

THE UNIVERSITY
OF

Vermont

BULLETIN April 15, 1958

FOUNDED 1791 • BURLINGTON, VERMONT

Bulletin of

THE UNIVERSITY OF
VERMONT

THE CATALOGUE • 1957-1958

ANNOUNCEMENTS • 1958-1959

CORRESPONDENCE

Admissions

For all matters pertaining to the admission of undergraduate students, including requisitions for the catalogue, and information concerning rooms, tuition, and scholarships

Director of Admissions

Adult Education

Director of Adult Education

College of Medicine

Dean of the College of Medicine

Graduate College

Dean of the Graduate College

Summer Session

Director of the Summer Session

Transcripts of Records

Office of Admissions and Records

Employment of Seniors and Alumni

Director of Placement

Matters of Alumni Interest

Alumni Secretary

Matters of General University Interest

The President

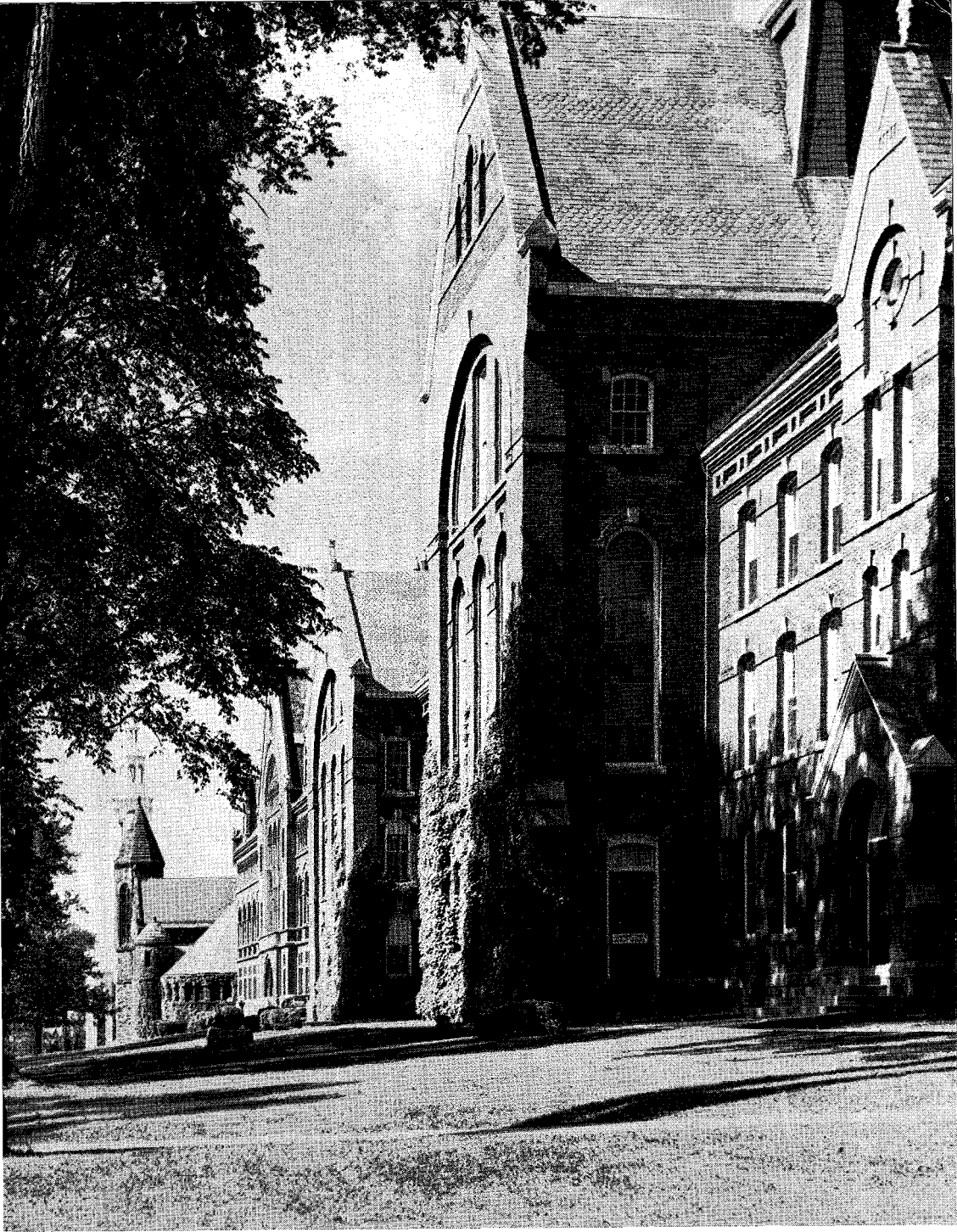
Bulletin of The University of Vermont

VOLUME 55

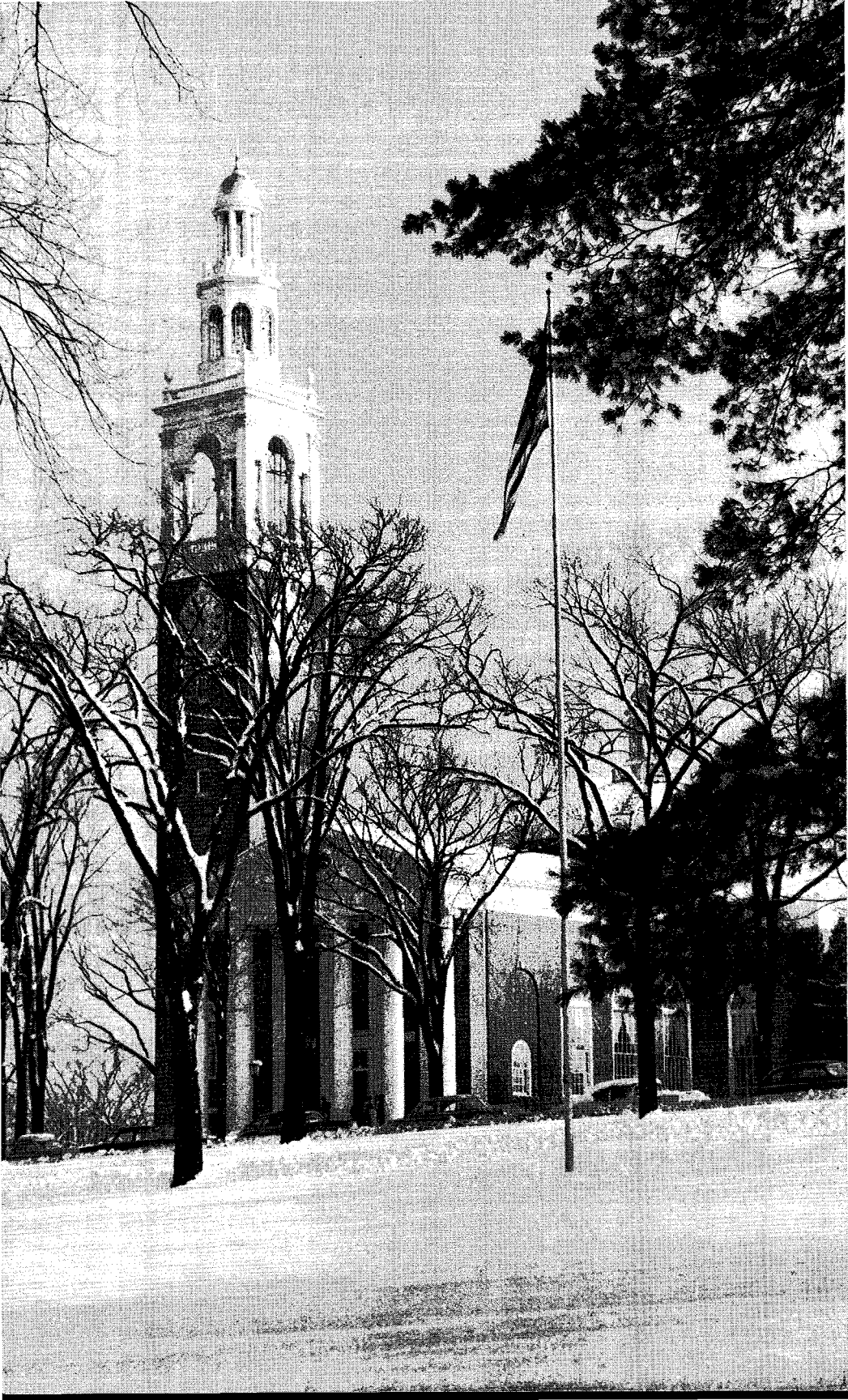
APRIL 15, 1958

NUMBER 5

Published by The University of Vermont, Burlington, Vermont, thirteen times a year—once each in January, February, May, July, September, October, and November; and twice each in March, April, and December; and re-entered as second-class matter November 18, 1955, at the Post Office at Burlington, Vermont, under the Act of Congress of August 24, 1912.



College Row. The Old Mill, in the foreground, was built in 1824, 33 years after the founding of the University by Ira Allen. Beyond it are Williams Science Hall, Billings Library and Ira Allen Memorial.





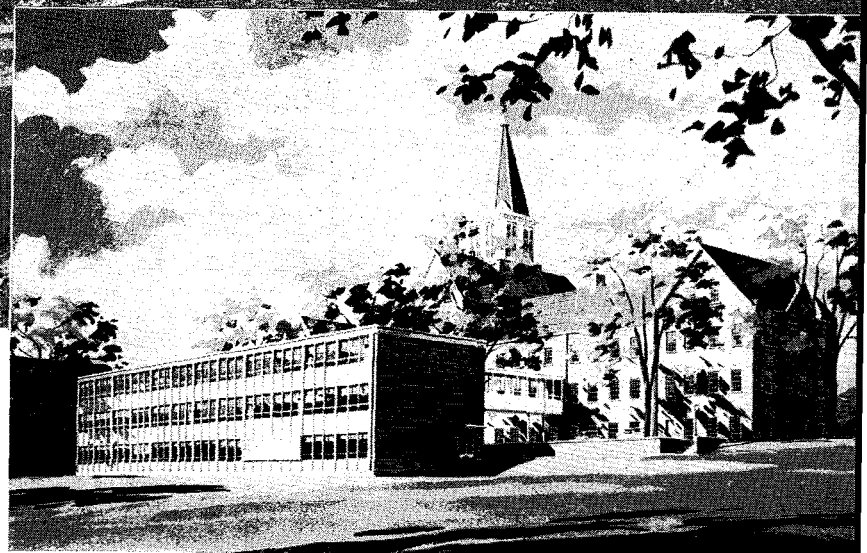
The Waterman Building, completed in 1947, is administration headquarters and center of University activities.

Ira Allen Memorial is one of the most beautiful buildings on the campus.



Situated on the highest hill in Burlington, Vermont's largest city, the University campus commands spectacular panoramas of the Green Mountains to the east and Lake Champlain and the Adirondacks to the west. Redstone campus for women is one-half mile to the south.





