major Education*	*Exeter*
Tepper, Albert Edward, B.S. Penn State, 1928	*Major P. H.* *Minor Agric. Economics*	*Ridley Park, Pa.*
Thompson, Ruth Eliza, B.S. New Hampshire, 1929	*Major Zoölogy* *Minor Botany*	*Nashua*
Tyler, Kenneth Ellsworth, B.S. Tufts, 1922	*Major Education*	*Hampton*
Walker, Carl Ernest, B.S. New Hampshire, 1929	*Major Forestry* *Minor Botany*	*Contoocook*
Watson, Alice Louise, B.S. New Hampshire, 1928	*Major Agric. Chemistry* *Minor Education*	*Durham*
Wellman, Mrs. Blanche Walker, B.A. Colby College, 1898 New Hampshire, M.A , 1928	*Major Education*	*Durham*
Weston, Helen Brown, B.S. New Hampshire, 1917	*Major Education*	*Whitefield*
Woodman, Louise Sherman, B.S. New Hampshire, 1929	*Major Education*	*Woburn, Mass.*
Wright, Murray Johnson, B.A. Dartmouth, 1926	*Major Education*	*Alton*

SENIORS (341)

Name	Course	P. O. Address
Abbiati, Flora Regina	*A. G.*	*Milford*
Adams, John Henry	*A. G.*	*Keene*
Adams, Robert Wallace	*E. E.*	*Pittsfield*
Adams, Watson Clark	*E. E.*	*Exeter*
Agranovitch, Edward Irving	*Pre-Law*	*Colchester, Conn.*
Ahern, Elizabeth Margaret	*A. G.*	*Charlestown*
Allan, Philip Farley	*A. G.*	*West Lebanon*
Allen, William Henry	*A. G.*	*Conway Center*
Allsworth, Clayton Reed	*A. G.*	*Branford, Conn.*
Amsden, Hope Adelaide	*A. G.*	*Dover*
Andrews, Muriel Elizabeth	*A. G.*	*Somersworth*
Annett, Dorothy Adaline	*A. G.*	*Rollinsford*
Annon, Roberta Charlotte	*A. G.*	*Manchester*
Arren, John Francis	*E. E.*	*Manchester*
Atwood, Bryce Olding	*E. E.*	*Manchester*
Atwood, Elizabeth	*H. E. I.*	*Pelham*
Atwood, Marjorie Alice	*Educ.*	*Pelham*
Averka, Peter Charles	*A. G.*	*Lawrence, Mass.*
Bachelder, Harvey Lloyd	*Bus. Fund.*	*Concord*
Bailey, John Weston	*M. E.*	*West Newbury, Mass.*
Baker, Chester Aloysius	*A. G.*	*Portsmouth*
Baldwin, Hollis Walter	*A. G.*	*Colebrook*
Ball, Beverley Winniette	*For.*	*Manchester*
Ball, Wilma Frances	*A. G.*	*Lancaster*
Ballard, Robert Gilman	*E. E.*	*Penacook*
Bannon, Loretta Marie	*A. G.*	*Laconia*
Barnes, Ernest Edward	*Agr. Tr.*	*Mason*
Bartlett, Benjamin Thomas, Jr.	*A. G.*	*Derry Village*
Bartlett, Fremont Dayton	*A. G.*	*Berlin*
Barton, Charles Almer	*M. E.*	*Newmarket*
Barton, Roger Freeman	*A. G.*	*Groveton*
Batchelder, Earl Boyce	*Bus. Fund*	*Manchester*
Bernaby, Helen Florence	*H. E. Ext.*	*Fremont*
Bianchi, Charles Francis	*A. G.*	*Worcester, Mass.*
Blaisdell, Paul Henry	*A. G.*	*Concord*
Blake, Arnold Clark	*M. E.*	*Hill*
Blakey, Bernard Edward	*Bus. Fund.*	*Peterborough*
Blodgett, Parker McKay	*Agr. Tr.*	*Kensington*

Name	Course	P. O. Address
Bodge, Dorothy Kendall	*A. G.*	*Rochester*
Boulanger, Edmee Adeline	*A. G.*	*Dover*
Boyles, Abbott Webster	*E. E.*	*Chester*
Brien, George Edward	*M. E.*	*Springvale, Maine*
Brierley, Jean	*A. G.*	*Lawrence, Mass.*
Bronson, Hazel Ruggles	*A. G.*	*Claremont*
Brooks, Mabel	*Phys. Ed.*	*Hampton*
Brown, Daniel Adams	*A. H.*	*Rowley, Mass.*
Brown, Ruth Margaret	*A. G.*	*Deerfield*
Brunel, Sara Louise	*A. G.*	*Concord*
Buckley, Anna Kathryn	*A. G.*	*Dover*
Bunker, Ruth Eleanor	*A. G.*	*Kingston*
Burnham, Florence Ethel	*A. G.*	*Kittery, Maine*
Burnham, Gertrude Mary	*A. G.*	*Grafton Center*
Butterfield, Kenneth Parmenter	*For.*	*Antrim*
Call, Arthur Joseph, Jr.	*A. G.*	*Exeter*
Callahan, Millicent Eda	*H. E. Tr.*	*Enfield*
Calnan, Beatrice Brennan	*Educ.*	*Manchester*
Castle, Mildred Frances	*A. G.*	*Laconia*
Chapman, Bernard Fulton	*A. G.*	*Groveton*
Chase, Clayton Warren	*C. E.*	*Milford*
Chellis, Margaret Louise	*A. G.*	*Kezar Falls, Maine*
Churchill, Edith Mary	*A. G.*	*Raymond*
Churchill, Randolph Emerson	*A. G.*	*Dover*
Clark, Beatrice Ethel	*A. G.*	*Dover*
Clark, Jesse Keyes	*E. E.*	*Charlestown*
Clement, William George	*A. G.*	*Laconia*
Cleveland, Harlan Samuel	*A. G.*	*North Stratford*
Clifford, Alene Estelle	*Educ.*	*Conway*
Cohen, Sophie Adella	*A. G.*	*Portsmouth*
Colby, Halstead Norman	*I. E.*	*Concord*
Collins, Arthur Bailey, Jr.	*For.*	*Hampton*
Connor, Lester Earl	*A. H.*	*Henniker*
Cooper, Bradley Marshall	*M. E.*	*Lincoln*
Cooper, Robert Folsom	*Bus. Fund.*	*Exeter*
Couser, Thomas Clifford	*Bus. Fund.*	*Dover*
Crowley, James William	*A. G.*	*Rockland, Mass.*
Crowther, Stephen Thomas	*Educ.*	*Derry Village*
Cummings, Mary Louisa	*A. G.*	*Colebrook*

SENIORS

Name	Course	P. O. Address
Cummings, Merlyn Arthur	*M. E.*	*Alton*
Currier, Edna Louise	*A. G.*	*Salisbury, Mass.*
Dacey, Joseph James	*A. G.*	*Kingston*
Daigle, Rene Maurice	*Bus. Fund.*	*Manchester*
Damon, Mazzios	*Bus. Fund.*	*Exeter*
Dauphinee, Gertrude Chapman	*A. G.*	*Amesbury, Mass.*
Davis, Alice Lillian	*A. G.*	*Fremont*
Dawson, George Homans	*A. G.*	*Plymouth*
DeCourcy, John Henry	*A. G.*	*Manchester*
Dickinson, Louise Anna	*A. G.*	*Rochester*
Donnelly, John Joseph	*E. E.*	*Dover*
Dow, Lena May	*H. E. I.*	*North Hampton*
DuBois, William Haskell	*Bus. Fund.*	*Concord*
Duncklee, Dorothy Page	*A. G.*	*West Lebanon*
Dunlap, Lloyd Walter	*Educ.*	*Laconia*
Duquette, Henry Benjamin	*E. E.*	*Penacook*
Durgin, Evangeline	*A. G.*	*Newmarket*
Durgin, Roslyn Caverly	*Agr.*	*Newmarket*
Dustin, Frank Carleton	*C. E.*	*Penacook*
Dwyre, Katherine Claire	*A. G.*	*Canaan*
Eastham, Alice Scott	*A. G.*	*Portsmouth*
Eastwood, Eric	*Bus. Fund.*	*Lynn, Mass.*
Ellis, Clifford Weston	*Bus. Fund.*	*Nashua*
Eugley, Arthur Reddington, Jr.	*Educ.*	*Exeter*
Evans, John Beecher	*For.*	*North Stratford*
Farley, Ellen Josephine	*A. G.*	*Adams, Mass.*
Farnsworth, Hugh McLellan	*A. G.*	*Portland, Maine*
Farrand, Katherine Louise	*A. G.*	*Berlin*
Files, Bertrand Colby	*E. E.*	*Meredith*
Fitzgerald, John Thomas	*A. G.*	*Milford*
Fitzgerald, Richard A.	*A. G.*	*Manchester*
Flanigan, Justin Edward	*A. G.*	*Portsmouth*
Flayhan, Alfred Charles	*A. G.*	*Dover*
Ford, Arthur Leonard Dunning	*A. G.*	*Exeter*
Fosburgh, David Lionel	*C. E.*	*Manchester*
Frame, Marion Ellen	*A. G.*	*Center Barnstead*
French, Harold Taylor	*A. G.*	*Exeter*
Frye, Gilman Virgin	*Bus. Fund.*	*Franklin*
Fuller, Henry Ellsworth	*E. E.*	*Nashua*

Name	Course	P. O. Address
Gaffield, Alice Louise	*A. G.*	*Bradford, Vt.*
Gardner, Frederick deWitt	*A. G.*	*Portsmouth*
Gee, Warren Herbert	*M. E.*	*Winchester*
George, Howard Wakeman	*Bus. Fund.*	*Manchester*
Gienty, Edward Kenneth	*C. E.*	*Warner*
Gile, Alonzo Robertson	*D. H.*	*Tilton*
Gillette, Charles Welcome	*I. E.*	*Nashua*
Glazier, Phyllis	*A. G.*	*Salem Center*
Gleason, Margaret Elizabeth	*A. G.*	*Derry*
Goodwin, Crystal Evelyn	*A. G.*	*Dover*
Googins, Danforth Merton	*E. E.*	*Kennebunk, Maine*
Gray, Gertrude	*A. G.*	*Whitefield*
Grenier, Jacques Lionel	*A. G.*	*Manchester*
Grenier, Jean Donat	*Bus. Fund.*	*Manchester*
Griffin, Eliza Caroline	*A. G.*	*East Granby, Conn.*
Gulliver, Reginald Everett	*Educ.*	*Needham, Mass.*
Gulumian, Hrant Garabed	*M. E.*	*Penacook*
Guston, Gustaf David	*Arch.*	*Brockton, Mass.*
Hadley, George Langdon	*Pre-Law*	*Manchester*
Hall, James Henry	*A. G.*	*Warner*
Hall, Herbert Lorenzo	*A. G.*	*Plymouth*
Ham, Winifred Priscilla	*A. G.*	*Manchester*
Hammond, William Lawrence	*E. E.*	*Manchester*
Hampson, Louise Edith	*A. Ch.*	*Littleton*
Hanley, James Anthony	*A. G.*	*Franklin*
Hare, Georgianna Watson	*H. E. Tr.*	*Amherst*
Harriman, Donald Ray	*Educ.*	*Ashland*
Hartford, Lenora Elenor	*H. E. I.*	*Tilton*
Hartford, Rachel Eva	*A. G.*	*Derry*
Hartshorn, George Main	*Bus. Fund.*	*Barnstead*
Harwood, Kate Marion	*A. G.*	*Nashua*
Hayes, Maxwell Connary	*I. E.*	*Lincoln*
Hennessey, Thomas Edward	*A. G.*	*Somersworth*
Hill, Bertha Pauline	*H. E. I.*	*Manchester*
Hills, Florence	*A. G.*	*Nashua*
Hobbs, Paul Wesley	*Agr.*	*North Hampton*
Hobson, Dorothy May	*A. G.*	*Gorham*
Hodgdon, Albion Reed	*A. C.*	*Dover*
Hodgdon, Marvis Blanche	*A. G.*	*Rochester*

Name	Course	P. O. Address
Holt, Ralph Davis	*M. E.*	*Nashua*
Hopkins, Carrie May	*A. G.*	*Francestown*
Hounsell, William Booth	*A. G.*	*Conway*
Houston, Norman Johnson	*I. E.*	*Bath*
Howe, Martha Whittier	*H. E. I.*	*Portland, Maine*
Howell, Harold Alton	*For.*	*Dover*
Hunt, Stanley Elwyn	*Agr. Ch.*	*Lakeport*
Huntoon, Alonzo Herbert	*Agr. Tr.*	*Derry*
Hyde, Gerald Randolph	*For.*	*Goffstown*
Jackson, Clarence E.	*Bus. Fund.*	*Lebanon*
Jackson, James Matthew	*Pre-Law*	*Dover*
Johnson, Dorothy Preston	*A. G.*	*Nashua*
Johnson, Fred Arnold	*Arch.*	*Berlin*
Johnson, Ralph Roscoe	*Pre-Med.*	*Hampton*
Jones, Dorothy Eleanor	*A. G.*	*Manchester*
Kellam, David Bean	*Ch. E.*	*North Conway*
Kemp, Wyman Foster	*Ch. E.*	*Portland, Maine*
Kendall, Elizabeth Parker	*H. E. I.*	*Manchester*
Kidder, Mary Helen	*A. G.*	*New London*
Kimball, Russell Gibbs	*A. G.*	*Portsmouth*
King, Anna Julia	*A. G.*	*North Walpole*
Kirk, John Kenneth	*A. Ch.*	*Manchester*
Kushious, Anna Hyla	*A. G.*	*Portsmouth*
Lamb, Joseph Lane	*Ch. E.*	*Portsmouth*
Lanouette, Jessie Corinne	*A. G.*	*Somersworth*
Larrabee, Julia Lucretia	*A. G.*	*Nashua*
Lassell, Mary Bessom	*H. E. I.*	*Newmarket*
Lockwood, Grace Florence	*A. G.*	*Dover*
Lord, Florence Madeline	*A. G.*	*Conway*
Low, Winifred	*A. G.*	*Derry*
Luce, Hazel Ruth	*A. G.*	*Exeter*
Lundstrom, Edith Olivia	*A. G.*	*Worcester, Mass.*
Lyford, Walter Henry, Jr.	*Ch. E.*	*Epping*
McCann, James Philip	*A. G.*	*Dover*
McCooey, Daniel Farley	*Pre-Med.*	*Dover*
McDanolds, Margaret Roe	*A. G.*	*North Haverhill*
MacDonald, Raymond Francis	*A. G.*	*Peterborough*
McFarland, Donald Jackman	*A. G.*	*Concord*
McGrail, Marie Jeannette	*A. G.*	*Dover*

Name	Course	P. O. Address
McIntosh, Sheldon Weeks	*A. G.*	*Manchester*
McLeod, John Kenneth	*Pre-Med.*	*Concord*
Marsh, Morris Raymond	*M. E.*	*Gonic*
Marston, Evelyn Ellen	*A. G.*	*Ashland*
Martoski, Stanley John	*A. G.*	*Adams, Mass.*
Mason, Walter Stocks	*P. H.*	*Canobie Lake*
Mattoon, Gertrude Beckler	*Educ.*	*Colebrook*
Maynard, Helen Gertrude	*A. G.*	*Concord*
Meader, Faith	*Educ.*	*Gonic*
Michaud, Albert Jenness	*Bus. Fund.*	*Gorham*
Miller, Paulyn Robin	*A. G.*	*Portsmouth*
Minah, Theodore Warren	*Bus. Fund.*	*Nashua*
Mitchell, Alta Doris	*H. E. I.*	*Bristol*
Monat, Urgel Alcide	*For.*	*Durham*
Moran, Phyllis Marguerite	*A. G.*	*Somersworth*
Morin, Aline Lydia	*A. G.*	*Berlin*
Morton, Paul Fillmore	*E. E.*	*Portland, Maine*
Muchmore, Arthur Sherman	*D. H.*	*North Woodstock*
Muggleston, Harold William	*A. G.*	*Rochester*
Mulcahy, Edmund Justin	*Educ.*	*North Walpole*
Nason, Dorothy Ellsworth	*A. G.*	*Dover*
Nealley, Miriam Andrews	*A. G.*	*South Berwick, Maine*
Nelson, John Francis	*Arch.*	*Gloucester, Mass.*
Nelson, William J.	*A. G.*	*Quincy, Mass.*
Nudd, Philip	*E. E.*	*Hampton*
O'Brien, Margaret Helen	*A. G.*	*Malden, Mass.*
Palmer, Gordon Franklin	*A. G.*	*Moultonboro*
Paolino, Pasquale	*A. G.*	*Lawrence, Mass.*
Paradis, Doris Viola	*A. G.*	*Somersworth*
Parker, Clifford Addison	*Agr. Tr.*	*Exeter*
Parks, Philip Edwin	*A. G.*	*Bradford, Mass.*
Patch, Lloyd Gilman	*A. G.*	*Portsmouth*
Patenaude, Merle Roscoe	*C. E.*	*Henniker*
Peabody, Ethel Capitolia	*H. E.*	*Peterborough*
Pearson, Dorothy	*Educ.*	*Stratham*
Pearson, Marion Eva	*A. G.*	*Brookline, Mass.*
Pederson, Ernest Otto	*A. G.*	*Berlin*
Pelkey, Mildred Cecelia	*A. G.*	*Peterborough*
Perkins, Daniel Nahum	*A. G.*	*Dover*