The University is in the midst of an extensive building program. Picture at top shows Mason Hall, Simpson Hall and Hamilton Hall, new women's residences on the Redstone campus. Below is architect's drawing of the Old Mill addition, now under construction. First section of the new Medical College building is about to be started.

Traditional Senior Pipe-Lighting Ceremony; UVM Catamount and friends; prize-winning snow sculpture of the Kake Walk Carnival.





Boris Christoff — attraction of the George Bishop Lane Artists Series, which presents an outstanding group of programs each year.

The Boulder, symbol of the tradition of the University of Vermont.



THE CONTENTS

EDUCATION AT VERMONT	1
STUDENT LIFE	11
THE ADMISSION OF STUDENTS	20
STUDENT EXPENSES	24
GENERAL INFORMATION	28
THE COLLEGE OF AGRICULTURE	33
THE COLLEGE OF ARTS AND SCIENCES	46
THE SCHOOL OF DENTAL HYGIENE	52
THE COLLEGE OF EDUCATION AND NURSING	54
THE COLLEGE OF TECHNOLOGY	62
THE GRADUATE COLLEGE	71
THE COLLEGE OF MEDICINE	79
THE UNIVERSITY EXTENSION	82
COURSES OF INSTRUCTION	84
PERSONNEL	162
THE ALUMNI COUNCIL	182
ENROLLMENT STATISTICS	185
DEGREES AND PRIZES	188
LOAN FUNDS, SCHOLARSHIPS, AND PRIZES	197
GENERAL INDEX	205
ACADEMIC CALENDAR	208

U V M*

§ The University is located at Burlington, Vermont, overlooking an attractive tree-shaded city situated on the shores of Lake Champlain.

§ Burlington, the largest city in the State, with a population of 35,000, is 95 miles from Montreal, 230 miles from Boston, and 300 miles from New York City. The city enjoys daily plane service to these urban points in addition to regular railroad and bus service.

§ Chartered in 1791, the University is the twentieth oldest institution of higher learning in the United States authorized to grant degrees and the second institution founded by state legislative action to offer instruction at the university level.

§ Within the nine divisions of the University, instruction is offered in more than fifty programs leading to twenty-five different degrees.