Name	Course	P. O. Address
Perkins, Ernest Marshall	*Bus. Fund.*	*East Kingston*
Perreault, Raymond Richard	*Pre-Med.*	*Rochester*
Petazzi, Leona Louise	*A. G.*	*Milford*
Pettee, Fred Cristy	*Bus. Fund.*	*Francestown*
Pickwick, Madeline	*H. E. I.*	*Manchester*
Pike, Mary Currier	*Phys. Ed.*	*Portsmouth*
Pinkham, Marcia Winter	*A. G.*	*Portland, Maine*
Powers, Samuel Eugene	*Bus. Fund.*	*Concord*
Priest, Leona Frances	*A. G.*	*Newmarket*
Prince, George Howard	*A. G.*	*New Boston*
Prince, William Lawton	*A. G.*	*Dorchester, Mass.*
Purinton, Walter George	*C. E.*	*Raymond*
Putnam, Ida Lydia	*A. G.*	*Nashua*
Quimby, Cedric Dean	*Ch. E.*	*Claremont*
Randall, George William	*Educ.*	*Portsmouth*
Reed, Ethel Minnie	*A. G.*	*Claremont*
Reed, Gilbert Hood	*A. G.*	*Braintree, Mass.*
Reinhart, Alvin Richard	*I. E.*	*Medfield, Mass.*
Richard, Heloise Elsie	*A. G.*	*Dover*
Robinson, Kenneth Heaton	*A. G.*	*Keene*
Rogers, Frank Alna, Jr.	*A. G.*	*Franklin*
Ronald, James Andrew	*A. G.*	*Atlantic, Mass.*
Rowe, Marjorie Pauline	*A. G.*	*Concord*
Rundlett, Harold Goodsoe	*Arch.*	*Exeter*
Sacco, Victor	*Arch.*	*Portsmouth*
Sanborn, Forrest John	*A. Ch.*	*Laconia*
Savory, Emily Elizabeth	*H. E. Tr.*	*Warner*
Sawyer, Hollis Freeman	*A. G.*	*Groveton*
Sawyer, Leon Randolph	*C. E.*	*South Danbury*
Sawyer, Ray Stillman	*Bus. Fund.*	*Manchester*
Scamporino, Vincent James	*Pre-Law*	*Salem Center*
Schwartz, Louis	*A. G.*	*Portsmouth*
Scott, Harold Samuel	*Bus. Fund.*	*Milford*
Scovell, Paul Hayward	*Educ.*	*Haverhill, Mass.*
Scripture, Paul Newcomb	*Agr. Ch.*	*Surry*
Sewell, Dorothy Augusta	*A. G.*	*Dover*
Shea, John Robert	*A. G.*	*Manchester*
Sheehan, Eleanor Lucy	*A. G.*	*Portsmouth*
Shepard, Harriett Eleanor	*A. G.*	*Bedford*

Name	Course	P. O. Address
Shepard, Paul Benjamin	*A. G.*	*New London*
Simonds, Gardner William	*A. G.*	*Manchester*
Sirhakis, Nicholas William	*I. E.*	*Somersworth*
Small, John Albert	*Bus. Fund.*	*Nashua*
Smith, Edward Swan	*Arch.*	*Charlestown*
Smith, Grace Edith	*A. G.*	*Goffstown*
Smith, Harold William	*E. E.*	*Rochester*
Smith, Harry Russell, Jr.	*Pre-Law*	*Dover*
Smith, Henry Mathew	*M. E.*	*Dover*
Smith, Marion Edith	*A. G.*	*Lakeport*
Smith, Pauline Leavitt	*A. G.*	*North Hampton*
Smith, Raymond Elmer	*A. G.*	*Dover*
Southmayd, Elwyn Harold	*Pre-Law*	*Franklin*
Stevens, Isabelle	*A. G.*	*Hyde Park, Mass.*
Stevens, Jesse John	*A. G.*	*Whitefield*
Stewart, Thomas Armour	*A. G.*	*Derry*
Stolovsky, Louis	*Pre-Law*	*Lebanon*
Stolworthy, Ruth Helen	*A. G.*	*Durham*
Stone, Edith Louise	*A. G.*	*Dover*
Stoughton, Roy Leslie	*Ch. E.*	*Concord*
Sutton, John Pitkin	*A. G.*	*Colebrook*
Sylvestre, Naomi Rosana	*H. E.*	*Littleton*
Szlosek, Stanley Francis	*M. E.*	*Nashua*
Szuch, Alec Michael	*Ch. E.*	*North Walpole*
Tapscott, Raymond Thomas	*M. E.*	*Somersworth*
Tarr, Dorothy Elizabeth	*A. G.*	*North Hampton*
Tarr, Forace Austin, Jr.	*M. E.*	*North Hampton*
Taylor, Alfred Henry	*Ch. E.*	*Pearl River, N. Y.*
Terry, Joseph Church	*M. E.*	*Fall River, Mass.*
Tinker, James Foster	*E. E.*	*Manchester*
Todd, Catherine Alberta	*Educ.*	*New London*
Tomasian, Thomas	*M. E.*	*Nashua*
Tounge, Harry Goodwin, Jr.	*Pre-Med.*	*Wakefield, Mass.*
Towle, Ruth Celia	*A. G.*	*Conway*
Truell, Harold Arthur	*A. G.*	*Newport*
Tucker, Francis Pearce	*A. G.*	*Portsmouth*
Tufts, Oliver Augustus, Jr.	*A. G.*	*Lancaster*
Twombly, Gertrude Messenger	*A. G.*	*Portsmouth*
Vachon, Edmond Joseph	*A. G.*	*Dover*

SENIORS

Name	Course	P. O. Address
Vatcher, George Irving	*E. E.*	*Hancock*
Vaughan, Evelyn Frances	*A. G.*	*Groveland, Mass.*
Vaughan, Mary Eleanor	*A. G.*	*Manchester*
Vogel, Helen Frances	*H. E. Tr.*	*Manchester*
Waite, John Herrick	*A. H.*	*Peterborough*
Wallace, Douglas Murray	*A. G.*	*Tilton*
Walsh, Marguerite Elizabeth	*A. G.*	*Lexington, Mass.*
Watson, Ethel Mary	*A. G.*	*Candia*
Watson, George Wilder	*A. H.*	*Durham*
Weast, Florence Iola	*A. G.*	*Contoocook*
Webster, David Brinton	*A. G.*	*Hudson*
Webster, Russell Goodwin	*A. G.*	*South Berwick, Maine*
Wendelin, Carl Gustav	*A. G.*	*Concord*
Wettergreen, John Adams	*C. E.*	*Malden, Mass.*
Wheeler, Kenneth Eugene	*E. E.*	*New London*
White, Grace Milton	*A. G.*	*Concord*
Whittemore, John Kenneth	*Agr. Tr.*	*Londonderry*
Wilder, William Wallace	*Educ.*	*Newton*
Wile, Lester Milton	*A. G.*	*Winthrop, Mass.*
Williams, Celia Thaxter	*A. G.*	*Newcastle*
Wilson, Eunice Maude	*A. G.*	*Milan*
Withington, George Wesley	*E. E.*	*Penacook*
Wolf, Edward Isreal	*Bus. Fund.*	*Milford*
Wood, Winchester Ridout	*E. E.*	*Lebanon*
Woodward, Charles Philip	*Bus. Fund.*	*Milford*
Wright, Lawrence Whitney	*M. E.*	*Keene*
Wright, Stanley William	*A. G.*	*Rochester*
Yeaton, Rose Dearborn	*A. G.*	*Tilton*
Youland, Zelma Ruth	*A. G.*	*Manchester*
Young, Louise Shackford	*A. G.*	*Dover*

JUNIORS (335)

Name	Course	P. O. Address
Adams, Earl Marshall	*A. G.*	*Manchester*
Aldrich, Lucien Brainerd	*C. E.*	*Keene*
Alexander, Thomas Branch	*Ch. E.*	*Newport*
Allan, Richard Kent	*Bus. Fund.*	*West Lebanon*
Annis, Mary Goding	*Educ.*	*Londonderry*
Austin, George Fred	*E. E.*	*Manchester*

Name	Course	P. O. Address
Baer, Adolph Jacob	*Bus. Fund.*	*Dover*
Bagley, Clifford Howard	*Bus. Fund.*	*Amesbury, Mass.*
Bagley, Gerald Ransom	*Hort.*	*Lebanon*
Ballou, Laurence Frank	*E. E.*	*Troy*
Barrett, Hildah Eda	*A. G.*	*Lisbon*
Barron, Ralph Ernest	*Pre-Law*	*Worcester, Mass.*
Barton, Carlton Claudius	*Agr. Tr.*	*Newport*
Bean, Rachel Winnifred	*A. G.*	*Errol*
Beede, Marcelia Louise	*Educ.*	*Campton*
Bergquist, Marion Elizabeth	*A. G.*	*Manchester*
Berry, Donald Fiske	*Pre-Law*	*New Boston*
Billman, Kathryn Luella	*A. G.*	*Wollaston, Mass.*
Black, Fannie	*A. G.*	*Portsmouth*
Blair, Jeanette Moore	*A. G.*	*Peterborough*
Blanchard, Emery Caswell	*Educ.*	*Meredith*
Blount, Wayne Lawrence	*M. E.*	*Littleton*
Boardman, William Dana	*Bus. Fund.*	*Everett, Mass.*
Bodwell, Frances Louisa	*A. G.*	*Rochester*
Boothroyd, Kenneth Ingham	*C. E.*	*Woodsville*
Bouchard, Lucien George	*Pre-Med.*	*Nashua*
Bournival, Emile Ernest	*Bus. Fund.*	*Manchester*
Bowker, Marshall Edward	*E. E.*	*Kittery, Maine*
Boyd, Earl James	*M. E.*	*North Hampton*
Brennan, Eleanor Teresa	*Phys. Ed.*	*Dover*
Brennan, Thomas Joseph	*Bus. Fund.*	*Dover*
Brierley, Frances	*A. G.*	*Lawrence, Mass.*
Bromley, Edward Daniel	*A. G.*	*Lebanon*
Brooks, Charles Hussey	*A. G.*	*Dover*
Brown, Donald Mason	*Bus. Fund.*	*Milford*
Brown, Mary Emma	*A. G.*	*Deerfield*
Brown, Wilfred Ernest	*M. E.*	*Manchester*
Brungot, Clarence Jorgen	*M. E.*	*Berlin*
Bryant, Floyd Goodwin	*A. G.*	*Tilton*
Buckminster, Kenneth Bridge	*Bus. Fund.*	*Concord*
Burdett, Keith Franklyn	*Bus. Fund.*	*Swampscott, Mass.*
Burleigh, Austin Holmes	*M. E.*	*Tavares, Fla.*
Bushey, Leonard Boast	*M. E.*	*Concord*
Butman, Clarence Dana	*Bus. Fund.*	*Lebanon (West)*
Butson, Ernest Henry	*Bus. Fund.*	*Lisbon*

JUNIORS

Name	Course	P. O. Address
Campana, Fiore	*A. G.*	*Franklin*
Carlen, Jans Julius	*E. E.*	*Concord*
Carlton, Leslie Herbert	*A. G.*	*Fremont*
Carr, Dorothy June	*A. G.*	*Hill*
Carville, Rose Frances	*A. G.*	*Dover*
Casey, James Patrick	*A. G.*	*Somersworth*
Cassily, Elizabeth Frances	*A. C.*	*Dover*
Charron, Roland Bartholomew	*Pre-Med.*	*Nashua*
Chase, Leslie Oliver	*A. G.*	*Milton*
Cheetham, Tom	*Ch. E.*	*Nashua*
Christensen, Harry Edward	*Pre-Med.*	*Gloucester, Mass.*
Christie, Aldis	*For.*	*Groveton*
Christopher, Esther Webster	*H. E.*	*South Lyndeboro*
Cilley, Barbara Louise	*A. G.*	*Kingston*
Cilley, Charles Dorr	*A. G.*	*Dover*
Clapp, Kenneth Turner	*Bus. Fund.*	*Hampton*
Clark, William Edward	*M. E.*	*Charlestown*
Clarner, Louis George Karl	*A. G.*	*Concord*
Colburn, George Clement	*A. G.*	*Newton, Mass.*
Coldwell, Harry Irving	*E. E.*	*Goff's Falls*
Connor, Margaret Elizabeth	*A. G.*	*Manchester*
Cook, George Milton	*A. G.*	*New Bedford, Mass.*
Corson, Hazel	*A. G.*	*Rochester*
Corson, Hilda	*A. G.*	*Rochester*
Cressy, Muriel Gladys	*A. G.*	*Concord*
Crocker, Robert Wellington	*E. E.*	*Rochester*
Crosby, Ralph William	*A. G.*	*Nashua*
Croteau, Oscar Frederick	*A. G.*	*Marlboro*
Cunningham, Horace James	*E. E.*	*Berlin*
Currier, Fred Leslie	*A. G.*	*Pittsfield, Mass.*
Cushing, Merchant LeRoy	*Ch. E.*	*Plaistow*
Daggett, Helen Eaton	*A. G.*	*Concord*
Danforth, Mildred Emeline	*A. G.*	*Berwick, Maine*
Daniels, Almon Meikle	*P. H.*	*Henniker*
Davis, Henry Albert	*Agr. Ch.*	*East Sullivan*
Davis, Ruth Elenore	*A. G.*	*Needham, Mass.*
Dean, Rexford Stanley	*A. G.*	*Durham*
Delude, Frederick Edward	*Ch. E.*	*Keene*
Dick, Arthur Freeman	*E. E.*	*Wilton*

Name	Course	P. O. Address
Dickey, Frank Wallace	*E. E.*	*Manchester*
Dodge, Thelma Louise	*A. G.*	*North Hampton*
Donovan, Jeremiah Joseph	*A. G.*	*Exeter*
Douglas, Howard William	*A. G.*	*Brattleboro, Vt.*
Dowd, Henry Hubert	*Arch.*	*Nashua*
Downing, Charles Jackson	*C. E.*	*Wentworth*
Dresser, Holland Lamb	*A. G.*	*South Portland, Maine*
Dubuc, Maurice Henry	*For.*	*Nashua*
Dunlap, Kenneth Roberts	*A. G.*	*Laconia*
Edwards, Evan Jonathan	*C. E.*	*Manchester*
Ellingwood, Daniel Milton	*A. G.*	*Littleton*
Engel, Fiesco Byron	*M. E.*	*Penacook*
Ennis, Joseph John	*For.*	*Arlington, Mass.*
Evans, Carl Buntin	*E. E.*	*Concord*
Faber, David	*Pre-Med.*	*Nashua*
Fay, Charles Robert	*E. E.*	*Keene*
Fearer, Joseph Leonard	*M. E.*	*Hampton*
Fenton, Austen Wells	*A. G.*	*Wrentham, Mass.*
Fish, Joseph Theodore	*C. E.*	*East Kingston*
Fisher, Vernon Hoitt	*Ch. E.*	*Andover*
Fleischman, Bessie	*A. G.*	*Portsmouth*
Flower, Eugene Haskell	*Bus. Fund.*	*Manchester*
Fowler, Jewett Wilcox	*M. E.*	*Concord*
Freaman, Sadie	*A. G.*	*Dover*
Galeucia, Anna Joy	*A. G.*	*Alton*
Gates, Elizabeth Aldine	*A. G.*	*Charlestown*
Gaunt, Nelson	*A. G.*	*Worcester, Mass.*
Gay, Richard Lewis	*Bus. Fund.*	*Keene*
Gleason, Eleanor	*Phys. Ed.*	*Dublin*
Googins, Herbert Russell	*Bus. Fund.*	*Portsmouth*
Gordon, Florence Rosamond	*A. G.*	*Manchester*
Gowen, Elizabeth	*A. G.*	*Greenland*
Granville, Pearle	*H. E.*	*Madison*
Greenwood, Earle Spencer	*Bus. Fund.*	*Goffstown*
Griffin, Eleanor Frances	*A. G.*	*Portsmouth*
Grinnell, Victoria Louisa	*H. E.*	*Derry*
Guptill, Leroy A.	*Agr. Tr.*	*Northwood Ridge*
Guy, John Timothy	*Pre-Med.*	*Somersworth*
Hagerty, Edward Daniel	*Pre-Med.*	*Nashua*