§ The University is accredited by the following associations:

The New England Association of Colleges and Secondary Schools

The National Council for Accreditation of Teacher Education

The American Medical Association

The American Dental Association

National League for Nursing

The Engineers Council for Professional Development

The American Chemical Society

§ Currently enrolled are 3,164 students, of whom 1,657 are residents of Vermont; the remainder represent 26 states and 5 foreign countries.

* Although its legal title is the University of Vermont and State Agricultural College, the University is known to its students, alumni, and most of its friends as UVM. This popular abbreviation is derived from the Latin *Universitas Viridis Montis*—the University of the Green Mountain.

Education at Vermont

The motto of the University of Vermont, "For studies and other worthwhile pursuits (Studiis et rebus honestis)," selected before the University's first graduation in 1804, reflects the spirit of the University throughout its century and a half of educational service to Vermont and the nation. The university would have been out of step with the state whose name it bears had it not served as a training ground for men and women who were to become leaders in many parts of a constantly expanding America.

From the granting of a charter by the Vermont General Assembly in 1791, the university's development has been closely identified with that of the state. Immediately the Assembly set aside about 29,000 acres throughout the state for the support of the university; it provided that the governor and speaker of the house should be ex-officio members of the university's corporation; and it required that the by-laws of the university should give no preference to any religious sect or denomination.

Thus the University of Vermont took its place among the handful of colleges founded in this country in the seventeenth and eighteenth centuries for the higher education of young colonials and Americans of the first post-revolutionary generation. The University was the fifth college to be chartered in New England, the third to be chartered by a state after the formation of the United States for the higher education of all its youth, and the second institution of this type to confer the bachelor's degree.

After a half century of life guided by a self-perpetuating corporation, made possible by much private as well as public support, UVM took another step in the direction of public education when the State of Vermont chartered the Vermont Agricultural College in 1864. This college was established under the provisions of the Land-Grant Act of 1862, which has been sponsored by Hon. Justin S. Morrill, member of Congress from Vermont, to make possible higher education for "sons of farmers and those in the mechanic arts," and to provide education in agriculture and the mechanic arts as well as the so-called liberal and scientific courses. In 1865 the new agricultural college was merged with the university, to form the University of Vermont and State Agricultural College. Under later federal laws the services of the university were expanded by the addition of the Agricultural Experiment Station and the

Agricultural Extension Service. In 1955 the Vermont legislature formally recognized the entire University as an instrumentality of the State and thus reestablished it as The University of Vermont.

Colleges and Curricula

The University now consists of six colleges, a school of dental hygiene, a summer session, and a division of adult education.

In common with the practice at most of the early universities, the original curriculum was based on languages, rhetoric, mathematics, theology, and moral philosophy. Today, the College of Arts and Sciences, often considered the direct descendant of the original University, provides a general four-year curriculum leading to the degree of Bachelor of Arts, with opportunity for concentration in one or more of the following studies: botany, chemistry, economics, English, French, geology, German, Greek, history, Latin, mathematics, music, philosophy, physics, political science, psychology, Spanish, speech, and zoology.

Students interested in continuing their studies beyond the Bachelor's degree may, by making a proper selection of courses, meet all requirements for admission to graduate schools, and to such professional schools and colleges as those of medicine, dentistry, law, theology, and social work. Those who have completed three years of premedical study at the University may qualify for the degree of Bachelor of Science after successfully completing one year of study in an approved college of medicine.

With the passage of the Morrill Act of 1862, the way was prepared for the establishment of studies in agriculture. Today the College of Agriculture and Home Economics offers four-year curricula in agriculture, agricultural engineering, and home economics. It also offers two-year programs in preforestry and preveterinary sciences which prepare students for admission to other institutions for professional training in these fields.

The curriculum in agriculture leading to the degree of Bachelor of Science in Agriculture provides options in general agriculture, agricultural economics, agricultural education, agronomy, animal and dairy production, botany, dairy manufacturing, horticulture, and poultry husbandry. The curriculum in agricultural engineering leads to the degree of Bachelor of Science in Agricultural Engineering.

The curriculum in home economics, leading to the degree of Bachelor of Science in Home Economics, provides options in the fields of food and nutrition, related arts, clothing and textiles, and home economics

education. The department also offers an option in general home economics for students who wish a liberal education in addition to instruction in those areas related to the home and family.

The University of Vermont was probably the first nonmilitary institution in America to offer instruction in engineering, and was certainly the first of the present land-grant colleges to give any instruction in this area, which was later incorporated into the Morrill Act. Engineering was taught in a separate department until 1911, when a College of Engineering was established. In 1946 the College of Technology was formed to include the curricula in civil, electrical, mechanical, and management engineering; professional chemistry; commerce and economics; and, later, medical technology.

Majors in the Department of Commerce and Economics may select from many options in which to specialize, including accounting, banking, finance and insurance, business administration, industrial management, and secretarial studies.

The education and preparation of teachers has always been a major objective of the University; although the techniques have varied over the years, the primary concern has been to graduate qualified teachers who have a broad background in academic subject matter and a modern professional training in the methods of teaching. The College of Education and Nursing, established in 1946, offers four-year curricula leading to the Bachelor of Science degree in the fields of elementary, junior high, secondary, business, and music education. This college also offers a four calendar-year curriculum leading to the degree of Bachelor of Science in Nursing.

Under a program established by the State in 1949, the University offers a two-year curriculum in the School of Dental Hygiene leading to a Certificate in Dental Hygiene. Recipients of this certificate are eligible to take all state board examinations for licensing as dental hygienists. Enrollment in this school is limited to women.

The College of Medicine is historically almost as old as the University itself. Medical lectures became part of the offerings in 1804 and degrees were granted in medicine in 1822. There were some interruptions in the operation of the medical courses in 1836, but since 1853 qualified physicians have been graduated annually to serve Vermont and neighboring states. Today, the College of Medicine offers a four-year graduate curriculum leading to the degree Doctor of Medicine and also provides facilities for a limited number of candidates for other graduate degrees in the Graduate College to take courses in its departments.

In 1952 the Graduate College was established. Graduate programs had been administered for many years prior to this date on a purely departmental basis. The Graduate College not only serves as coordinator of all studies beyond the Bachelor's degree (with the exception of the program leading to Doctor of Medicine), but offers graduate programs on the basis of fields of concentration. Since it is frequently appropriate for students in various fields of concentration to cross departmental lines, it is felt that such coordination makes for more effective use of the University's resources for advanced study and research.

Regional Cooperation

The University of Vermont is participating with her five sister Land-Grant Institutions of New England—the Universities of Connecticut, Maine, Massachusetts, New Hampshire, and Rhode Island—in a growing program of regional cooperation in higher education.