Name	Course	P. O. Address
Hagstrom, Herbert Roger	*A. G.*	*Worcester, Mass.*
Hale, Ruth Frances	*H. E.*	*Dover*
Hall, Marjorie Louise	*A. G.*	*Dover*
Ham, Carlton Wilfred	*D. H.*	*Dover*
Hanna, Charles Russell	*Pre-Law*	*West Swanzey*
Harrington, Richard Morgan	*I. E.*	*Jamaica Plain, Mass.*
Haseltine, Edward John	*A. G.*	*Reed's Ferry*
Hasiotis, Arthur Christos	*Pre-Med.*	*Manchester*
Haskell, Genevieve Mary	*A. G.*	*Nashua*
Hazen, Catherine Alice	*A. G.*	*Lebanon*
Hazen, Henry Allen	*Agr.*	*Lebanon*
Henning, Avis Mary	*A. G.*	*Manchester*
Higgins, Paul William	*A. G.*	*Cranston, R. I.*
Hikel, Theodore Roosevelt	*M. E.*	*Plymouth*
Hill, Richard Oscar	*Ch. E.*	*Enfield*
Hills, Dorothy Childs	*A. G.*	*Hollis*
Horan, George Christopher	*Bus. Fund.*	*Manchester*
Horrigan, Frank Henry	*A. G.*	*Wakefield, Mass.*
Hoyt, Stanley Currier	*I. E.*	*Plaistow*
Huse, Evelyn Adelaide	*A. G.*	*Goffstown*
Ingham, George Donald	*E. E.*	*Lowell, Mass.*
Jablonowski, Joseph Francis	*A. G.*	*Terryville, Conn.*
Jackson, Mildred Lois	*H. E.*	*Bethlehem*
Jenkins, Walter Scott	*A. G.*	*Manchester*
Johnson, Irving Ernest	*C. E.*	*Reed's Ferry*
Jones, Frank Malcolm	*E. E.*	*Manchester*
Kelley, Genevieve May	*A. G.*	*Lincoln*
Kellstrand, Gunnar Edwin	*M. E.*	*Rockland, Mass.*
Kelly, Henry Edward	*A. G.*	*Manchester*
Kimball, Bernard Arthur	*D. H.*	*Contoocook*
Kirkpatrick, Ilda Billings	*A. G.*	*Concord*
Krinsky, Abraham Eben	*Bus. Fund.*	*Somersworth*
LaFarge, William Francis	*Bus. Fund.*	*Northwood Narrows*
Lamb, Wilfrid Thomas	*Bus. Fund.*	*Portsmouth*
Lambert, Alfred Anselm	*A. G.*	*Marlboro*
Lamprey, Anna Signor	*A. G.*	*Manchester*
Lane, Henry Chester	*Pre-Med.*	*Keene*
Lane, Kenneth Bradley	*D. H.*	*Claremont*
Lang, Harry Frank	*Pre-Law*	*Colebrook*

Name	Course	P. O. Address
Langlois, Fred Clayton	*A. G.*	*Lebanon*
Lavallee, Hubert Arsene	*I. E.*	*Berlin*
Lazure, Albert Clarence	*Pre-Law*	*Berlin*
Leach, Chester	*C. E.*	*Moultonboro*
Learned, Robert Craig	*E. E.*	*Woodsville*
Leavitt, Dorothy Maude	*A. G.*	*Tilton*
Leggett, Norman Kentley	*Arch.*	*Manchester*
Lehtinen, Holger Gustav	*Bus. Fund.*	*West Concord*
Leitch, Donald Robert	*Pre-Med.*	*Manchester*
Lemay, Louis Bertrand	*Bus. Fund.*	*Manchester*
Lester, Bernice Howard	*A. G.*	*Ipswich, Mass.*
Lewis, Allen Ingalls	*C. E.*	*Concord*
Littlefield, Nance Winslow	*A. G.*	*Hampstead*
Lloyd, Ronald Joseph	*Ch. E*	*Bellows Falls, Vt.*
Lockett, Marjory Davis	*H. E.*	*Exeter*
Lorden, Leonard Sloan	*A. G.*	*Milford*
Lovell, Mary Virginia	*A. G.*	*Goffstown*
Low, Waldron Garfield	*A. G.*	*Derry*
Lucy, Robert Anthony	*A. G.*	*Portsmouth*
Lynch, Edward Kenneth	*Bus. Fund.*	*Hanover*
Lynch, Robert Emmett	*A. G.*	*Manchester*
McLaren, Harry Spurr	*Arch.*	*Manchester*
MacNaught, Elizabeth	*H. E.*	*Rochester*
Mack, Donald William	*E. E.*	*Claremont*
Mailman, Eugene Whitman	*A. G.*	*Keene*
Mann, Philander Leon	*Educ.*	*East Concord*
Martin, Frank Sawyer	*Bus. Fund.*	*Newport*
Marvin, Edward	*A. G.*	*Portsmouth*
Matoian, Christopher George	*E. E.*	*Manchester*
Melendy, Elizabeth Nella	*A. G.*	*Manchester*
Menard, Yvette	*A. G.*	*Manchester*
Miller, Ralph M.	*Bus. Fund.*	*Townsend, Mass.*
Monahan, William Davis	*Pre-Med.*	*Lancaster*
Moore, Leonard Eugene	*E. E.*	*Durham*
Moore, Leroy Elbert	*I. E.*	*Manchester, Mass.*
Moorehouse, Clifton Davis	*A. G.*	*Tilton*
Morse, Victor Louis	*Ch. E.*	*Brattleboro, Vt.*
Mozes, Edward	*Pre-Med.*	*Manchester*
Mullane, James	*A. G.*	*Portsmouth*

Name	Course	P. O. Address
Murdoch, Robert Norman	*A. G.*	*Manchester*
Nerbonne, Pauline Mary	*A. G.*	*Manchester*
Niebels, Alva Carpenter	*For.*	*Providence, R. I.*
Nightingale, Elsie Thayer	*A. G.*	*Charlton, Mass.*
Nims, Harold Barrett	*Bus. Fund.*	*Keene*
Ojanen, Richard Jakko Hendrick	*Ch. E.*	*Claremont*
Osgood, Raymond Hanson	*E. E.*	*Laconia*
Otis, Evelyn Natalie	*A. G.*	*Farmington*
Papp, Alpha James	*A. G.*	*Manchester*
Parkinson, John Anthony	*Bus. Fund.*	*Penacook*
Perkins, Donald Merrill	*A. G.*	*Sunapee*
Phelps, Henry Maynard	*Bus. Fund.*	*Concord*
Phelps, Marion Avis	*A. G.*	*Durham*
Philbrook, Viola Beatrice	*A. G.*	*Meredith*
Phipps, Robert Howard Kingsbury	*For.*	*Gorham*
Pillsbury, Louise Mabel	*H. E.*	*Derry*
Pinkham, Arthur George	*E. E.*	*Dover*
Piper, Donald Joseph	*A. G.*	*Franklin*
Pitz, Donald R.	*Ch. E.*	*Durham*
Potts, Leslie Trueman	*E. E.*	*Durham*
Presby, Harold Freeman	*P. H.*	*Henniker*
Pridham, George Sherman	*A. G.*	*Portsmouth*
Prisk, Charles William	*C. E.*	*Yalesville, Conn.*
Qualey, Philip Paul	*A. G.*	*Dover*
Rand, Elizabeth	*A. G.*	*Epping*
Raymond, Agnes Thurston	*A. G.*	*Errol*
Redden, Agnes Marie	*A. G.*	*Dover*
Redden, Daniel Joseph	*Bus. Fund.*	*Dover*
Reed, Paul Joseph	*A. G.*	*Manchester*
Reed, Percy Floyd	*A. G.*	*Durham*
Remick, Philbert Ernest	*A. G.*	*Riverton*
Richardson, Stuart Ashley	*Bus. Fund.*	*Lowell, Mass.*
Richer, Annette Georgette	*A. G.*	*Manchester*
Riley, Matthew Howard	*E. E.*	*Somersworth*
Roberts, Wade Hayson	*A. G.*	*Dover*
Robinson, Forrest Joy	*E. E.*	*Manchester*
Robinson, Francis Edwin	*A. G.*	*Durham*
Ross, Karl Grier	*P. H.*	*Gorham*
Rouillier, Napoleon Ernest	*For.*	*Goff's Falls*

Name	Course	P. O. Address
Rowden, William Grant	*A. G.*	*Groveton*
Rudd, Carol Corlies	*A. G.*	*Durham*
Ruiter, Gordon Cedric	*Bus. Fund.*	*Concord*
Rumney, Jeanette Marion	*A. G.*	*Berlin*
Ryder, Arthur Chandler	*A. G.*	*Wollaston, Mass.*
Saltmarsh, William Rollins	*Bus. Fund.*	*Concord*
Sanders, Grace Komarek	*A. G.*	*Durham*
Sanel, Rose	*A. G.*	*Concord*
Sargent, Clayton David	*A. G.*	*Goffstown*
Savage, Kenneth Sinclair	*E. E.*	*Riverton*
Sawyer, John Raymond	*A. G.*	*Plymouth*
Sawyer, Lloyd Vincent	*Hort.*	*Woodstock*
Sawyer, Richard Merrill	*E. E.*	*Exeter*
Schurman, Joseph Leonard	*A. G.*	*Portsmouth*
Scruggs, Paul Wayland	*Bus. Fund.*	*Woodsville*
Seften, Eugene Henry	*Agr.*	*Bedford, Mass.*
Serafini, Fiorenzo D.	*A. G.*	*Hanover*
Shapiro, Mollie Mary	*A. G.*	*Portsmouth*
Shattuck, Granville	*A. G.*	*Granby, Conn.*
Shea, John Joseph	*Bus. Fund.*	*Manchester*
Sinclair, Dorothea Winkler	*A. G.*	*Exeter*
Skoog, Allan Peter	*Ch. E.*	*Hampton*
Slack, Stanton McCue	*A. G.*	*Franklin*
Slavin, Robert Moran	*A. G.*	*Nashua*
Smith, George Wendell	*Bus. Fund.*	*Goffstown*
Smith, Jean Esther	*A. G.*	*Lancaster*
Smith, Vera Maria	*A. G.*	*Meriden*
Smith, Vincent Frazier	*Bus. Fund.*	*Peterborough*
Solomon, Samuel Frank	*A. G.*	*Franklin*
Spence, Dorothy Adelaide	*A. G.*	*Berwick, Maine*
Spillane, Anna	*A. G.*	*Newmarket*
Stankiewicz, Mitchell John	*For.*	*Newport*
Steere, Edith Ruth	*H. E.*	*Amesbury, Mass.*
Steeves, Ethel Elizabeth	*A. G.*	*Dover*
Sterling, William Clinton	*A. G.*	*Melrose, Mass.*
Stetson, Robert Shaw	*I. E.*	*Plaistow*
Stevens, Edith Margaret	*A. G.*	*Haverhill*
Sturgis, John Edgar	*Arch.*	*Durham*
Sucke, Edmond Adolph	*A. G.*	*Hyde Park, Mass.*

Name	Course	P. O. Address
Sullivan, Genevieve Deasy	*A. G.*	*Manchester*
Swain, Vernon Trickey	*E. E.*	*Buffalo, N. Y.*
Szalajeski, Eugienia	*A. G.*	*Laconia*
Tallman, Earl Armstrong	*C. E.*	*Manchester*
Tasker, George Waldermere	*Agr. Tr.*	*New London*
Taylor, George	*Pre-Med.*	*Hudson*
Theodos, Mathew Ralph	*Bus. Fund.*	*Manchester*
Thurston, Elsie Estella	*A. G.*	*Wolfeboro*
Tibbetts, Marion Ellen	*A. G.*	*Groveton*
Tiffany, Henry Dyer	*A. G.*	*North Weare*
Tilton, Richard Gould	*A. G.*	*Laconia*
Tobey, Ardra	*A. G.*	*Wolfeboro*
Tonkin, John Fremont	*Pre-Law*	*Durham*
Toothaker, Curtis Cady	*I. E.*	*Rockland, Mass.*
Trent, George James	*Pre-Med.*	*Portsmouth*
Trombly, Lillian Oberlin	*A. G.*	*Concord*
Tufts, Betty Raymond	*Educ.*	*Lancaster*
Tuttle, George Edward	*Hort.*	*Dover*
Uicker, John Joseph	*I. E.*	*Derry*
Vanni, Jocondo Dominick	*Bus. Fund.*	*Peterborough*
VanStelten, Anna	*A. G.*	*Manchester*
Varney, Marjory Eleanor	*A. G.*	*Alton Bay*
Vasiliou, Vasilios Antoniou	*Bus. Fund.*	*Manchester*
Vaughan, Oscar Lockwood	*Arch.*	*Portsmouth*
Vintinner, Frederick James	*Pre-Med.*	*Lisbon*
Vivian, Doris Haskell	*A. G.*	*Gloucester, Mass.*
Walker, Agnew Geno	*Bus. Fund.*	*Lebanon*
Walker, Charles Monroe	*A. G.*	*Chelmsford, Mass.*
Walker, Edith Catharine	*A. G.*	*Contoocook*
Wallace, Ruth Evelyth	*A. G.*	*Dover*
Webster, John Randolph	*E. E.*	*Hartland, Vt.*
Weeks, Dorothy Eleanor	*Phys. Ed.*	*Pittsfield*
Wentworth, Cecil Agnew	*Pre-Law*	*Dover*
Wheeler, Elmer Moore	*Arch.*	*Milford*
Whipple, Verna Alliene	*H. E.*	*Lebanon*
Whitcher, Frank Earl	*E. E.*	*Bartlett*
Whitcomb, Arthur Knowlton	*E. E.*	*Bellows Falls, Vt.*
Whiteley, William Milner	*Bus. Fund.*	*Dover*
Whittemore, Pauline Elizabeth	*A. G.*	*Lyme*

Name	Course	P. O. Address
Whittemore, Ruth	*A. G.*	*Lyme*
Whynott, Wallace Everett	*Pre-Med.*	*Antrim*
Wiggin, Lena Blanche	*A. G.*	*Stratham*
Wiggins, Clifford Roy	*Ch. E.*	*Montpelier, Vt.*
Willand, Allen Benjamin	*Bus. Fund.*	*Manchester*
Willey, Floyd Lester	*Pre-Law*	*Manchester*
Wilson, James Lawrence	*A. G.*	*Haverhill*
Wilson, Rhoda Mae	*A. G.*	*Derry Village*
Winer, Pauline	*H. E.*	*Epping*
Wood, Marjorie Virginia	*A. G.*	*Hampton*
Wooldridge, William Wallace	*M. E.*	*Laconia*
Woolley, Austin Gilbert	*C. E.*	*Andover, Mass.*
Worthen, Eugene Porter	*M. E.*	*Manchester*
Wright, Marion	*A. G.*	*Alton*
Young, Edna Susan	*A. G.*	*Ossipee*
Young, Irene Harriett	*H. E.*	*Newmarket*
Young, William Carleton	*Pre-Law*	*Dover*

SOPHOMORES (346)

Name	Course	P. O. Address
Abbiati, Ennio	*For.*	*Barre, Vt.*
Abramson, Benjamin	*A. G.*	*Berlin*
Ahlgren, Adler Robert	*A. G.*	*Manchester*
Akeson, Elmer Gunnar	*A. G.*	*Concord*
Allen, Fred Ernest	*D. H.*	*North Hampton*
Alley, Elizabeth Stetson	*A. G.*	*Union*
Alpers, Bernard Jacob	*A. G.*	*Salem, Mass.*
Ames, Mary Natalie	*H. E.*	*Somersworth*
Atwood, Charlotte Ann	*A. G.*	*Lisbon*
Augustinus, Robert Herman	*A. G.*	*Manchester*
Avery, Margaret Elizabeth	*A. G.*	*Wolfeboro*
Ayer, Gordon Roundy	*C. E.*	*Keene*
Ayers, John Robert	*A. G.*	*Everett, Mass.*
Baker, Florence Mildred	*A. G.*	*Concord*
Baker, Robert Gordon	*E. E.*	*Derry*
Bakus, Samuel Themistoklis	*A. G.*	*Manchester*
Ball, Charlotte Mabel	*A. G.*	*Colebrook*
Barker, Laurence Alvin	*E. E.*	*Nashua*
Barnaby, Barbara Copeland	*A. G.*	*Portsmouth*