These universities are cooperating to increase educational opportunities for the residents of their six-state area. Under the program New England residents are given admissions preference and, in some cases, resident tuition privileges in specialized curricula ranging from anthropology to wildlife conservation. A special booklet on this subject is being prepared and will be available after April 1, 1958, from the UVM Admissions Office.

As enrollment pressures create new and compelling needs for new facilities and for additional teachers, regional cooperation holds out a promising partial solution to one phase of the problem, for it makes possible broader and more efficient use of existing facilities for specialized and often high-cost programs of study.

A Development Program for UVM

Many colleges and universities experienced significant enrollment increases following World War II. UVM was no exception. When pre-war enrollment of around 1,300 increased to more than 3,000, temporary facilities were "made to do," but the need for new facilities became pressing.

Under President Borgmann, the University embarked on a new Development Program in 1955. Goals included new women's residences, a classroom addition to UVM's oldest building—the historic Old Mill—and restoration of the main structure to modern usefulness, an addition to the Library, a new gymnasium-auditorium, and, for the College of Medi-

cine, a new building. That program, implemented by Alumni and friends, is now in progress. Three new women's residences house some 400 young women, with dining facilities for 600. The addition to the Old Mill is presently under construction, as is the first phase of a new \$7-\$8 million Medical Building.

As a theme for its Development Program, the University turned to a quotation from one of its distinguished alumni, John Dewey. The theme, "Tradition Looks Forward as Well as Backward," seems particularly fitting for a liberal institution with pride in its frontier beginnings.

Vermont's Campus

The University of Vermont is fortunate in having one of the most beautiful campuses in New England.

The campus and present buildings had their origin in 1800 when Burlington was a frontier town in the Vermont wilderness. The first president and his first four students felled trees from ground which is today the College Green. From their labors and from financial contributions made by the residents of Burlington, the first college building rose. When it was destroyed by fire, it was rebuilt—again through financial support of the people of Burlington—and that second building still stands today, the historic Old Mill for which General Lafayette laid the cornerstone in 1825. In 1883, John P. Howard of Burlington, donor of the Lafayette statue and the fountain, made extensive remodeling of the Old Mill possible. An addition is presently being built, implemented by UVM's Alumni. Business and professional men and women of Burlington have again contributed financially to this building, keeping alive a long and worthy tradition. From 1800, when the first building was given form, UVM has continued to grow, and its buildings have been described as "a history of college architecture covering a period of a century and a half."

The campus is divided into three general areas: the College Green, the East Campus adjacent to the Green, and the Redstone Campus for women, four blocks south of the Green. Centennial Field, a fine outdoor athletic plant, is just east of the University campus. In addition to its main campus, UVM has extensive acreage for teaching and research, including the University Farm, the Morgan Horse Farm in Weybridge, and areas in Jericho, Charlotte, Shelburne, and Underhill for research in botany, forestry, and horticulture. The Morgan Horse Farm in Weybridge is a showplace, and the maple research farm at Underhill is the annual scene of the Dean Hills Maple Sugar Party.

Founded in 1791 by legislative action, the University has had a unique development. Whereas many state universities receive their major support from state appropriations, UVM has only recently begun to receive substantial appropriations from the people of Vermont. These amount to about half of UVM's operating budget of approximately five million dollars. State funds make possible a reduction of UVM tuition for qualified residents of Vermont, and provide agricultural research and services through the College of Agriculture and Home Economics. In addition, a generous appropriation is made to research and teaching in the College of Medicine.

One result of UVM's situation is that many of its buildings have been made possible, as was the Old Mill, by gifts and bequests from Alumni and friends.

The Billings Library, for which an addition is planned, was one of several new structures to be dedicated in the late 1800's. A fine example of the work of Henry Hobson Richardson, the well-known American architect, the Library was the gift of Frederick Billings of Woodstock. It was built in 1885 at a cost of \$135,000. The Williams Science Hall—the first completely fire-proofed college building in this country—was added in 1896 to house the expanding departments of the several sciences. The gift of Dr. and Mrs. Edward H. Williams of Philadelphia, it was built and furnished at a cost of \$160,000. Converse Hall, an unusual design of Gothic architecture, was the gift of John H. Converse, UVM Class of 1861. Completed in 1895, it was built at a cost of \$125,000. Mr. Converse purchased the land on which Converse stands, erected the building, and turned the complete gift over to his alma mater. He also gave houses for two faculty members on the "south common." The present engineering building (a new one is a "dream" of the future) and the present gymnasium were built in the early 1900's. At the time the gym was dedicated in 1902, it was regarded as the finest indoor physical education plant in New England. It is now inadequate to UVM's needs, and a new gymnasium is high in UVM's development plans. Morrill Hall, named to honor Vermont's Senator Justin S. Morrill, father of the Land-Grant Act, was the first UVM building to be provided by an appropriation from the people of Vermont. It was erected in 1907 and houses administrative offices for the College of Agriculture and Home Economics.

The twentieth century has seen the construction of several buildings of Georgian architecture. The Ira Allen Chapel, with an imposing bell tower which has become a symbol of the University, was completed in

1927. It was the gift of James B. Wilbur, who also made a generous gift to provide scholarships for Vermont residents. Mr. Wilbur's bequest also provided \$100,000 toward the cost of the Fleming Museum. Named for Robert Hull Fleming, the Museum was made possible by a gift of \$150,000 from Miss Katherine Wolcott of Chicago, Mr. Fleming's niece, and by gifts of \$75,000 from other friends of the University. Completed in 1931, it houses an extensive collection, including the University's art collection and the Library of Vermontiana in the Wilbur Library. The Waterman Building, often designated as "the center of the campus," contains administrative offices, classrooms, laboratories, recreation facilities, the cafeteria, the University Store, and the Memorial Lounge. Built in 1941, it was the gift of Charles W. Waterman, UVM Class of 1885, and Anna R. Waterman. Its cost was \$1,250,000.

The campus for women at Redstone was originally a large estate. The mansion and the carriage house now serve as Redstone and Robinson Halls. The Mabel L. Southwick Memorial Building, another imposing Georgian structure, was completed in 1936 as a center for women's activities. The family of Miss Southwick, who was a UVM graduate in the Class of 1905, gave \$65,000 toward the cost of the building. A bequest from Miss Shirley Farr provided \$75,000, some \$60,000 in federal funds were available for the building, and a student subscription of \$4,200 was made toward the cost of the building and its furnishings. Slade Hall, built in 1929 near Robinson Hall, is of Colonial-type architecture. Mrs. William G. Slade made a gift to UVM of \$50,000 toward this building, in memory of her daughter, Harriet Slade Crombie. In 1947, Grace Goodhue Coolidge Hall, a residence for women, was built adjacent to Southwick. Grace Goodhue, UVM Class of 1902, was the wife of Calvin Coolidge, President of the United States. The three men's dormitories, Buckham, Chittenden and Wills Halls, and Coolidge Hall were the first University residence halls to be financed by a bond issue guaranteed by the State of Vermont. Through this guarantee, the University was able to gain a favorable rate of interest in its financing. Room rents paid by students living in these residences eventually will liquidate the bond issue.