Name	Course	P. O. Address
Bartlett, Waldrof Ray, Jr.	*Hort.*	*Newport*
Bean, Nan Gordu	*A. G.*	*Concord*
Bemis, Millard Stanton	*Pre-Med.*	*Dublin*
Berry, Mary Marjorie	*Pre-Law*	*Rochester*
Billman, Edward S.	*Bus. Fund.*	*Wollaston, Mass.*
Black, Rose	*A. G.*	*Portsmouth*
Blais, Maurice Adelard	*A. G.*	*Dover*
Blaisdell, Daniel Crysler	*E. E.*	*Plymouth*
Blake, Leon Hurd	*Bus. Fund.*	*Manchester*
Blanchard, George Walton	*Bus. Fund.*	*Portland, Maine*
Boothby, Bradford Saunders	*Bus. Fund.*	*Wakefield, Mass.*
Bowen, Fay Sanford	*A. G.*	*Meredith*
Bowman, Audrey Elizabeth	*H. E.*	*Salmon Falls*
Brannen, Malcolm Dodge	*A. G.*	*Durham*
Bresnahan, Clare Alberta	*A. G.*	*Manchester*
Bretschneider, Estelle Mary	*A. G.*	*Exeter*
Brisson, Emma Diana	*A. G.*	*Newmarket*
Bronstein, Joseph Edward	*A. G.*	*Manchester*
Brooks, Earl	*A. G.*	*Manchester*
Brown, Charles Knowlton	*M. E.*	*South Danbury*
Brown, Edna Frances	*H. E.*	*Keene*
Brown, Joseph True	*Agr.*	*Deerfield*
Burbank, Robert William	*A. G.*	*Derry*
Burns, Arthur Royal	*Bus. Fund.*	*Manchester*
Burrill, Guy Francis	*A. G.*	*Claremont*
Burton, Charles William	*Agr.*	*Chichester*
Bussell, Arthur Lalor	*A. G.*	*Dumont, N. J.*
Butson, Helen Sarah	*Bus. Fund.*	*Woodsville*
Buttrick, Carlton Elwin	*A. G.*	*East Hampstead*
Caldwell, Stacy Wadaz	*Bus. Fund.*	*Portsmouth*
Callahan, Robert Henry	*Bus. Fund.*	*Gloucester, Mass.*
Campbell, John Bernard	*A. G.*	*Manchester*
Carpenter, Harriet Leah	*A. Ch.*	*Newmarket*
Carpenter, Helen Genevieve	*A. G.*	*Somersworth*
Carrigan, John Edward	*Pre-Med*	*Somersworth*
Cataldi, Angelo	*A. G.*	*Wolfeboro*
Caverly, Ruth Elizabeth	*A. G.*	*Strafford*
Chaloner, Raymond Pierce	*Bus. Fund.*	*Nashua*
Chandler, Warren David	*A. G.*	*Dover*

Name	Course	P. O. Address
Chase, Louise Lowell	*A. G.*	*Manchester*
Chase, Malcolm Jerome	*C. E.*	*Seabrook*
Clapp, Richard Caswell	*Bus. Fund.*	*Concord*
Clark, Clifford Rowe	*Arch.*	*Portsmouth*
Coburn, Paul Wayne	*Arch.*	*Londonderry*
Colburn, Francis Leslie	*Bus. Fund.*	*Contoocook*
Coleman, Clark Moody	*Agr.*	*Portsmouth*
Conroy, John Joseph	*Bus. Fund.*	*Newport, R. I.*
Croke, Harry William	*For.*	*Claremont*
Crowell, Gilman Kimball	*Ch. E.*	*Concord*
Crowley, Bernard Francis	*Bus. Fund.*	*Concord*
Currie, Wilsie Austin	*A. G.*	*Providence, R. I.*
Curtis, Horace Leslie	*M. E.*	*Lakeport*
Cushman, Otis French	*E. E.*	*Stratham*
Dallinger, William Stearns	*A. G.*	*Cambridge, Mass.*
Dane, John Alexander	*A. G.*	*Concord*
Davie, Elsie Enid	*Bus. Fund.*	*Concord*
Dearborn, Paul Edward	*Bus. Fund.*	*Tilton*
Dickerman, Edmond Howard	*I. E.*	*Brookline*
Dodge, Ralph Lendell	*D. H.*	*Bradford*
Dodge, Richard Morgan	*A. G.*	*Manchester*
Dodge, Ruth Ellen	*A. G.*	*New Boston*
Dolloff, Charles Clarence	*M. E.*	*Malden, Mass.*
Donovan, Francis Rule	*Bus. Fund.*	*Keene*
Dorfman, Edmund	*Pre-Law*	*Berlin*
Dorsey, Regal Harry	*A. G.*	*Wallingford, Conn.*
Dosenberg, Fred August	*Educ.*	*Alexandria*
Downing, Cecelia Eleanor	*A. G.*	*Nashua*
Duffy, Ethel Maria	*Phys. Ed.*	*Dover*
Dunford, Ernest Frank	*M. E.*	*Keene*
Dunford, Ralph Chester	*E. E.*	*Keene*
Dustin, Edward Eugene	*C. E.*	*Penacook*
Eadie, William Robert	*For.*	*Manchester*
Egbert, Margaret Baker	*A. G.*	*Wolfeboro*
Elkavich, Frank Daniel	*Pre-Med.*	*Nashua*
Ellsworth, Russell Jenkins	*Arch.*	*Penacook*
Eustis, Richard James	*Educ.*	*Marblehead, Mass.*
Fecteau, Ivanetta Mae	*A. G.*	*Exeter*
Fernald, Mary Louise	*A. G.*	*Nottingham*

Name	Course	P. O. Address
Ferryall, Thelma Pearl	*A. Ch.*	*Nashua*
Fessenden, David William	*Pre-Law*	*Brookline*
Fields, Marion Lena	*A. G.*	*Reed's Ferry*
Finley, Holman Haines	*Bus. Fund.*	*Colebrook*
Fisher, Joseph Raymond	*Bus. Fund.*	*Rochester*
Flanders, Yora Virginia	*A. G.*	*Ansonia, Conn.*
Fleischman, Nathan	*Bus. Fund.*	*Manchester*
Flint, Elizabeth Josephine	*A. G.*	*Plymouth*
Folsom, Edward Simeon	*Bus. Fund.*	*Dover*
Ford, Vera Mae	*H. E.*	*Plymouth*
Foster, Walter John	*A. G.*	*Suncook*
Freeman, Charles Faulkner	*Bus. Fund.*	*Concord*
Freese, George Lamb	*E. E.*	*Bristol*
Frost, Leonard Rudolph	*C. E.*	*Concord*
Fuller, Frederic Dresser	*Ch. E.*	*North Stratford*
Gadd, Eileen Ross	*A. G.*	*Plymouth*
Gates, Frederick Arthur	*Bus. Fund.*	*Waltham, Mass.*
Geoffrion, Raymond Adrien	*M. E.*	*Newmarket*
Gibbons, William Edward	*M. E.*	*Dover*
Gleason, John Ripley	*A. G.*	*Dublin*
Goodrich, Ralph Winthrop	*A. G.*	*Rochester*
Gordon, Elliott Bishop	*I. E.*	*Wonalancet*
Gordon, Herbert	*Bus. Fund.*	*Concord*
Grady, John Francis	*C. E.*	*Chichester*
Graham, Arthur Samuel	*A. Ch.*	*Manchester*
Greene, Robert Cushing	*A. G.*	*Keene*
Grossman, Bernard	*Pre-Med.*	*Manchester*
Hackler, Ivah Augustus	*A. G.*	*Marlboro*
Hagerty, Norman Albert	*Bus. Fund.*	*Nashua*
Halstead, Ruth	*A. G.*	*Hampstead*
Handschumaker, Edward	*Ch. E.*	*Manchester*
Hanley, Howard Eugene	*Bus. Fund.*	*Providence, R. I.*
Harriman, Alfred Munroe	*C. E.*	*Warner*
Harriman, Elmer Lane	*I. E.*	*Bartlett*
Harris, James Campbell	*A. G.*	*Queen's Village, N. Y.*
Hartigan, John Louis	*Pre-Med.*	*Rochester*
Hawkes, Harold Melvin	*Educ.*	*Portland, Maine*
Hayes, Charles Gilman	*A. Ch.*	*Exeter*
Hayes, James Henry	*A. G.*	*Wollaston, Mass.*

Name	Course	P. O. Address
Hayward, Kenneth William	*M. E.*	*Hancock*
Hazen, Hollis Milan	*A. H.*	*Concord*
Hazzard, Norman Earl	*Agr. Tr.*	*Berlin*
Head, Francis Allison	*A. G.*	*Farmington*
Healy, Arthur Joseph	*Pre-Law*	*Manchester*
Heath, Wesley Knowlton	*M. E.*	*Franklin*
Henderson, Lawrence William	*A. G.*	*Merrimack*
Hikel, Nolan George	*A. G.*	*Plymouth*
Hinckley, Owen	*A. G.*	*Mamaroneck, N. Y.*
Holmberg, Gerald William	*I. E.*	*Bedford*
Hooper, Helen Arlyne	*Phys. Ed.*	*Greenland*
Hooper, Robert Wilkins	*E. E.*	*Sanbornville*
Hoyt, Frank Edward	*A. G.*	*Gorham, Maine*
Hubbard, Harriet Stone	*A. G.*	*Peterborough*
Jackson, Norton	*A. G.*	*Manchester*
Jaques, Leigh Francis	*A. G.*	*Worcester, Mass.*
Jenkins, Dorothy Alfreda	*Educ.*	*New Durham*
Jenney, Doris Arvella	*A. G.*	*South Portland, Maine*
Jennison, David Blanchard	*A. G.*	*Milford*
Johnson, Elmer Noyes	*A. G.*	*Newburyport, Mass.*
Joyal, Jean McAllister	*H. E.*	*Tilton*
Keller, Otto Pitman	*M. E.*	*Laconia*
Kelso, Velna Marriett	*A. G.*	*Hillsboro*
Kerr, Benedict Alexander	*A. G.*	*Gloucester, Mass.*
Kibbey, Francis Bernard	*A. G.*	*Cornish Flat*
Kirsch, Dorothy Ellen	*A. G.*	*New Boston*
Knabenshue, Karl Emmons Hill	*Pre-Law*	*Manchester*
Korol, Myroslaw	*A. G.*	*Manchester*
Lampron, Herman George	*Pre-Med.*	*Nashua*
Lampson, Seth Albert	*A. G.*	*New London*
Lane, Frances Elohe	*A. G.*	*Errol*
Lang, Everett Hilton	*Ch. E.*	*Durham*
Lang, Francis Edward	*A. G.*	*Somersworth*
Lanzilli, Carlo Edmund	*A. G.*	*Portsmouth*
Leavitt, Morrill William	*Arch.*	*Tilton*
Lehman, Jane Clifton	*A. G.*	*New York City*
Levine, Sayra	*A. G.*	*Portsmouth*
Levingston, Ida Bertha	*A. G.*	*Concord*
Little, Robert George	*Bus. Fund.*	*Concord*

Name	Course	P. O. Address
Lord, Almon Mudgett	*Agr. Ch.*	*Dover*
Lord, Fred Adalbert	*D. H.*	*Salem Depot*
Lord, Harry Donald	*For.*	*South Portland, Maine*
Luce, Beatrice Mabelle	*A. G.*	*Exeter*
McCammon, Mildred Mannette	*A. G.*	*Portsmouth*
McDonald, Donald Franklin	*C. E.*	*Manchester*
MacDonald, Jean	*Phys. Ed.*	*Brookfield, Mass.*
McFadden, Albert Edmund	*Pre-Med.*	*Dover*
McGinley, Harold Everett	*E. E.*	*Tilton*
McGlynn, Kathryn Lucille	*A. G.*	*Nashua*
McInnis, Katherine	*A. G.*	*Concord*
McIntyre, Alice Ruth	*Bus. Fund.*	*Whitefield*
McKoan, Thomas Paul	*A. G.*	*Westville*
McLellan, John Bailey	*Arch.*	*Woodsville*
McNutt, Mary Elizabeth	*A. G.*	*Durham*
Magnuson, George Adolf	*Bus. Fund.*	*Concord*
Mailman, Harry LeRoy	*A. G.*	*Keene*
Mann, Guy Webster	*Agr.*	*East Concord*
Markowitz, Harry	*Bus. Fund.*	*Wallingford, Conn.*
Marshall, Richard Barton	*Bus. Fund.*	*Milford*
Martin, Henry George	*D. H.*	*West Hopkinton*
Mather, Carol Samble	*A. G.*	*Manchester*
Mauricette, Robert Edgerly	*I. E.*	*Dover*
Maynard, Alexander Emile	*C. E.*	*Nashua*
Meader, Annie Vickery	*A. G.*	*Dover*
Mecheski, Edward Michael	*Agr. Ch.*	*Northfield, Mass.*
Meehan, Nancy West	*A. G.*	*Dover*
Meloon, Harriett Apphia	*Phys. Ed.*	*Ossipee*
Merrill, Edith Myra	*A. G.*	*Groveton*
Merrill, John Arthur	*C. E.*	*Storrs, Conn.*
Metcalf, Clarence Walter	*Bus. Fund.*	*Alstead*
Meunier, Lionel Lucien	*Pre-Law*	*Nashua*
Mitchell, Walter Russell	*A. G.*	*Plymouth*
Molloy, Agnes Margaret	*A. G.*	*Nashua*
Moore, Gordon Lorenzo	*E. E.*	*Portsmouth*
Moore, Mark Mason	*M. E.*	*Milford*
Moreau, Jean Wilfred	*A. G.*	*Manchester*
Morin, Gerard Ludger	*Pre-Law*	*Berlin*
Morrill, Alberta Ross	*A. G.*	*East Kingston*

Name	Course	P. O. Address
Morrison, Robert Herman	*Bus. Fund.*	*Laconia*
Morse, Arthur Congdon	*Agr.*	*Newburyport, Mass.*
Morton, Sarah Elizabeth	*A. G.*	*Concord*
Mott, Guibert Allen	*C. E.*	*Brandon, Vt.*
Mowatt, Doris Elizabeth	*A. G.*	*Exeter*
Mowatt, Dorothea Claire	*A. G.*	*Exeter*
Mulford, John Allen	*Arch.*	*Westmoreland*
Nardelli, Angelo	*A. G.*	*Providence, R. I.*
Nevin, Jean Shivervick	*H. E.*	*Edgartown, Mass.*
Noyes, Carlton Fletcher	*A. G.*	*Sunapee*
Nute, Velma Eliza	*Bus. Fund.*	*Rochester*
O'Hare, James Francis	*A. G.*	*Nashua*
O'Neil, Roger William	*Pre-Med.*	*Nashua*
Osgood, Jonathan Abram	*A. G.*	*Pittsfield*
Palmer, Walter Herman	*Bus. Fund.*	*Salem*
Parkhurst, Donald Spofford	*A. G.*	*Peterborough*
Parnell, Priscilla	*A. G.*	*Manchester*
Patenaude, Duainne Tyler	*M. E.*	*Henniker*
Paul, Edith Rosetta	*A. G.*	*Sunapee*
Paul, Ruth Angell	*Phys. Ed.*	*Sunapee*
Penley, Howard Donald	*A. G.*	*Portland, Maine*
Perkins, Emily Weld	*H. E.*	*Meredith*
Perkins, Frederic Blood	*E. E.*	*Bartlett*
Perkins, Thomas Alexander	*A. G.*	*Gorham*
Perley, James Dwight	*M. E.*	*Durham*
Peterson, Bernard Oliver	*I. E.*	*Rochester*
Peterson, Conrad Francis	*Bus. Fund.*	*Amesbury, Mass.*
Peterson, Stanley Samuel	*Bus. Fund.*	*Manchester*
Philbrick, Alfred Parson	*E. E.*	*Portsmouth*
Pike, Charles Willard	*Ch. E.*	*Colebrook*
Plourde, Edward Francis	*A. G.*	*Manchester*
Polisson, Paul Angel	*C. E.*	*Gloucester, Mass.*
Powers, Virginia	*A. G.*	*Concord*
Prentice, Lawrence Ancel	*A. G.*	*Winchester*
Prescott, Philip Thompson	*A. G.*	*Stratham*
Quint, Levi Wilder	*A. G.*	*Conway*
Ramsay, Harold Spencer	*A. G.*	*Concord*
Randell, Norman James	*A. G.*	*Amesbury, Mass.*
Redden, Anna Josephine	*A. G.*	*Dover*

Name	Course	P. O. Address
Reid, Orrien Kenneth	*E. E.*	*Gorham*
Remington, Louise Elizabeth	*A. G.*	*Manchester*
Richards, Robert Ladd	*Pre-Med.*	*Durham*
Richardson, Madeline Smith	*A. G.*	*Manchester*
Ricker, Wayne Sherwood	*A. G.*	*Rochester*
Riley, Elwyn Arthur	*E. E.*	*Concord*
Robbins, Paul James	*Ch. E.*	*Berlin*
Roche, John Francis	*A. G.*	*Manchester*
Rogers, Barron Terry	*Agr.*	*Franklin*
Rolfe, Preston Elwell	*E. E.*	*Portsmouth*
Ross, Lawrence Waldo	*M. E.*	*Gorham*
Rowell, Leonard Dexter	*A. Ch.*	*Manchester*
St. Clair, John Edward, Jr.	*I. E.*	*Laconia*
St. Francois, Robert Gerald	*A. G.*	*Nashua*
Saltmarsh, Gertrude Elizabeth	*A. G.*	*Concord*
Sampson, Myrtle Louise	*A. G.*	*Hampton Beach*
Sands, Virginia	*A. G.*	*Portsmouth*
Santy, Clifford George	*Pre-Med.*	*Lisbon*
Sargent, Murray Hiram	*E. E.*	*New London*
Sayward, Mary Ella	*A. G.*	*Lancaster*
Schurman, Wilbur Morrison	*Educ.*	*Lancaster*
Schwartz, Joseph	*A. G.*	*Portsmouth*
Scott, George Washington	*Arch.*	*Rochester*
Scott, Richard Ring	*C. E.*	*Raymond*
Shannon, Gertrude	*A. G.*	*Concord*
Sheehan, Thomas Paul	*For.*	*Portsmouth*
Sherwood, Henry	*Pre-Med.*	*Dover*
Silverman, William Royal	*Pre-Med.*	*Manchester*
Slack, James Edward	*A. G.*	*Cornish*
Slack, Raymond Sutton	*A. G.*	*Meriden*
Smart, Kenneth Rutledge	*For.*	*Portsmouth*
Smith, Dorothy Eleanor	*A. G.*	*Londonderry*
Smith, Elizabeth Wingate	*A. G.*	*Dover*
Smith, Ernest Wilbur	*C. E.*	*Manchester*
Smith, Eugene	*M. E.*	*New Hampton*
Smith, Karl Leavitt	*Educ.*	*Laconia*
Smith, Malcolm Walker	*Educ.*	*Mechanic Falls, Maine*
Smith, Marjorie Helen	*Phys. Ed.*	*Newfields*
Snell, Fred William	*Ch. E.*	*Lisbon*

Name	Course	P. O. Address
Spinney, Roger Hammond	*A. G.*	*Portsmouth*
Spires, George Vincent	*E. E.*	*Salem, Mass.*
Stafford, David Dexter	*E. E.*	*Berlin*
Steele, Owen Eldred	*A. G.*	*Gloucester, Mass.*
Stenberg, Henry George	*A. Ch.*	*Union*
Stevens, Frances Evelyn	*A. G.*	*Manchester*
Stokes, Stewart Lincoln	*Bus. Fund.*	*Melrose, Mass.*
Stone, John Eaton	*Ch. E.*	*Northwood Center*
Strom, Carl Rodney	*A. G.*	*Concord*
Sullivan, James Arnold	*E. E.*	*Boston, Mass.*
Sullivan, Ruth Frances	*H. E.*	*Somersworth*
Swallow, Donald Walcott	*Pre-Med.*	*Manchester*
Sweet, Percy Harold	*Bus. Fund.*	*Lisbon*
Teague, Julian Hall	*A. G.*	*Portsmouth*
Tenney, Forrest Franklin	*A. H.*	*Antrim*
Thayer, Gordon Oliver	*A. G.*	*Dover*
Thompson, Charlotte	*A. G.*	*Manchester*
Thompson, Ernest Edward	*For.*	*Manchester*
Thompson, Robert Martin	*C. E.*	*Hudson*
Thorin, Ernest Gerald	*I. E.*	*Dover*
Tolman, Gordon Francis	*A. G.*	*Chesham*
True, Eunice Gertrude	*H. E.*	*West Hampstead*
Vallancourt, William Richard	*A. G.*	*Manchester*
Varney, Doris Grace	*A. G.*	*Center Strafford*
Viano, Lawrence Francis	*Bus. Fund.*	*North Hampton*
Volkman, William John	*A. G.*	*Manchester*
Wageman, Theofiel Morie	*Educ.*	*Manchester*
Waite, Harold Gardner	*Bus. Fund.*	*Manchester*
Walden, George Richard	*E. E.*	*Portsmouth*
Wales, Maurice Arthur	*Ch. E.*	*Penacook*
Walker, Frederick Nason, Jr.	*E. E.*	*Manchester*
Walstrom, John Erwin	*E. E.*	*Keene*
Wark, David Leslie	*Bus. Fund.*	*Winchester*
Wettergreen, Charles Oscar	*A. G.*	*Malden, Mass.*
Wheelock, Howard Ellis	*A. G.*	*Keene*
Whitcomb, Frank William	*E. E.*	*Bellows Falls, Vt.*
White, Emily Thornedyke	*A. G.*	*Rye Beach*
White, Waldron Carter	*Pre-Law*	*Peterborough*
Whitehouse, Watson Raymond	*Bus. Fund.*	*Holyoke, Mass.*

Name	Course	P. O. Address
Whyte, Joseph James	*For.*	*Lancaster*
Williams, Ralph Harry	*M. E.*	*Lebanon*
Williamson, Dean Plummer	*Bus. Fund.*	*Concord*
Wilson, Charles Henry	*A. G.*	*Portland, Maine*
Winslow, Rachel Elizabeth	*H. E.*	*Somersworth*
Witham, Cedric Ned	*M. E.*	*Grantham*
Witkus, Arthur Henry	*M. E.*	*Newport*
Wittenberg, Hyman Herbert	*M. E.*	*Concord*
Wood, Edward George	*C. E.*	*Rochester*
Wood, Harry Laurence	*E. E.*	*Providence, R. I.*
Woodbury, Stanley Nathaniel	*Educ.*	*Contoocook*
Wooldridge, Sydney Milton	*A. G.*	*Laconia*
Worcester, Franklin Augustus	*A. G.*	*Hollis*
Wright, Norman Arthur	*A. G.*	*Keene*
Young, Margaret Elizabeth	*A. G.*	*Keene*

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Abbe, George Bancroft	*A. G.*	*Dublin*
Abrams, Carl Ogdon	*Pre-Law*	*Portsmouth*
Adam, Laurent Albert	*A. G.*	*Manchester*
Adams, Frederick Lewis	*A. G.*	*Salisbury*
Adams, Raymond Houghton	*Bus. Fund.*	*Concord*
Ahlgren, Clarence Livingston	*M. E.*	*Manchester*
Allen, Russell Lynn	*Ch. E.*	*North Newport*
Amazeen, Walter Melvin	*E. E.*	*Farmington*
Andberg, William Gust	*For.*	*West Concord*
Anderson, Wendell Everett	*C. E.*	*Milan*
Andrews, Robert Orin	*E. E.*	*Medford, Mass.*
Andrews, Virginia Natalie	*A. G.*	*Rochester*
Applin, Frank Boutilier	*M. E.*	*Providence, R. I.*
Atkins, Arden Gerald	*A. G.*	*Haverhill*
Atwood, Robert Earle	*Bus. Fund.*	*Concord*
Auerbach, Richard Dexter	*A. G.*	*Durham*
Babcock, Janet Marion	*A. G.*	*Bristol, Conn.*
Bacon, Everett Holton	*Bus. Fund.*	*West Lebanon*
Baker, Robert Fletcher	*For.*	*Manchester*
Baldacci, Elda Angela	*Phys. Ed.*	*Claremont*
Baldwin, Willard Justus	*C. E.*	*Colebrook*
Ballou, James Monroe	*Pre-Med.*	*Keene*

Name	Course	P. O. Address
Barney, Richard John	*Bus. Fund.*	*Whitefield*
Barry, Robert Elmer	*A. G.*	*Dorchester, Mass.*
Bartlett, Florence Anna	*A. G.*	*Claremont*
Basim, Mary Mercedes	*A. G.*	*Portsmouth*
Bateman, John Robinson	*M. E.*	*Claremont*
Bateman, Robert Taylor	*Pre-Med.*	*Concord*
Battles, Chester Warren	*Pre-Law*	*Manchester*
Beecher, Clarence Leland	*Pre-Law*	*Errol*
Beede, Arnold Henry	*M. E.*	*Hampstead*
Behan, Harry Chester	*Bus. Fund.*	*Dover*
Berry, Ada Gertrude	*A. G.*	*Dover*
Beverstock, Malcolm Green	*Bus. Fund.*	*Keene*
Bieling, Howard John	*A. G.*	*Harrington Park, N. J.*
Biro, Helen Blanche	*A. G.*	*Newmarket*
Black, Rochelle Isabelle	*A. G.*	*Nashua*
Blaine, Kenneth Arthur	*Ch. E.*	*Manchester*
Blaisdell, Charles Albert	*Ch. E.*	*Somersworth*
Blaisdell, Fred William	*M. E.*	*Goffstown*
Blaisdell, Leslie Newton	*Hort.*	*Goffstown*
Boardway, Barbara	*A. G.*	*Claremont*
Booth, Bradley Hyatt	*E. E.*	*Laconia*
Boston, Elwyn Richard	*M. E.*	*Dover*
Bournival, Gertrude Elizabeth	*A. G.*	*Manchester*
Boyajian, Aramis Arthur	*A. Ch.*	*Nashua*
Bremner, Robert Marshal	*A. G.*	*Manchester*
Brewster, Donald Leslie	*C. E.*	*West Lebanon*
Brianos, Christos D.	*Ch. E.*	*Manchester*
Brown, Charles Stanley	*Agr.*	*Wentworth*
Bruce, Gordon G.	*A. G.*	*Claremont*
Bujnievicz, Jennie	*A. G.*	*Laconia*
Bullard, Lester	*A. G.*	*Concord*
Burlingame, Roland Smith	*E. E.*	*Lebanon*
Burns, Kate Angelia	*H. E.*	*Milford*
Burns, Warren Whitcomb	*A. G.*	*Manchester*
Buttrick, Lloyd	*A. G.*	*Hillsboro*
Buxton, Agnes Lucille	*A. G.*	*Nashua*
Bryan, James Joseph	*For.*	*Bristol*
Cantlin, Clark Alson	*A. G.*	*Lebanon*
Carlton, Alden Lee	*Bus. Fund.*	*Goffstown*

FRESHMEN

Name	Course	P. O. Address
Carswell, Philip John	*Ch. E.*	*Chesham*
Carter, Theodore Batchelder	*Pre-Law*	*Manchester*
Casey, Mary Catherine	*H. E.*	*Somersworth*
Chaloner, Stewart Livingstone	*Bus. Fund.*	*Nashua*
Chamberlin, Gertrude Alice	*A. G.*	*Manchester*
Chapman, Carleton Abramson	*A. G.*	*Groveton*
Chase, Dorothy Louise	*Phys. Ed.*	*Weare*
Chestnolvich, Walter Peter	*For.*	*Nashua*
Clark, Burton Chase	*A. G.*	*Exeter*
Clark, Elroy Graham	*Pre-Law*	*Portsmouth*
Clark, Fred Towle	*Educ.*	*Portsmouth*
Clark, Grace Deborah	*A. G.*	*Woodstock*
Clark, Harvey Ambrose	*For.*	*Hollis Center, Maine*
Clark, Maurice Varney	*A. G.*	*Manchester*
Clark, Roy William	*Bus. Fund.*	*Manchester*
Clarkson, Richard Blodgett	*A. G.*	*Newburyport, Mass.*
Clifford, Thomas Henry	*For.*	*Franklin*
Clogston, Charlotte Montague	*Phys. Ed.*	*Ely, Vt.*
Collins, Muriel Elizabeth	*H. E.*	*South Danville*
Congdon, Linwood Harvey	*M. E.*	*Troy*
Cook, Leslie Eugene	*M. E.*	*Portsmouth*
Cooper, Paul Herman	*C. E.*	*Lincoln*
Copadis, James Thomas	*A. G.*	*Manchester*
Cormier, Ralph	*C. E.*	*Manchester*
Corson, Cynthia Towle	*A. G.*	*Dover*
Corson, Emerson	*Ch. E.*	*Rochester*
Couture, Albert Elzear	*E. E.*	*Claremont*
Cram, Joseph Leavitt	*C. E.*	*Hampton Falls*
Crawford, Clayton Harold	*E. E.*	*New London*
Creteau, Wilfrid William	*A. G.*	*Rochester*
Cronshaw, Thomas Hanscomb	*Bus. Fund.*	*Newfields*
Crooks, Helen Frances	*A. G.*	*Malone, N. Y.*
Crosby, George Edward	*Bus. Fund.*	*Hanover*
Currier, James Luke	*M. E.*	*Tilton*
Currul, Beatrice Sherwood	*H. E.*	*Nashua*
Cuthbert, Karl Raymond	*P. H.*	*Newport*
Dane, Lucille	*A. G.*	*Nashua*
Daroska, Mary Magdelene	*A. G.*	*Pittsfield*
Darrah, Cynthia Florence	*A. G.*	*Mont Vernon*

Name	Course	P. O. Address
Davidson, Leon Montique	*E. E.*	*Berlin*
Davis, Louise	*A. G.*	*Farmington*
Dawson, Charles Reginald	*M. E.*	*Claremont*
Decker, William Cunningham	*A. G.*	*Manchester*
Demos, Arthur Nicholas	*A. G.*	*Concord*
deMoulpied, David Allen	*M. E.*	*Manchester*
Dente, Nelson John	*C. E.*	*Barre, Vt.*
Derby, Harold Raymond	*A. G.*	*Woodsville*
Devereaux, Mary Eileen	*H. E.*	*Somersworth*
Dickey, Edna Frances	*A. G.*	*Salem*
Dickson, Howard Thornwell	*E. E.*	*Manchester*
Dinnerman, Maurice	*Pre-Med.*	*Portsmouth*
Doe, Margaret	*A. G.*	*Dover*
Dogan, Adam Edward	*E. E.*	*Nashua*
Dow, Eustace Douglas	*For.*	*Hanover*
Dozois, Louise Irene	*A. G.*	*Manchester*
Dufton, Norman Mitchell	*M. E.*	*Exeter*
Dumont, Omer Mitchell	*A. G.*	*Marlboro*
Dunlap, Catherine Alice	*A. G.*	*Lancaster*
Dunnan, Donald Wood	*Educ.*	*Everett, Mass.*
Durgin, Margaret Worthen	*A. G.*	*Portsmouth*
Dwyer, James Howard	*Pre-Med.*	*Somersworth*
Dziura, Francis Richard	*A. G.*	*Manchester*
Eastwick, John	*E. E.*	*South Tamworth*
Eaton, Marjorie Louise	*A. G.*	*Melrose, Mass.*
Edgerley, Herman Dore	*M. E.*	*Chocorua*
Edgerly, John Hilton	*M. E.*	*Meredith*
Eldridge, Paul Woodbury	*A. G.*	*Portsmouth*
Elizabeth, Lucien A.	*A. G.*	*Manchester*
Elliott, Harold Hutchins	*I. E.*	*Danvers, Mass.*
Fadden, Eugene Elbridge	*C. E.*	*Meriden*
Farrington, Helen Barr	*A. G.*	*Claremont*
Fearon, John Henry	*A. G.*	*Saco, Maine*
Feindel, Howard Walker	*E. E.*	*Berlin*
Felch, J. Eugene	*Pre-Law*	*Winchester*
Ferrini, Lincoln Paul	*Pre-Law*	*Portsmouth*
Ferry, Clarence Everett	*C. E.*	*Manchester*
Fields, Margaret Edith	*A. G.*	*Suffield, Conn.*
Files, Carolyn May	*Educ.*	*Meredith*

Name	Course	P. O. Address
Finn, Marie Veronica	*A. G.*	*Newfields*
Fisher, Albert Charles	*A. G.*	*Rochester*
Fitch, Ruth Cleo	*H. E.*	*Lancaster*
Fletcher, John Christopher	*Arch.*	*Plymouth*
Floyd, Wesley Rufus	*C. E.*	*South Hampton*
Fosher, Harold Bert	*M. E.*	*Bedford*
Foster, Clayton Reginald	*A. G.*	*Manchester*
Foster, Everett Clarke	*M. E.*	*Windham*
Foster, Virginia Frances	*A. G.*	*Manchester*
Fothergill, William Norris	*Ch. E.*	*Pittsfield*
Fox, John Trow	*C. E.*	*Mont Vernon*
French, Thomas Penn	*Bus. Fund.*	*Durham*
Gaffney, Edward Joseph	*A. Ch.*	*Nashua*
Gage, Norman Dwight	*E. E.*	*Newport*
Gamache, LeVerne Joseph	*Ch. E.*	*Stewartstown*
Garland, Harold Roy	*E. E.*	*Portsmouth*
Garland, Thomas Emery	*A. G.*	*Gorham*
Garneau, Andrew Joseph	*Bus. Fund.*	*Franklin*
George, Margaret Elizabeth	*A. G.*	*Newmarket*
Gibbons, Henry Raymond	*Bus. Fund.*	*Lowell, Mass.*
Giffin, John Fraser	*E. E.*	*Wilton*
Gilman, John Garland	*For.*	*Laconia*
Glennon, Francis John	*A. G.*	*Manchester*
Goldstein, Rose Barbara	*A. G.*	*Portsmouth*
Goodman, Ruth Polimer	*A. G.*	*Portsmouth*
Goodman, Samuel Benjamin	*A. G.*	*Lebanon*
Goodwin, Marian Pauline	*A. G.*	*Goffstown*
Gormley, Eugene Gordon	*Pre-Med.*	*Lancaster*
Gove, Wendel Alson	*E. E.*	*Hinsdale*
Grant, Alanson Ware	*E. E.*	*Lyme*
Greenwood, Norman Keniston	*Bus. Fund.*	*North Andover, Mass.*
Grenier, Gabrielle Marguerite	*A. G.*	*Manchester*
Griffin, Rodney Almus	*C. E.*	*Franklin*
Griffith, Robert Frederick	*A. G.*	*Nashua*
Grinnell, George Herbert	*Pre-Law*	*Derry*
Hadley, Robert Peaslee	*Bus. Fund.*	*Manchester*
Hanna, Edward James, Jr.	*Pre-Law*	*West Swanzey*
Hannigan, Teresa Frances	*A. G.*	*Exeter*
Hardy, Clyde Solon	*Ch. E.*	*Enfield*