Latest residences to be built on these same terms are the three new women's buildings just south of Coolidge. Mason, Simpson, and Hamilton Halls were completed in 1957 at a cost of \$1,800,000. Among the finest dormitories in New England, they are named, appropriately, to honor three distinguished UVM women. Mason and Hamilton Halls honor UVM's first two women graduates, Lida Mason Hodge and Ellen

Hamilton Woodruff, Class of 1872; they were also UVM's first Phi Beta Kappa women. Simpson Hall honors Dean Emeritus of Women Mary Jean Simpson, UVM Class of 1913.

In 1949, a group of modern buildings—financed by state appropriation—was erected on the East campus. These are the Hills Agricultural Science Building, named to honor UVM's outstanding Dean of the College of Agriculture, Joseph L. Hills; the Bertha M. Terrill Home Economics Building, also named for an outstanding UVM faculty member; and the Dairy Science Building.

Other buildings of interest include Grassmount, a gracious Georgian mansion which was the home of a former Governor of Vermont and which now houses University women; Pomeroy Building, erected in 1829 for the medical department and now used to house the growing department of speech; and the Wasson Infirmary, believed to have been an underground railway stop for escaping Negro slaves at the time of the Civil War. Purchased for the University in 1944 by a group of Alumni, it was named for UVM's first dean of women, Pearl Randall Wasson.

The University Library

The University Library, including the Billings Library, the Wilbur Library, and the Medical Library, contains more than two hundred thousand volumes, making it the largest library in Vermont. Each year by purchase and by gift the collections are enlarged by more than four thousand volumes. Fourteen hundred periodical titles are regularly received. An experienced reference, public, and technical staff is required to make the material available for the faculty, students, and extension needs of the University.

Funds for the support of the library are derived mainly from the University and partly from the income from endowments designating the library as beneficiary. A large group of friends of the library, called the Library Fellows, interest themselves in the library and its collections and contribute annually to its support.

The Billings Library, designed by Henry Hobson Richardson and considered one of his outstanding architectural achievements, houses the main library. Here is to be found the working collection of library materials most useful to students and faculty. The library is a depository of U. S. Government publications. Newspapers, pamphlets, maps, state agricultural publications, and microfilms round out the collection. Special collections include the George P. Marsh Library, comprising about twelve thousand volumes notably in the humanities, the Howard-

Hawkins Civil War collection, and the Whittingham-Stevens collection of Chiswick imprints.

The James B. Wilbur Library, housed in the Fleming Museum, is rich in manuscript materials, early Vermont imprints, books relating to Vermont, and books by Vermont authors. The Wilbur Library has recently been given the personal collection of Dorothy Canfield Fisher, consisting of books, correspondence, and literary manuscripts.

The Medical Library, a working collection in its field, serves the needs of the College of Medicine as well as the faculties and advanced students in other departments of the University.

The Robert Hull Fleming Museum

The Museum, an integral part of the University's teaching program, provides a fourfold educational service to the University and the people of Vermont through its permanent collections covering the entire history of art, temporary exhibitions, the Fleming Museum Association, and Children's Classes in the Creative Arts. The Museum building was dedicated in 1931 and is named in honor of Robert Hull Fleming of the class of 1862.

The permanent collection is arranged to augment in so far as possible the University's teaching in varied fields. Particular galleries are devoted to ancient, medieval, and renaissance art; baroque and modern painting and sculpture; American art; primitive art; and the Orient. Two galleries are often devoted to temporary exhibitions which supplement the permanent collections by representing various aspects of painting, sculpture, graphic arts, architecture, photography and related material. Group shows such as the Vermont Camera Club Exhibition and the Northern Vermont Artists' Show are held annually.

The Fleming Museum Association, open to the public, is composed of Friends of the Museum whose support makes possible certain special exhibitions, guest lectures and films. Gallery talks related to exhibitions and the permanent collections are given from time to time and guide service for schools and club groups throughout the state is available. Children's classes offer instruction in painting and the dance to youngsters of the Community.

Besides providing classrooms and study area for courses in art and other departments the Museum also has a conference room, a lounge with a high-fidelity phonograph, and a kitchenette available for meetings and social functions. Also housed in the Museum are the Wilbur Library of Vermontiana, the University's seismograph station and geo-

logical collection, and a collection of several thousand photographs of painting and sculpture.

The George Bishop Lane Artists Series

This series, supported in part by a gift of \$300,000 from the late Mrs. Lane of Minneapolis in honor of her husband, George Bishop Lane of the Class of 1883, makes it possible for the University to sponsor for a modest admission fee a continuing program of the most noteworthy musical, theatrical, and artistic productions available.

Faculty, students, and community leaders plan and produce this series, which makes a vital contribution to the cultural life of the campus and the Burlington area. Recent offerings have included the London Philharmonia Orchestra on its first American tour, the American Ballet Theatre, virtuoso Zino Francescatti as soloist with the Vermont State Symphony Orchestra, the Canadian Players in *Saint Joan*, Maria Riva and a Broadway cast in *Tea and Sympathy*, The Vienna Choir Boys, The Juilliard String Quartet and Pearl Lang's Dance Company, the New York City Opera in *Die Fledermaus* and *La Bohème*, the Vienna Philharmonic Orchestra on its first American tour, Rudolf Serkin, the Societa Corelli, the National Ballet of Canada, basso Boris Christoff, the Detroit Symphony Orchestra, a Broadway cast in *No Time for Sergeants*, *The Rivalry* (starring Raymond Massey and Agnes Moorehead), Mantovani and His New Music, and the Budapest String Quartet.

Also, during the summer session, the Lane fund underwrites another series of concerts. Included on recent summer programs were the New York Woodwind Quintet, Richard Dyer-Bennet, the Trio Allegro, Paul Draper, *A Portrait of Broadway*, and Herman Silberman conducting fourteen members of the Boston Symphony Orchestra in a Pops Concert.

Student Life

The general welfare of students in non-academic matters is the responsibility of the Offices of the Dean of Women and the Dean of Men.