Name	Course	P. O. Address
Harrington, Donald Robinson	*C. E.*	*Manchester*
Hart, Herman Howard	*A. G.*	*Manchester*
Hascall, Olive Frances	*A. G.*	*Riverside, R. I.*
Haskell, Louise Frasier	*A. G.*	*Dover*
Hastings, Vera Thomas	*H. E.*	*Claremont*
Hatch, Carolyn Trafton	*A. G.*	*Kittery, Maine*
Hatton, Joseph Herbert	*A. G.*	*Manchester*
Haweeli, Edward Herbert	*Pre-Med.*	*Berlin*
Hawkins, Frederick William	*C. E.*	*Troy*
Haynes, Wesley Eaton	*C. E.*	*Nashua*
Hazen, Constance Dana	*A. G.*	*Lebanon*
Helfer, Anna Katherine	*A. G.*	*Exeter*
Henault, Leopold	*M. E.*	*Newport*
Henderson, Paul Wesley	*A. H.*	*Merrimack*
Hennessey, William Edward	*Educ.*	*Lakeport*
Hibbard, Blanche Louise	*Phys. Ed.*	*Penacook*
Hibbard, Ruth	*A. G.*	*Lebanon*
Higgins, Francis Ernest	*A. G.*	*Salem Depot*
Hill, Alice Pearle	*H. E.*	*Goffstown*
Hill, Wilfred Clayton	*C. E.*	*Woodsville*
Hills, Helen	*A. G.*	*Milford*
Hills, Jeanne Champlain	*A. G.*	*Dover*
Hobbs, Maurice Earl	*E. E.*	*Lyme*
Hogan, Christine Agnes	*A. G.*	*Newfields*
Holt, John Dale	*A. G.*	*Nashua*
Hough, Marion Anita	*A. G.*	*Riverside, R. I.*
Hounsell, Hazel Towle	*A. G.*	*Durham*
Howard, John Adams	*A. G.*	*Concord*
Howe, Chester William	*A. G.*	*Franklin*
Howell, Frederick Fisher Taylor	*A. G.*	*Portsmouth*
Hoyt, Richmond Hammond	*E. E.*	*Concord*
Hunkins, Charlotte Louise	*A. G.*	*Auburn*
Hunt, Roger Whitcomb	*E. E.*	*Swanzey*
Hurley, George Norton	*A. G.*	*Concord*
Hurley, Thomas Dennie	*Bus. Fund.*	*Wilton*
Huse, Ernest Leslie	*E. E.*	*Meriden*
Jackson, Carrol Edward	*Ch. E.*	*Dover*
Jackson, Luther Myron	*A. G.*	*Bethlehem*
Janetos, George Simos	*Pre-Law*	*Dover*

Name	Course	P. O. Address
Jeffery, Robert Hamilton	*M. E.*	*Manchester*
Johnson, Charles Alfred	*M. E.*	*East Jaffrey*
Jordan, William Dexter	*C. E.*	*Colebrook*
Josselyn, Dorothy	*H. E.*	*Portsmouth*
Joy, Roland Elmer	*For.*	*Manchester*
Joyal, Henry Joseph	*E. E.*	*Manchester*
Kearns, Kenneth Edward	*Bus. Fund.*	*Wolfeboro*
Kessler, Dorothy Sylvia	*A. G.*	*Nashua*
Kilton, Margery Lucille	*A. G.*	*West Lebanon*
Kimball, Donald Spurr	*Pre-Law*	*Franklin*
Kimball, Jason Tolles	*Bus. Fund.*	*Nashua*
King, Florence Lee	*A. G.*	*Manchester*
Kirkpatrick, John Gaskill	*M. E.*	*Concord*
Kittredge, George Dimmick	*Hort.*	*Mont Vernon*
Klein, Norman Wendell	*Bus. Fund.*	*Fitchburg, Mass.*
Knox, George Crane	*M. E.*	*Concord*
Kramer, Grant	*C. E.*	*Ossipee*
Krinsky, Anna	*A. G.*	*Somersworth*
Kruger, Herman Adolph	*Bus. Fund.*	*Exeter*
Kushious, Samuel Gilbert	*A. G.*	*Portsmouth*
Labelle, Henry Antoine	*A. G.*	*Manchester*
Lacayo, Julio Cesare	*C. E.*	*Leon, Nicaragua*
LaMarche, Richard Alfred	*Bus. Fund.*	*Nashua*
Lamberton, Alfred James	*A. G.*	*Claremont*
Lanen, Prucia Morrill	*A. G.*	*Hampton*
Langlois, Frances Marguerite	*A. G.*	*Manchester*
Lapointe, Roland Edward	*Pre-Med.*	*Manchester*
Laton, Frances Winifred	*A. G.*	*Madbury*
Lavalley, Doris Elizabeth	*A. G.*	*Dover*
Lavoie, Alfred Theodore	*E. E.*	*Epping*
Leach, Bessie Mae	*A. G.*	*Groveton*
Learmonth, Arthur Bignold	*A. G.*	*Lawrence, Mass.*
Leclerc, Gregoire Jean	*For.*	*Manchester*
Lee, Russell Henry	*A. G.*	*Lexington, Mass.*
LeMay, Gerard Leon	*Bus. Fund.*	*Manchester*
Low, Richard Charles	*C. E.*	*Derry*
Lundh, Kurt Stone	*For.*	*Manchester*
McBride, Headley Addison	*For.*	*Wolfeboro*
McCall, David Stuart Russell	*Pre-Med.*	*Providence, R. I.*

Name	Course	P. O. Address
McCammon, Anne	*A. G.*	*Portsmouth*
McCarthy, Charles Michael	*Ch. E.*	*Peabody, Mass.*
McCooey, John Edward	*Bus. Fund.*	*Dover*
McGowan, Lawrence Raymond	*Educ.*	*Fairhaven, Mass.*
McGraw, John Reginald	*Bus. Fund.*	*Dover*
McKinney, Bartlett	*A. G.*	*Berlin*
McLaren, Frederick Robert	*E. E.*	*Manchester*
MacLean, Maynard Gilbert	*Bus. Fund.*	*Concord*
McLeod, Gordon Donald	*A. G.*	*Concord*
McNamara, Robert William	*Arch.*	*West Lebanon*
MacRury, Elwood Forbes	*A. Ch.*	*Manchester*
McSweeney, Francis Burke	*C. E.*	*Concord*
Macdonald, Raeburn Wallace	*C. E.*	*Berlin*
Machon, Herbert William	*M. E.*	*Providence, R. I.*
Mackey, Elmer Adolphe	*Pre-Law*	*Fitzwilliam Depot*
Mahoney, Arthur Joseph	*Educ.*	*Malden, Mass.*
Main, Robert Winston	*Agr. Ch.*	*Manchester*
Marshall, Frances Mary	*A. G.*	*Columbia*
Marshall, George Helmar Frost	*Ch. E.*	*Lisbon*
Marston, Ariel May	*Phys. Ed.*	*Ashland*
Martin, Ellsworth Paul	*Arch.*	*Keene*
Martin, Marion Marie	*A. G.*	*Derry*
Mason, Frances Olive	*A. G.*	*Winchester*
Meader, Elwyn Marshall	*Hort.*	*Rochester*
Meader, Leon Burton	*Agr.*	*Rochester*
Medzela, John Albert	*C. E.*	*Manchester*
Mellett, Dorothy Frances	*A. G.*	*North Woodstock*
Merrill, John Morison	*M. E.*	*Newfields*
Milligan, Roy Bayfield	*E. E.*	*Berlin*
Milot, Lewis Georges	*A. G.*	*West Roxbury, Mass.*
Minard, George Oakman	*A. G.*	*Claremont*
Moore, Gordon Earle	*A. G.*	*Manchester*
Moore, Helen Louise	*A. G.*	*Malden, Mass.*
Morgan, James Francis	*Pre-Med.*	*Salem*
Morrill, Arthur Leroy	*M. E.*	*Salem*
Mulvanity, Richard Timothy	*Pre-Law*	*Nashua*
Munton, John Peter	*C. E.*	*Nashua*
Murray, Kendall Brown	*Bus. Fund.*	*Malden, Mass.*
Mushlin, Harry Ralph	*A. G.*	*Manchester*

Name	Course	P. O. Address
Nash, Anne	*A. G.*	*Framingham, Mass.*
Nichols, Rupert Lorenzo	*M. E.*	*Sanbornville*
Nickerson, Andrew Forrest	*C. E.*	*Portsmouth*
Norton, Charles Edward	*E. E.*	*Rollinsford*
Nowak, Theodore Alexander	*E. E.*	*Exeter*
Nutter, Beatrice Mae	*A. G.*	*Rochester*
Nutting, Harriet Toye	*H. E.*	*Francestown*
Nye, Walter Richard	*M. E.*	*Atkinson*
O'Kane, Richard Hetherington	*Ch. E.*	*Durham*
Osgood, Wilfred Beede	*Ch. E.*	*Epping*
Osgood, William Maurice	*Educ.*	*Pittsfield*
Paine, Philbrook Ten Eyck	*A. G.*	*Durham*
Palmer, Charles Kenneth	*A. G.*	*Rochester*
Palmer, Stephen Billings	*A. G.*	*Stoningham, Conn.*
Paquin, Laurence Gilbert	*A. G.*	*Lebanon*
Parke, Richard Ezra	*C. E.*	*North Conway*
Parker, John Gilbert	*Pre-Med.*	*Guayaquil, Ecuador*
Parker, Nathaniel Alwais	*E. E.*	*New London*
Parks, Elizabeth	*A. G.*	*Nashua*
Parsons, Marjorie Ada	*A. G.*	*Colebrook*
Patch, Austin Addams	*For.*	*Stoneham, Mass.*
Pearson, Rhoda Francena	*H. E.*	*Madison*
Peckham, Warren Francis	*Ch. E.*	*Concord*
Pendergast, Annetta Doria	*A. G.*	*Newmarket*
Perfect, Gordon Robert	*A. G.*	*Hampton Falls*
Perkins, Lillian Rolance	*A. G.*	*Manchester*
Perkins, Walter Maurice	*Pre-Law*	*Hampton*
Phelps, Willard Brooks	*A. Ch.*	*Nashua*
Picard, Leland	*Bus. Fund.*	*Derry*
Pickersgill, William Francis	*M. E.*	*Newton Center, Mass.*
Pickwick, Mary Alma	*H. E.*	*Manchester*
Pike, John Gilbert, Jr.	*C. E.*	*Mill Village*
Pike, Warren Mahlon	*M. E.*	*Melrose, Mass.*
Pilotte, Russell Arthur	*A. G.*	*Whitefield*
Pingree, Thomas Shirley	*A. G.*	*Manchester*
Piper, Elinor Seeton	*A. G.*	*Northwood Ridge*
Pitz, Arthur	*Bus. Fund.*	*Durham*
Platts, Frances Elizabeth	*H. E.*	*Dover*
Plummer, Ray Andrew	*Ch. E.*	*Berlin*

Name	Course	P. O. Address
Porter, Howard Horne	*Bus. Fund.*	*Wolfeboro*
Powers, Richard Matthew	*Pre-Med.*	*Manchester*
Prendergast, Robert Thorpe	*M. E.*	*Claremont*
Prentice, James Mason	*E. E.*	*Holyoke, Mass.*
Purington, Carl Hoben	*Ch. E.*	*Concord*
Quimby, Clyde Warren	*E. E.*	*Claremont*
Rahn, Laurette Mary	*A. G.*	*Manchester*
Randall, John Leslie, Jr.	*A. G.*	*Dover*
Regan, Barbara Jane	*H. E.*	*Portsmouth*
Richardson, Harold Elmer	*Ch. E.*	*Gonic*
Roberge, Harvey Gerard	*Educ.*	*Berlin*
Roberts, Priscilla	*Bus. Fund.*	*Marblehead Neck, Mass.*
Robinson, Elizabeth Ethel	*A. G.*	*Antrim*
Ross, Lorenzo Theodore	*Bus. Fund.*	*Somersworth*
Rowe, Alice Martha	*A. G.*	*Exeter*
Rowell, Barbara	*A. G.*	*Bristol*
Roy, William Joseph	*Bus. Fund.*	*Woodsville*
Rumazza, Robert Paul	*M. E.*	*Rochester*
*Rumery, Ruth Ellen	*A. G.*	*Portland, Maine*
Ryder, Miriam Newell	*A. G.*	*Plaistow*
Sanborn, George Nathaniel	*E. E.*	*Concord*
Savage, John Dana	*C. E.*	*Hampton*
Savard, Donald Emile	*Bus. Fund.*	*North Conway*
Sawtelle, Kenneth White	*P. H.*	*Gorham, Maine*
Sawyer, Curtis Boyd	*M. E.*	*South Danbury*
Saylor, Jeannette Elizabeth	*Educ.*	*Dover*
Schnare, Vernon Archibald	*Bus. Fund.*	*Berlin*
Scripture, Charlotte Rosamond	*H. E.*	*Surry*
Sebra, Zayma Frances	*A. G.*	*Penacook*
Seward, Grace Eaton	*A. G.*	*Exeter*
Sewell, Chester Balch	*A. G.*	*Dover*
Seymour, Raymond Benedict	*C. E.*	*Dover*
Shackford, Louise Josephine	*A. G.*	*Hudson*
Shaver, Jessie Veronica	*A. G.*	*Schenectady, N. Y.*
Sherman, Herbert Andrew	*M. E.*	*Northwood Narrows*
Sherman, Luceba Jane	*A. G.*	*Croydon*
Shute, Kenneth	*M. E.*	*Whitefield*
Sichol, Adam Bernard	*For.*	*Newport*

* Repeat freshman.