Housing

All undergraduate women, all men freshmen and transfer students who do not live locally with their parents or legal guardians, are required to live in dormitories and to have a meal contract with Saga Food Service.

Contracts for room and board are binding for the college year, unless cancelled for due cause with the sanction of the Offices of the Dean of Women or the Dean of Men. Room assignments for new students are made early in August and each student will receive notification of the date and hour of the opening of his or her dormitory. The rooms for freshmen women and men may not be occupied until the first day of the Preliminary Days program. Other students may occupy their rooms no earlier than twenty-four hours before the day of enrollment. Each student is expected to leave the dormitory no later than twenty-four hours after his or her last examination, at the close of the school year.

Facilities for doing personal laundry are provided in each dormitory; also a moderate amount of space for the storage of trunks, baggage and skis. Students provide their own window draperies, desk lamps and reading lamps. Bed linen, towels and blankets may be furnished by the student or rented from a commercial linen service, currently at \$26.00 for the academic year. The rental service provides weekly delivery of two sheets, a pillow case, and three towels to each student who has arranged for the service.

Women

There are seven dormitories on the Redstone Campus, three near the Main Campus, and seven sorority houses. The residents of the dormitories on the Redstone Campus: Coolidge, Hamilton, Mason, Redstone, Robinson, Simpson and Slade Halls, will have their meals in Simpson Dining Hall on a three meal per day annual contract. The residents of Grassmount, Englesby and Sanders, near the Main Campus, will have their meals on a three meal per day annual contract at the Waterman Cafeteria. Allen House, also near the Main Campus, is a cooperative house. Assignments to Allen House are granted on the basis of character, scholarship,

and comparative need. This group of women prepare and serve their own meals under supervision and so save nearly half the cost of their board bill.

Only junior and senior women are normally permitted to live in sorority houses. All other residences have a prorated number of residents from each of the four undergraduate classes.

Each women's residence is under the direction of a Head Resident, who is a member of the Dean of Women's Staff. The Women's Student Government Council appoints a student House President, who is the presiding officer of the House Committee. The members of this committee are elected by the students in each house.

Men

Chittenden, Buckham and Wills Halls are dormitories for freshmen and Converse Hall is a dormitory for upperclassmen. Each occupant of the residence hall is provided with a bed, pillow, chest of drawers, wardrobe, desk and chair. All students who are residents of the University dormitories must have board contracts and eat in Waterman Cafeteria.

Fourteen fraternity houses representing twelve national fraternities and two local fraternities provide housing, and in most cases, dining facilities for approximately 300 upperclass men. Freshmen are not permitted to live in fraternity houses.

Many upperclassmen live in private homes near the campus. Rental rates are about the same as those of the University.

Student Personnel Services

COUNSELING Confidential and objective help is available to students in the solution of personal, social, academic, and vocational problems which, if neglected, might hinder scholastic or professional success. Psychiatric counseling is available through the University Health Service. A faculty freshman advisory program and a men's residence hall counseling system are maintained.

PLACEMENT SERVICE Seniors and alumni may register for placement assistance with the Office of the Dean of Men, which prepares confidential credentials and brings available positions to the attention of qualified candidates. Campus interviews are arranged each year with employment representatives of business and industry. Books and pamphlets containing occupational information about the business and professional world,

state and federal civil service are available. Placement in the field of education is handled by the Office of the Dean of the College of Education and Nursing.

VETERANS EDUCATION Requests for information concerning *enrollment* as a veteran at the University should be addressed to the Office of the Dean of Men, which assists veterans with their educational benefit problems. Requests for information concerning educational *benefits* should be addressed to the applicant's local or regional Veterans Administration Office. Original applications for Veterans Administration educational benefits at the University of Vermont should be submitted directly to the Veterans Administration, Regional Office, White River Junction, Vermont. All veterans who are attending the University for the first time should be sure to contact the Office of the Dean of Men for information.

PART-TIME EMPLOYMENT An employment service is maintained to assist students in securing part-time work. Opportunities are available in homes and business establishments in Burlington. Students are advised to seek employment only in instances of definite financial need and provided they have reason to believe they can carry successfully a normal college program at the same time. Women students must secure permission to work from the Office of the Dean of Women.

READING CENTER A reading center provides help for students who have reading and study problems. A thorough diagnosis of the problem is made through standardized and informal tests. If the diagnosis reveals a specific need, the student is given individual help. For those students who need only to speed up their reading, reading rate controllers are available. Group instruction in reading may be offered when there are sufficient numbers of students needing the same type of remedial instruction.

SPEECH CLINIC Services of the speech clinic, located in Pomeroy Hall, are free to students in the University who have problems of articulation, foreign dialect, stuttering, inadequate vocal control, cerebral palsy, or hearing loss.

Health Services

The University has complete facilities for maintaining the physical well-being of members of the student body. The Health Service, with its headquarters at the Wasson Memorial Infirmary, includes complete physical examinations on all incoming students, the examination of mem-

bers of athletic squads, care of injuries, and advice on all health and medical problems. It is staffed by an administrative director, a medical director, resident psychiatrists, and associate physicians who hold regular office hours in the infirmary and are on call for emergencies. An orthopedic surgeon holds a regular clinic for consultation at the infirmary. Registered nurses are on duty at all hours. A student may employ a private physician using the facilities of the infirmary if desired. Cases of serious illness are sent to one of the two modern, well-equipped hospitals which are adjacent to the campus. Parents are notified of the student's illness by letter or telephone, depending on the nature of the illness.

Every student who pays full tuition for the normal college year of nine months is entitled to a maximum of five days of free infirmary care and such routine medical care as is needed and as the infirmary and health service can render during the nine months' period. Students who require infirmary care for more than five days in the college year are charged at the rate of \$8.00 per day.

Every student at the University is required to participate in the physical education program for two years. Normally this work is taken in the freshman and sophomore years, but may be postponed on the advice and authorization of the medical director, or the student's own physician, who must forward statements to the medical director concerning disability.

Student Activities

The University officially recognizes the activities of a large number of organizations in caring for the social and recreational needs of students, developing their cultural and religious interests, providing them with valuable business and executive experience, and broadening their contact with the public, with their fellow students, and with the educational world. Because it is within this area that qualities of leadership may be developed, the University encourages participation consistent with its scholastic requirements. The Student Advisory Committee, composed of officers of instruction and administration, is concerned with the system of student organizations and activities, with University policy relative to student organizations, and, in general, with the relationships between the University and these organizations. The student organizations control their own affairs and handle their own finances within the framework of the University's regulations.

RELIGIOUS LIFE The University maintains no affiliation with any particular religious organization. There is, however, a rich program of

religious activities on the campus, sponsored by the various faith groups and denominations. The University Student Association has set up a student Religious Activities Committee to sponsor interfaith activities, including Religion-in-Life Week discussions, occasional panel discussions on special religious and social problems, and a service project. The several churches and synagogues in Burlington are delighted to welcome University students, and many of them schedule regular Sunday evening programs. Throughout the week regular Protestant, Catholic, and Jewish worship services are held in the Ira Allen Chapel under individual sponsorship.

UVM STUDENT ASSOCIATION All students enrolled in the undergraduate colleges and schools are charged a student activity fee and thus become members of the UVM Student Association, which aims to work for a maximum of cooperation among students, faculty members, and administrative personnel in the conduct of all campus activities. A council, consisting of elected officers and class representatives, holds weekly meetings during the year and conducts the regular business of the association. However, the student body may be convoked by the council or by any group of students to hold a referendum or to conduct extraordinary business. There are many opportunities for large numbers of students to participate in the work of the standing committees, such as the Election, Financial, Orientation, Pep, Religious Activities, and Social Committees.

The Student Court is the judicial agency of the UVM Student Association and consists of representatives of each of the undergraduate colleges and schools. It has exclusive jurisdiction in all cases concerning the interpretation of the constitution and bylaws of the association; it has original jurisdiction in certain cases involving violations of university regulations and violations of Student Association rules; and it has some appellate jurisdiction.

WOMEN'S STUDENT GOVERNMENT ASSOCIATION Every woman who enrolls as an undergraduate student at the University becomes a member of the Women's Student Government Association. W.S.G.A. Council, elected by the women students, works to educate students to become self-directing individuals, to respect the rights of others, and to develop into responsible citizens of the college community. Through the Honor System high ideals of personal integrity and social consciousness are fostered.

W.S.G.A.'s primary purpose is to promote the academic success and the social development of all, while at the same time respecting the personality and the worth of the individual.

HONORARY SOCIETIES The Boulder Society, a local senior honorary society for men, is recognized as an organization responsible for student leadership. Election to this society is counted one of the highest honors that a Vermont man may achieve. Other honorary class societies for men are Key and Serpent, a junior society, and Gold Key, a sophomore society.

Mortar Board is a national honorary society for senior women. Though membership in Mortar Board comes as a great honor for a Vermont woman in recognition of outstanding service, scholarship, and leadership, it is also a challenge for continued sound and honest scholarship, and for unselfish service in the best interests of the college campus. Other honorary class societies for women are Staff and Sandal and Sophomore Aides.

The Phi Beta Kappa Society established the Vermont Alpha Chapter at the University in 1848, and initiates are chosen primarily on the basis of high scholastic standing. The local chapter was the first in Phi Beta Kappa to initiate women into membership.

The Society of the Sigma Xi, established at the University in 1945, initiates those who have proved their ability to do research in one of the sciences and, if students, who have a high scholastic standing.

Other national honorary societies include Alpha Omega Alpha, medicine; Alpha Zeta, agriculture; Kappa Delta Pi, education; Nu Beta Pi, engineering; Omicron Nu, home economics; Tau Kappa Alpha, debating; Sigma Delta Psi, men's physical education; National Collegiate Players, dramatics; Commerce and Economics Honorary Society; and Alpha Lambda Delta, freshman women's scholastic. Ethan Allen Rifles and the Arnold Air Society are honorary societies for outstanding students in the Reserve Officers Training Corps.

ATHLETICS A well-rounded program of intramural sports enjoys voluntary participation by men in all classes. Competitions are arranged among fraternities, dormitories, independent groups, and individuals. A program of intercollegiate competition for men is maintained in football, skiing, baseball, basketball, track, cross-country, tennis, golf, and rifle marksmanship. The athletic policies of the University are under the direction of the Athletic Council, composed of members of the faculty, the student body, and alumni. Athletic relations are maintained with colleges and universities in New England and the eastern seaboard. The University is a member of the "Yankee Conference," which is composed of the land-grant colleges and universities in New England, of the National Collegiate Athletic Association, the New England Intercol-

legiate Athletic Association, and the Eastern College Athletic Conference.

The Women's Recreation Association endeavors to encourage leadership and to cooperate in establishing, promoting, and administering a program of recreational activities for all women students. It sponsors a large number of activities including archery, badminton, basketball, bowling, field hockey, folk dancing, square dancing, modern dancing, table tennis, riflery, skiing, skating, swimming, tennis, and volleyball. The Square Dance Club and the Modern Dance Club are co-recreational.

In addition, the Outing Club sponsors for both men and women students mountain climbing expeditions, ski trips, and other outdoor activities.

FRATERNITIES AND SORORITIES Chapters of Greek letter fraternities and sororities have long been recognized as part of the social and extra-curricular life on the UVM campus. These groups provide valuable experience for their members in the form of interfraternity athletic competition, interfraternity sings, dances, social work projects, house operation, and meal service. Fraternities and sororities are under the jurisdiction of the University Council, and policies regarding the establishment of new chapters and the operation of present groups on the campus are subject to its control. Fraternity activities are coordinated by the Interfraternity Council and sorority activities are coordinated by a Panhellenic Council. The following are active chapters of national and local fraternities: Acacia, Alpha Epsilon Pi, Alpha Tau Omega, Delta Psi, Kappa Sigma, Lambda Iota, Phi Delta Theta, Phi Sigma Delta, Sigma Alpha Epsilon, Sigma Nu, Sigma Phi, Sigma Phi Epsilon, Tau Epsilon Phi, and Theta Chi. Chapters of the following national and local sororities are recognized at UVM: Alpha Epsilon Phi, Alpha Chi Omega, Alpha Delta Pi, Delta Delta Delta, Gamma Phi Beta, Kappa Alpha Theta, Pi Beta Phi, and Sigma Gamma.

KAKE WALK The outstanding social event of the year is the Kake Walk week end in February. This unique celebration is UVM's gala occasion and many returning alumni attend annually. Festivities include a formal ball at which a king and queen are crowned, snow sculpture, and athletic events. For two nights, the fraternities compete with one another in original skits and in *Walkin' fo' de Kake*.

MUSICAL ACTIVITIES Opportunities for participation and appreciation are provided for those students with strong musical interests. The University Choir, the University Orchestra, and the University Band appear in public presentations many times during the year. Christmas and

Easter concerts and a spring operetta are regular events. The UVM Music Club and the Men's Chorus provide students with other opportunities for participation in musical activities.