Name	Course	P. O. Address
Sikoski, Jason Peter	*C. E.*	*Hinsdale*
Silverthorne, Myra	*A. G.*	*Salem*
Small, Norman Libbey	*A. G.*	*Manchester*
Smith, Arthur Parker	*Bus. Fund.*	*Peterborough*
Smith, Dorothy Clara	*H. E.*	*Lincoln*
Smith, Forrest Asa	*Hort.*	*Laconia*
Soule, Dorothy Alberta	*A. Ch.*	*Manchester*
Sowerby, John Young	*A. G.*	*Dover*
Spalding, Helen Elizabeth	*A. G.*	*Plainfield*
Stackpole, Laura	*Bus. Fund.*	*Exeter*
Stark, Robert Lawrence	*A. G.*	*Goffstown*
Stark, Margaret Mary	*A. G.*	*Lawrence, Mass.*
Steele, William Lawrence	*Bus. Fund.*	*Gloucester, Mass.*
Stevens, Ralph Ernest	*M. E.*	*Manchester*
Stewart, Malcolm Alexander	*Bus. Fund.*	*Lakeport*
Stimmell, Lee	*Pre-Law*	*Pittsfield*
Stone, John Curtis	*Bus. Fund.*	*Hartford, Conn.*
Swail, Clark Ebenezer, Jr.	*Pre-Med.*	*Colebrook*
Swain, Pearl Elizabeth	*A. G.*	*Hampton Falls*
Szebak, Frank Edward	*M. E.*	*Nashua*
Szlosek, Edward Francis	*A. G.*	*Nashua*
Tasker, Charles Edwin	*Bus. Fund.*	*Dover*
Tatarcuk, Titus Boleslaw	*E. E.*	*Nashua*
Teague, Ernestine Louise	*A. G.*	*Portsmouth*
Tebbetts, Charles LeRoy	*Bus. Fund.*	*Nashua*
Thomas, Isabelle Ross	*Phys. Ed.*	*Charlestown*
Thomas, Philip Charles	*E. E.*	*Claremont*
Thompson, Helen Anna	*A. G.*	*Manchester*
Thompson, Tuttle Drake	*M. E.*	*East Andover*
Thompson, Virginia	*A. G.*	*Manchester*
Thorn, Leif Victor	*E. E.*	*Berlin*
Thorp, Frank Dustin	*C. E.*	*Manchester*
Tice, Seymour Wilmont	*A. G.*	*Gorham*
Tighe, Robert John	*Pre-Law*	*Canaan*
Tilc, Victor Sylvester	*A. Cn.*	*Groveton*
Tilton, William French, Jr.	*E. E.*	*Portsmouth*
Tinker, Gertrude Martha	*A. G.*	*Dover*
Titus, Laurence Spear	*For.*	*Fairlee, Vt.*
Tobey, Constance	*A. G.*	*Hampton*

Name	Course	P. O. Address
Tobey, Francelia Marian	*A. G.*	*Manchester*
Toolin, Joseph Patrick	*A. G.*	*North Sutton*
Towle, Alice Stratton	*Phys. Ed.*	*Exeter*
Trzuskoski, Benjamin Bernard	*A. Ch.*	*Terryville, Conn.*
Tucker, Ernest Elmer	*M. E.*	*Portsmouth*
Turcott, Dixon Hodgdon	*Pre-Law*	*Concord*
Twitchell, Keith Irvin	*C. E.*	*Berlin*
VanderHoeff, Joseph	*M. E.*	*Manchester*
Varjabedian, Robert	*C. E.*	*Manchester*
Varney, Kenneth Melville	*Educ.*	*Newmarket*
Varney, Robert Winfield	*Bus. Fund.*	*Dover*
Vaughan, John Robert	*For.*	*Manchester*
von Fischer-Benzon, Nina Louise	*A. G.*	*Staten Island, N. Y.*
Wagner, William Isaac	*Bus. Fund.*	*Berlin*
Wakely, Bertha Shore	*H. E.*	*Nashua*
Walker, James Bartlett	*M. E.*	*Dover*
Washburn, John Davies	*A. G.*	*North Adams, Mass.*
Watson, Doris Ethelyn	*Educ.*	*Center Sandwich*
Wells, Lloyd Leslie	*A. G.*	*Woodsville*
Wentworth, Lloyd Hall	*A. G.*	*Salmon Falls*
Wentzell, Eva Selina	*A. G.*	*Worcester, Mass.*
Werner, Ernest Hugo	*M. E.*	*Manchester*
Wheeler, John	*A. G.*	*Plymouth*
Wheelock, Harold Francis	*A. G.*	*West Swanzey*
Whitcher, John Clinton	*M. E.*	*Tilton*
Whipple, Ethel Juliette	*H. E.*	*Fitzwilliam Depot*
White, Kenneth Ernest	*E. E.*	*Berlin*
White, Winslow Moulton	*Bus. Fund.*	*Hampton*
Whitney, Edward Stanley	*P. H.*	*Manchester*
Whitney, Ronald Edward	*C. E.*	*Pittsfield*
Whittemore, Edward Johnson	*M. E.*	*Plymouth*
Whyte, Edna Ellen	*A. G.*	*Lancaster*
Wiggin, Ralph Edwin	*A. G.*	*Dover*
Willard, Raymon Charles	*Agr.*	*Temple*
Williams, Dorothy Mae	*A. G.*	*Dover*
Winterton, Ruth Ellen	*A. G.*	*Manchester*
Wolf, William	*Pre-Med.*	*Milford*
Woodward, Florence Dewhurst	*H. E.*	*Berlin*
Worthen, John Henry	*M. E.*	*Plymouth*

Name	Course	P. O. Address
Yandow, David Arthur	*Ch. E.*	*Berlin*
York, John Weare	*Bus. Fund.*	*Kensington*
Young, Duanne Eugene	*A. G.*	*Enfield*
Young, Hammond Alvah	*Educ.*	*South Acworth*
Young, Marjorie Bessie	*A. G.*	*Rochester*
Young, Rebecca	*Bus. Fund.*	*Exeter*
Zolkos, Stasia Blanche	*A. G.*	*Pelham*
Zotto, Anthony	*E. E.*	*Claremont*

TWO-YEAR AGRICULTURAL MEN

First-Year (13)

Name	P. O. Address
Blood, Edward J.	*Hanover*
Bohanan, Ivan	*Contoocook*
Colburn, Robert Tenney	*Dracut, Mass.*
Fowler, Kenneth Rowe	*Henniker*
Harris, Vernon Stanley	*Peterborough*
Hazen, Donald Shattuck	*Littleton*
Jameson, Roland Sanborn	*Henniker*
Pierce, Maurice	*Tamworth*
Steele, Moody Gilbert	*Nashua*
Thompson, Eugene Tracy	*Lowell, Mass.*
Thompson, Herman Ellis, Jr.	*Manchester*
White, Roger Everett	*Winchester*
Wood, Dwight Cummings	*Cornish*

Second-Year (9)

Bradeen, Charles Edwin	*Cornish, Maine*
Despres, Wilfred Laurent	*Marlboro*
Dining, Carl Moulton	*Stratham*
Hill, Arthur	*Laconia*
Hills, James Herbert	*Hollis*
Nelson, Stanley	*Hillsboro*
Northrup, Clayton C.	*Milford*
Simmons, Walter Malcom	*Alstead*
Todd, Laban Paige	*New Boston*

Specials (41)

Name	Course	P. O. Address
Bilodeau, Armand Alfred	*A. G.*	*Rochester*
Bingham, Harold Clinton	*A. G.*	*Dover*
Burbank, Elliott Winsor	*A. G.*	*Alton*
Calnan, Catherine Dorothy	*A. G.*	*Manchester*
Carrell, Henry Gustavus	*A. G.*	*Exeter*
Cummings, Doris Elizabeth	*Agr.*	*Hanover*
Daley, Mary M.	*A. G.*	*Dover*
Flanders, Earl S.	*A. G.*	*Dover*
Flint, Daniel	*A. G.*	*Dover*
Fogg, Hazel Corliss	*A. G.*	*Durham*
Fuller, Elsie Kate	*A. G.*	*Durham*
Garvin, Clyde	*A. G.*	*Dover*
Gerrish, Elsie Augusta	*A. G.*	*Meredith*
Girardet, Gustave	*Agr.*	*Ashland*
Gouin, Madeline	*A. G.*	*Dover*
Hallisey, Dennis Leo	*Pre-Med.*	*Nashua*
Higgins, Leroy James	*A. G.*	*Littleton*
Kalijarvi, Dorothy	*A. G.*	*Durham*
Kirk, Bertha	*A. G.*	*Dover*
Langley, Marion Helen	*A. G.*	*Exeter*
Lizio, Ralph Americo	*A. G.*	*Portsmouth*
Lougee, Robert William	*Agr.*	*Milton*
Minichiello, Lewis Allan	*A. G.*	*Portsmouth*
Mitchell, Angie	*H. E.*	*Durham*
Muchmore, Effie Louise	*H. E.*	*North Woodstock*
Muzzy, Nellie L.	*A. G.*	*Jefferson*
Nulsen, Dorothy	*A. G.*	*Durham*
Putnam, Howard Streeter	*Agr.*	*Claremont*
Redden, Catherine R.	*A. G.*	*Dover*
Redden, Eleanor M.	*A. G.*	*Dover*
Royce, Frances Mary	*A. G.*	*Somersworth*
Sink, Heber B.	*A. G.*	*Exeter*
Sayer, James Albert, Jr.	*Ch. E.*	*Salem Depot*
Seavey, Marion Katherine	*A. G.*	*Suncook*
Sluzewski, Andrzy	*Agr.*	*South Hampton*
Stevenson, Douglas McLeod	*A. G.*	*Rochester*
Stolworthy, Marion J.	*H. E.*	*Durham*
Whiting, William Porritt	*Agr.*	*Wilton*

Name	Course	P. O. Address
Williams, Norman Hall	*A. G.*	*Durham*
Winslow, Everett May	*A. G.*	*Dover*
Woznicki, Mathios	*Agr.*	*South Hampton*

SUMMER SESSION, 1929

Name	Graduate	P. O. Address
Adams, Dorothy Quincy	*Holyoke '24*	*Roslindale, Mass.*
Adams, Robert Wallace		*Pittsfield*
Agrafiotis, Chris John	*N. H. '28*	*Manchester*
Agranovitch, Edward Irving		*Colchester, Conn.*
Allan, Philip Farley		*West Lebanon*
Anderson, Hulda Josephine		*Manchester*
Annett, Dorothy Adaline		*Rollinsford*
Atherton, Harlan Ernest	*Yale '25*	*Charlestown*
Averka, Charles Peter		*Lawrence, Mass.*
Ayer, Theodore Henry		*Milton Mills*
Bailey, Thomas Craig	*N. H. '12*	*Hartford, Conn.*
Baker, Catherine Mabel		*Meriden*
Baker, Rachel Felch	*B. U. '13*	*Newmarket*
Bartlett, Benjamin Thomas		*Derry Village*
Bartlett, Fremont Dayton		*Berlin*
Beals, Robert Vernon	*Harvard '27*	*Concord*
Bean, Catherine Frances		*Concord*
Bell, Woodbury Dow		*Hollis*
Bertram, Wallace		*Hanover*
Betz, Edwin		*Whitefield*
Bishop, John Lloyd		*Nashua*
Blaisdell, Daniel Crysler		*Plymouth*
Blanchard, George Walton		*Portland, Maine*
Bolger, Elsie Marie		*Philadelphia, Pa.*
Boothby, Bradford Saunders		*Wakefield, Mass.*
Bottum, Alfred L.		*Bennington, Vt.*
Branon, Anne M.		*Concord*
Brierley, Jean		*Lawrence, Mass.*
Briggs, Mary Lilla		*Auburn, Maine*
Bryant, Floyd G.		*Tilton*
Buffum, Edward Henry		*Manchester*
Burgess, Josph Reed		*Nantucket, Mass.*
Burleigh, Ivy May		*Laconia*

Name	Graduate	P. O. Address
Burlingame, Philip Russell		*Berlin*
Burnham, Gertrude		*Grafton*
Burrill, Guy Francis		*Claremont*
Burroughs, Arthur Travers		*Hudson*
Camps, Lucille C.		*Brooklyn, N. Y.*
Camps, Vivienne Mercedes	*Wellesley '29*	*Brooklyn, N. Y.*
Carpenter, Edna Charlotte		*Willimantic, Conn*
Cass, Gertrude Genevieve		*Topsfield, Mass.*
Chandler, Roland Francis	*N. H. '28*	*Wolfeboro*
Charland, Norman C.		*Lyndonville, Vt.*
Clapp, Richard Caswell		*Concord*
Clark, Gertrude Imogene		*Boston, Mass.*
Clarke, Ida Amelia		*Farmington*
Clarner, Louis George Karl		*Concord*
Cleveland, Harlan Samuel		*North Stratford*
Clifford, Doris Hilda	*N. H. '29*	*Conway*
Cohen, Bessie		*Portsmouth*
Colbert, William Joseph	*Dartmouth '00*	*Durham*
Colby, Arvilla Nesmith		*Newmarket*
Colby, Faoline Hope		*Danville*
Coleman, Mabelle Clow	*Emerson '18*	*Rochester*
Comire, Irene A.		*Franklin*
Connell, John David		*Fall River, Mass.*
Connor, Regina	*N. H. '13*	*Newmarket*
Cooper, Paul Herman		*Lincoln*
Corey, Mildred	*N. H. '29*	*Manchester*
Corson, Hazel		*Rochester*
Corson, Hilda		*Rochester*
Couser, William Griffith	*Wesleyan '27*	*Dover*
Crane, Isabella Cameron	*Wellesley '27*	*Keene*
Crosby, John Franklin		*Danielson, Conn.*
Cummings, Leslie Samuel	*N. H. '26*	*Bethlehem*
Currie, Alexander Blanchard	*N. H. '29*	*Manchester*
Currie, Wilsie Austin		*Providence, R. I.*
Curtis, Lois H.	*Holyoke, '24*	*West Roxbury, Mass.*
Daggett, Albert F.	*N. H. '28*	*Concord*
Dalton, Helen Elizabeth	*Trinity '23*	*Warren, Mass.*
D'Arcy, George Baker		*Dover*
Davis, Alice Lillian		*Fremont*

Name	Graduate	P. O. Address
Davis, Della Rhoda		*Keene*
Degnan, Julia M.		*Manchester*
Dickey, Frank W.		*Manchester*
Dismukes, Judith Lee	*N. H. '26*	*Portsmouth*
Dodge, Charles Eben	*N. H. '28*	*Pittsfield*
Dodge, Charles Frank	*N. H. '22*	*Concord*
Doe, Harvey Franklin	*Bowdoin '21*	*Verona, N. J.*
Doe, Richard Thompson	*Dartmouth '29*	*Dover*
Dolan, Loretta Genevieve		*Nashua*
Dolan, Mary	*N. H. '27*	*Nashua*
Donnelly, John Joseph		*Dover*
Donnelly, Mary		*Manchester*
Donovan, Elizabeth Nichols	*Wellesley '26*	*Newton Centre, Mass.*
Downing, Cecilia Eleanor		*Nashua*
Duggan, Marian Elizabeth		*Berlin*
Dunlap, Lloyd Walter		*Laconia*
Durgin, Roslyn Caverly		*Newmarket*
Dyer, Alice Louise	*Colby '21*	*Charleston, Maine*
Eastham, Alice Scott		*Portsmouth*
Ekdahl, Hulda Elisabeth	*Syracuse '23*	*Nashua*
Emerson, Esther	*Holyoke '20*	*Haverhill, Mass.*
Ewing, Lyle Wilson	*McCormick '06*	*Claremont*
Exerjian, Arax		*New York City*
Farrand, Katherine .		*Berlin*
Farrington, Ervin S.		*Bucksport Centre, Maine*
Fernald, Josephine	*Tufts '29*	*Nottingham*
Fernald, Mary Louise		*Nottingham*
Fish, Joseph Theodore		*East Kingston*
Flynn, Philip John		*Fitchburg, Mass.*
Flynn, Richard Joseph		*Dover*
Fogg, Hazel Corliss		*Durham*
Folsom, Jessie Newcomb		*Sweet Briar, Va.*
Forbes, Ernest Fred	*N. H. '23*	*Enfield*
Foss, Helen Elizabeth	*Bates '27*	*Rochester*
Foster, Martha Harriett		*Taunton, Mass.*
Fountain, Alice Mary		*West Thornton*
Francis, Horace Brown		*Manchester*
French, Anne May		*Exeter*

Name	Graduate	P. O. Address
French, Chauncey Wentworth		*Deerfield*
Fuller, John M.	*Iowa '11*	*Durham*
Fussell, Clyde Greenleaf	*Middlebury '25*	*Whitefield*
Gale, Marjorie Harriet	*N. H. '27*	*Dover*
Gallagher, Mary Veronica		*Nashua*
Gardner, Frederick deWitt		*Portsmouth*
Garvin, Carl Hanson	*N. H. '26*	*Kingston*
Garvin, Mary		*Sanbornville*
Gillette, Charles Welcome		*Nashua*
Gilman, Sheldon Miller		*Pittsfield*
Gleason, Eleanor		*Dublin*
Goodwin, Crystal Evelyn		*Dover*
Gordon, Dorothy May		*Woodfords, Maine*
Gorman, Genevieve		*Thompsonville, Conn.*
Grant, Francis V.	*Colgate '21*	*Williamstown, Mass.*
Gray, Gertrude		*Whitefield*
Gustafson, Walter Ludwig		*Portsmouth*
Guy, John		*Somersworth*
Hamilton, Richard Andrews		*Greenfield, Mass.*
Harmon, Carlyle Henry		*Biddeford, Maine*
Harriman, Carl E.		*Woodsville*
Harriman, Dorothy Story	*N. H. '28*	*Hopkinton*
Harris, Eleanor Woodward	*N. H. '29*	*Keene*
Hart, Ellen Louise		*Gonic*
Hartwell, Lillian Eleanor		*Nashua*
Healy, Arthur Joseph		*Manchester*
Hennessy, Thomas Edward		*Somersworth*
Herring, Cora Allen		*North Attleboro, Mass.*
Herzig, Fred John	*Middlebury '25*	*Simsbury, Conn.*
Hikel, Nolan George		*Plymouth*
Hills, Clarissa		*Pelham*
Hirsch, Marguerite Helen	*Wellesley '23*	*Milton, Mass.*
Hobbs, Ethel Mae		*Somersworth*
Hoitt, Mary Georgene	*N. H. '25*	*Durham*
Holden, Lewis Edward	*Wesleyan '16*	*Rochester*
Holmes, Margaret Catherine		*East Providence, R. I.*
Horne, Ruth Frances		*Rochester*
Hounsell, Elizabeth Jane		*Conway*
Hounsell, William Booth		*Durham*

Name	Graduate	P. O. Address
Howe, Martha Whittieer		*Portland, Maine*
Howell, Cecil Vernon	*N. H. '29*	*Dover*
Hutchins, Samuel		*Wells River, Vt.*
Hutton, Eben B.		*Concord*
Jackson, Herbert William		*Durham*
Jenkins, Ruth Ellen	*N. H. '26*	*Durham*
Jenkins, Walter Scott		*Goffstown*
Jenness, Margaret		*Wolfeboro*
Jennison, David Blanchard		*Milford*
Johnson, Dorothy Lura		*Northwood*
Johnson, Frances Ann		*Littleton*
Johnson, Ralph Roscoe		*Hampton*
Johnson, Sylvia Nathalie		*Bridgewater, Conn.*
Jones, Evelyn Margaret		*Farmington*
Kay, Mildred Kathryn		*Brooklyn, N. Y.*
Kelley, Ethel Etta	*N. H. '27*	*Manchester*
Kendall, Elizabeth Parker		*Manchester*
Kendall, Raymond Osgood	*Clark '20*	*Wethersfield, Conn.*
Keough, George Harland	*N. H. '27*	*Gorham*
Kimball, Merle Donald		*South Danville*
King, Elizabeth Rose		*Manchester*
Kingsley, Mary Barry	*New Rochelle '27*	*Yonkers, N. Y.*
Knight, William Henry		*New London*
Knowles, Mildred Blanche		*South Berwick, Maine*
Langlois, Fred Clayton		*Lebanon*
Lavallee, Hubert Arsene		*Berlin*
Leahy, Elinor Frances	*N. H. '21*	*Somersworth*
LeClaire, Pauline		*Nashua*
Leighton, Charlotte Mary		*Rochester*
Levesque, Adrian Joseph		*Nashua*
Lewis, Allen Ingalls		*Concord*
Lewis, Della Ingalls		*Concord*
Lewis, Frank Herbert	*N. H. '22*	*Terryville, Conn.*
Little, Marion Goodwin		*Manchester*
Lord, Esther Belinda		*Melvin Village*
Lorden, Earl Eastman	*N. H. '21*	*Gerrish*
Lundstrom, Edith O.		*Worcester, Mass.*
Lynch, George William		*Nashua*

Name	Graduate	P. O. Address
Lynch, Mary Elizabeth	*B. U. '25*	*Boston, Mass.*
McCooey, Daniel Farley		*Dover*
MacDonald, Mary Elizabeth	*Smith '09*	*Hartford, Conn.*
MacDonald, Raymond Francis		*Peterborough*
McGrail, Marie Jeannette		*Dover*
McIntosh, David Chalmers, Jr.	*Dartmouth '29*	*Dover*
McIntosh, Sheldon Weeks		*Durham*
McLeod, John Kenneth		*Concord*
McWeeney, Alice Frances		*Nashua*
Mahar, John Edward		*Norwood, Mass.*
Mahoney, Dorothy Regina		*Westboro, Mass.*
Mann, Frederic White	*N. H. '25*	*East Concord*
Manning, John N.		*Rochester*
Martin, Frank Sawyer		*Newport*
Martoski, Stanley John		*Durham*
Marvin, Edward S.		*Portsmouth*
Mattoon, Gertrude Beckler		*Colebrook*
Maynard, Eleanor		*Pawtucket, R. I.*
Maxam, Eugene C.	*N. H. '26*	*Concord*
Meader, Annie Vickery		*Dover*
Meader, Faith		*Gonic*
Meader, Grace McDuffee		*Gonic*
Melendy, E. Alice		*Manchester*
Meloon, Charles Leighton	*N. H. '28*	*Portsmouth*
Melville, Eva Hester	*N. H. '20*	*Newmarket*
Melville, George Donald	*N. H. '20*	*Newmarket*
Mitchel, Edith Foss		*Gonic*
Monahan, Mary Sanborn		*East Kingston*
Moody, Myrtle Helen		*Concord*
Morrison, Leonard Samuel	*N. H. '10*	*Whitefield*
Muchmore, Effie Louise		*North Woodstock*
Muzzey, George Aldrich	*U. of Maine '25*	*Sangerville, Maine*
Myllykangas, Lauri Edward		*Fitchburg, Mass.*
Nagle, William Stephen	*Dartmouth '16*	*Milton Mills*
Nealley, Miriam Andrews		*South Berwick, Maine*
Nelson, John Francis		*Gloucester, Mass.*
Nodes, Norbert Coyne		*Bergenfield, N. J.*
Nyland, Ithamar	*N. H. '28*	*West Hartford, Conn.*

Name	Graduate	P. O. Address
O'Connor, Edwin James		*Hanover*
Olsen, Eleanor C.		*New Bedford, Mass.*
O'Neil, Beatrice Alma		*Kew Gardens, N. Y.*
Orr, May Chapel	*Gordon '26*	*Suffield, Conn.*
Paine, Philbrook Ten Eyck		*Durham*
Paine, Florence Alice	*N. H. '25*	*Wolfeboro*
Palmer, Beatrice Marie		*Medford, Mass.*
Papp, Alpha James		*Manchester*
Parkinson, Everton Harry	*Wesleyan '26*	*Salem Depot*
Parks, Philip Edward		*Waterville, Maine*
Parshley, Sylvester Mansfield		*Wolfeboro*
Patenaude, Merle R.		*Henniker*
Patterson, Anna Alice		*Claremont*
Peabody, Ethel Capitolia		*Peterborough*
Peakes, Dorothy		*South Lincoln, Mass.*
Pearson, Dorothy		*Stratham*
Peaslee, Charlotte Lucy	*N. H. '29*	*Reed's Ferry*
Pelkey, Mildred Cecelia		*Peterborough*
Pellerin, Jesse L.	*N. H. '27*	*West Canaan*
Perkins, Anne	*Middlebury '14*	*Durham*
Perkins, Ernest Marshall		*East Kingston*
Perry, Robert Folsom	*U. S. N. A. '19*	*Nashua*
Peters, Mildred Brice		*Wilton*
Peterson, Stanley Samuel		*Manchester*
Phelps, Marion Batchellor		*Nashua*
Pierce, Norman James		*Wakefield, Mass.*
Pinkham, Marcia Winter		*Portland, Maine*
Pollard, Annie Archer		*Grand Rapids, Mich.*
Powell, Henry Spencer		*Washington, D. C.*
Prescott, Dorothy Nutting	*Portia Law '26*	*Plaistow*
Pride, Eva	*U. of Maine*	*Portland, Maine*
Putnam, Lawrence Sargent		*South Lyndeboro*
Record, Lewis Stillman	*Brown '02*	*East Jaffrey*
Reed, Paul J.		*Manchester*
Richards, Robert Ladd		*Durham*
Richardson, John Russell		*Waterville, Maine*
Ricker, Carolyn H.		
Robbins, Grover Cleveland	*Carnegie '16*	*Derry*
Robinson, Arthur Parks		*North Attleboro, Mass.*

Name	Graduate	P. O. Address
Robinson, Ellis Jaquith	*Muhlenberg '26*	*Woodbridge, N. J.*
Robinson, Kenneth Heaton		*Keene*
Rollins, Ruth Sanders		*West Alton*
Rollins, Willard Dow	*N. H. '25*	*West Alton*
Romano, Filomena		*West Lebanon*
Ross, Lawrence Waldo		*Gorham*
Rowden, Margaret Hall		*Tilton*
Rowell, Leonard Dexter		*Manchester*
Roy, Oscar Joseph		*Newmarket*
Ryan, Anna May		*Rochester*
Sanborn, Miriam Louise		*Tilton*
Sanders, Richard Boynton		*St. Paul, Minn.*
Savory, Emily E.		*Warner*
Sawin, Edward Parker	*Conn. Agric. '21*	*Northwood Centre*
Scott, Ruth Beatrice	*Wellesley '13*	*Wolfeboro*
Seavey, Marion Katherine		*Suncook*
Sevigny, Dorothy I.		*Hartford, Conn.*
Shattuck, Granville		*Granby, Conn.*
Sheehan, Eleanor Lucey		*Portsmouth*
Sheehan, John Francis	*N. H. '28*	*Portsmouth*
Shepard, Harriet E.		*Bedford*
Siiro, Martha Joan	*Worcester Nor. '25*	*Worcester, Mass.*
Sisk, James Burton, Jr.		*Providence, R. I.*
Small, John A.		*Nashua*
Smith, Charlotte Marie	*N. H. '27*	*Dover*
Smith, Evelyn Hope	*N. H. '27*	*Providence, R. I.*
Smith, Henry M.		*Dover*
Smith, Lydia Rebecca	*Maine Wesleyan '92*	*Dudley, Mass.*
Smith, Marion Edith		*Lakeport*
Smith, Otis Sanborn	*M. I. T. '10*	*Laconia*
Smith, S. Marion		*Proctor, Vt.*
Snyder, Katherine Stuart		*Brooklyn, N. Y.*
Soule, Leon L.		*Brunswick, Maine*
Spalding, Willard Benjamin	*B. U. '26*	*Charlton, Mass.*
Stearns, William M.		*Dover*
Steeves, Muriel Frances	*N. H. '28*	*Dover*
Steeves, Reginald V. T.	*N. H. '24*	*Centre Strafford*
Stoddard, Henry Dikeman		*Providence, R. I.*
Stokes, Edward Parker		*Beverly, Mass.*

Name	Graduate	P. O. Address
Stolworthy, Marion J.		*Durham*
Stoughton, Carroll		*Lancaster*
Stratton, Mildred Gladys		*Nashua*
Suitor, Dorothy Emma		*Whitefield*
Sullivan, M. Clare		*Ware, Mass.*
Sylvestre, Naomi Rosana		*Littleton*
Tahaney, John Wilbur		*Beverly, Mass.*
Tallman, Earl Armstrong		*Manchester*
Tarr, Forace Austin		*North Hampton*
Taylor, John Leonard		*Salem Depot*
Terrill, Roy Leslie		*Lakeport*
Theall, John William		*Manchester*
Thompson, Isabelle Beatrice	*Leland Powers '28*	*Hampton*
Thompson, Ruth E.	*N. H. '29*	*Hudson*
Tobey, Ardra		*Wolfeboro*
Tobey, Lester B.		*Hampton*
Tolman, Rodger Milton		*Rochester*
Towle, Elizabeth Lamprey	*Smith '28*	*Dover*
Twomey, Dorothy Winifred		*Concord*
Varney, Elizabeth Adams		*Somersworth*
Vatcher, George Irving		*Hancock*
von Fischer-Benzon, Nina Louise		*Stapleton, S. I., N. Y.*
Wales, Gardner H.		*Durham*
Walker, Susan	*N. H. '25*	*Durham*
Warfield, Vera Willis	*Lasell '16*	*Gorham*
Weast, Florence Iola		*Contoocook*
Weber, Elizabeth Anne	*U. of Chicago '27*	*New York City*
Wentworth Aurelia Edna	*Bates '26*	*Scarboro, Maine*
Wentworth, Lloyd Hall		*Salmon Falls*
West, Marjorie M.	*N. H. '29*	*Worcester, Mass.*
Weston, Helen Brown	*N. H. '17*	*Whitefield*
Weston, Ralph Frank	*N. H. '25*	*Fitchburg, Mass.*
Wheeler, Milton George		*Lewiston, Maine*
Whitney, Bessie Pauline		*Antrim*
Whittemore, Arthur	*N. H. '17*	*Londonderry*
Wilbur, Gladys Elizabeth	*Brown '15*	*Middletown, Conn.*
Willey, Floyd L.		*Manchester*
Willey, Henry Ambrose		*Durham*
Williams, Lillian Annie		*Ridgefield, Conn.*

UNIVERSITY OF NEW HAMPSHIRE

Name	Graduate	P. O. Address
Woods, Wadleigh Winston	*Dartmouth '27*	*Portsmouth*
Wright, Murray J.	*Dartmouth '26*	*Alton*

EXTENSION SHORT COURSES (12)

Name	P. O. Address
Boucher, Irene Elizabeth	*Whitefield*
Burleigh, Ivy May	*Whitefield*
Edmond, Margaret	*Whitefield*
Fassett, Florence Alice	*Lancaster*
Hickey, Julia Redempta	*Whitefield*
Ingerson, Rosamond E.	*Lancaster*
McGoff, Gertrude R.	*Lancaster*
Parkinson, Mary Louise	*Whitefield*
Schurman, Dorothy Gardner	*Lancaster*
Smith, Marguerite Jeanette	*Whitefield*
Stoughton, Carroll	*Lancaster*
Suitor, Dorothy Emma	*Whitefield*

SUMMARY OF REGISTRATION 1928–29

College	Agriculture									Liberal Arts													Technology								Graduate			Grand Total		
																		Home Econ.																		
Regular Courses (Class)	General	Teacher Tr.	Poultry Hus.	Animal Hus.	Dairy Hus.	Forestry	Hort.	Ag. Chem.	Total	General	Arts Chem.	Bus. Fund.	Arch.	Pre-Law	Pre-Med.	Phys. Educ.	Prof. Educ.	Teacher Tr.	Inst.	Ext.	General	Total	Arch.	Chem. Eng.	Civil Eng.	Elec. Eng.	Mech. Eng.	Ind. Eng.	Ind. T. T.	Total	Men	Women	Total	Men	Women	Total
Senior	3	2	4	3	1	8	3	1	25	161	2	18	..	..	12	2	..	7	8	1	..	211	11	12	9	15	4	7	1	59	..	..	..	213	82	295
Junior	2	3	..	4	3	6	1	..	19	187	2	32	..	8	7	3	2	6	5	1	..	253	7	9	10	25	14	7	..	72	..	..	..	222	122	344
Sophomore	7	1	2	..	5	7	2	1	25	182	4	51	..	15	30	9	4	..	..	..	11	306	11	14	17	33	20	8	..	103	..	..	..	317	117	434
Freshman	10	1	..	3	3	8	2	1	28	170	6	43	..	3	20	7	1	..	..	..	12	262	9	21	20	32	20	4	..	106	..	..	..	294	102	396
Special	1	..	..	1	..	..	..	..	2	17	..	....	..	..	1	..	..	..	..	..	2	20	..	..	..	..	1	..	..	1	..	..	..	12	11	23
Graduate	...	...	...	...	...	...	...	...	...	....	..	....	..	..	..	..	..	..	..	..	..	....	..	..	..	..	..	..	..	...	42	19	61	42	19	61
Total 4 yr.	23	7	6	11	12	29	8	3	99	717	14	144	..	26	70	21	7	13	13	2	25	1052	38	56	56	105	59	26	1	341	42	19	61	1100	453	1553
Short Courses																																				
2nd year 2 yr.	8	..	..	..	..	..	..	..	8	....	..	....	..	..	..	..	..	..	..	..	..	....	..	..	..	..	..	..	..	...	..	..	..	8	...	8
1st year 2 yr.	13	..	..	..	..	..	..	..	13	....	..	....	..	..	..	..	..	..	..	..	..	....	..	..	..	..	..	..	..	...	..	..	..	13	...	13
Summer School	...	...	...	...	...	...	...	...	...	344	..	....	..	..	..	..	..	..	..	..	..	....	..	..	..	..	..	..	..	...	..	..	..	173	171	344
Total—Short	21	..	..	..	..	..	..	..	21	344	..	....	..	..	..	..	..	..	..	..	..	344	..	..	..	..	..	..	..	...	..	..	..	194	171	365
Grand total	444	7	6	11	12	29	8	3	120	1061	14	144	..	26	70	21	7	13	13	2	25	1396	38	56	56	105	59	26	1	341	42	19	61	1294	624	1918
Less duplicates	...	..	..	..	..	..	..	..	...	63	..	....	..	..	..	..	..	..	..	..	..	63	..	..	..	..	..	..	..	...	..	..	..	43	20	63
Net total	44	7	6	11	12	29	8	3	120	998	14	1144	..	26	70	21	7	13	13	2	25	1333	38	56	56	105	59	26	1	341	42	19	61	1251	604	1855
Extension	...	..	..	..	..	..	..	..	...	32	..	....	..	..	..	..	..	..	..	..	..	32	..	..	..	..	..	..	..	...	..	..	..	3	29	32

UNIVERSITY OF NEW HAMPSHIRE

COMPARATIVE REGISTRATION

(At Durham)

	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	1,036	161	922	275	1,197
1923–24	1,154	175	993	336	1,329
1924–25	1,202	229	1,029	402	1,431
1925–26	1,347	267	1,143	471	1,614
1926–27	1,467	317	1,217	567	1,784
1927–28	1,658	306	1,277	626	1,903
1928–29	1,553	365	1,294	624	1,918

*Includes Summer School, Two-Year Agriculture, Poultry Extension and Dairy Short Courses.

†During 1918–19 there were 1,467 additional men registered for special military work under the S. A. T. C. organization.

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 NEW HAMPSHIRE ALUMNUS, are $2.00 per year, payable in advance.

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