FINE ARTS FESTIVAL A Fine Arts Festival is held each spring primarily to show student talents and work in the fine arts. Among the highlights of the Festival are exhibitions of painting, sculpture, and arts and crafts. Productions include an opera, a dance program, and student directed plays, as well as choral and orchestral concerts. One issue of the *Centaur*, devoted to student creative writing, is published during the Festival, and exhibitions, lectures and movies are scheduled at the Fleming Museum.

DRAMA, DEBATING, AND RADIO The University Players, an organization of students interested in theatre arts, offers opportunities for student participation. These include two or more full length plays, an annual opera or musical comedy, a faculty-student variety show, Readers Theatre productions, and a Drama Workshop for qualified student directors. Outstanding juniors and seniors are eligible for membership in National Collegiate Players, a national theatre honorary.

The Lawrence Debate Club provides opportunities for participation in all types of forensic activities—debate, discussion, oratory, after-dinner, and extemporaneous speaking. Members of the club appear before service clubs, farm organizations, high schools, and other groups throughout the state. The fifty members of the club participate in more than three hundred intercollegiate debates annually with the beginners getting as extensive an experience as the veterans. The club owns an automobile, which makes it possible to travel to the various discussion programs and to the outstanding tournaments in the East. Outstanding performers receive recognition by election to Tau Kappa Alpha, the national honorary forensic fraternity.

The Radio-Television Workshop operates the campus radio station WRUV and produces many radio and television programs emanating from the University. Open to all students, it provides opportunity for participation in broadcasting activities. The Workshop currently produces *Spotlight UVM*, a weekly documentary report of campus activities, plus a student interview service for ten stations in the State. It presents a daily newscast over one local station, operates another all day Sunday every other week, and assists in the production of the university television series, *Living and Learning*.

WRUV, a student owned and operated wired-wireless station, broadcasts to the campus daily. It has its own United Press teletype wire service and is financed mainly through the sale of advertising.

STUDENT PUBLICATIONS A college newspaper, literary magazine, and annual yearbook offer interested students the opportunity for journalistic, literary, and editorial expression. The newspaper, the *Vermont Cynic*, is published weekly by students. *Centaur*, the literary magazine, is published three to four times each year by students. The *Ariel*, the annual yearbook, is published by members of the senior class. A fourth student publication, the annual *Freshman Handbook* for all incoming students, is published by a committee of the Student Association.

CLASS ORGANIZATIONS The members of each freshman class form a class organization which retains its identity throughout the undergraduate years of its members and extends through subsequent years as long as there are living alumni of the class. Members of each undergraduate class elect officers each spring, except that officers elected at the end of the junior year serve through the senior year and to the end of the first reunion. Each senior class conducts the events of Senior Week.

LIBRARY FELLOWS This society of students, faculty members, alumni, and members of the public at large aids the libraries in carrying on various phases of their work by special contributions. Membership is open to all who are interested in books, knowledge, and the advancement of learning.

The Admission of Students

Admission to the freshman class is determined after careful consideration of the applicant's record of high school courses completed; his rank in his graduating class; the recommendation of the high school principal; a personal interview, if requested by the Director of Admissions and Records; and such tests as may be required.

As of September, 1959, the University will require that all applicants take the Scholastic Aptitude Test of the College Entrance Examination Board.

The information collected in connection with a student's application is also used by the student's advisor in guiding his educational program. Since education is a continuous process, the University hopes to receive all possible information from the high school for use in planning the college course best adapted to the individual. The December, January or February series taken in the senior year is preferred.

The University admission requirements are not rigid but only in exceptional cases will students be admitted who offer less than the subjects recommended. In addition certain supplemental subjects are recommended for admission to some curricula. Students offering less than the recommended subjects may be required to take courses at the University to make up this deficiency. This may result in these students attending Summer Session or taking longer than the normal four years to satisfy the requirements for the baccalaureate degree. Students offering all subjects recommended for admission are in a position to do better work than students offering fewer of the recommended subjects.

Application forms for admission will be sent upon request. Out-of-state applicants should apply by March 1 of the year in which admission is sought. Since action upon applications is taken in March, residents of Vermont also should apply by that date. Vermonters may apply as late as May 1 and receive full consideration for any curriculum. After this date, additional applications of in-state and out-of-state students will be accepted as curricula and dormitory capacities allow. Inquiries should be addressed to the Director of Admissions and Records, Room 104, Waterman Building, The University of Vermont, Burlington, Vermont.

COLLEGE OF AGRICULTURE AND HOME ECONOMICS It is suggested that applicants study the several curricula, programs, and options to obtain a knowledge of the courses they will take while in college. This should

be helpful in preparing for those courses which will be required in college.

The secondary school courses for admission to the College of Agriculture and Home Economics are listed below under the several curricula. Although these are not to be considered as rigid requirements, successful completion is strongly recommended. These courses have been listed in the order of their importance.

The Curriculum in Agriculture: English (4 years), elementary algebra, plane geometry, science (2 years), history and a third year of mathematics.

The Preveterinary Program: The same as above.

The Preforestry Program: The third year of mathematics should be intermediate algebra.

The Agricultural Engineering Curriculum: English (4 years), elementary algebra, plane geometry, intermediate algebra, trigonometry, physics, chemistry, history, and a foreign language (2 years of one language).

The Curriculum in Home Economics: English (4 years), elementary algebra, plane geometry, science (2 years), history, foreign language (2 years of one language), a third year of mathematics.

COLLEGE OF ARTS AND SCIENCES The College of Arts and Sciences expects candidates to have completed the following courses: English (4 years), ancient or modern foreign language (2 years), elementary algebra, plane geometry, history, and science (1 year each). Additional subjects should be chosen so far as possible in the fields of language, mathematics, and history. A second year of algebra is highly desirable, especially for those who intend to take premedical or predental work or to concentrate in the sciences.

COLLEGE OF EDUCATION AND NURSING The College of Education and Nursing recommends that candidates for admission complete the following courses in secondary school: English (4 years), foreign language (2 years), algebra (elementary), plane geometry, history, and science. Candidates should present additional subjects in the fields of language, mathematics, and social studies. Credit may be given for commercial subjects, home economics, shop courses, agriculture, music, and art, if the candidate has maintained a sufficiently high scholastic record.

Candidates will be admitted on the basis of promise for becoming efficient teachers or nurses. In addition to probability for scholastic success, such factors as health, character, and personality will be taken into account in determining aptitude for teaching and nursing.

COLLEGE OF TECHNOLOGY The College of Technology recommends that candidates for admission to the curricula in engineering and mathematics complete the following secondary school courses: English (4 years), algebra (elementary and intermediate), plane geometry, solid geometry, trigonometry, history, and science. In addition to the nine or nine and a half units listed above the candidate is advised to choose other units as far as possible in the fields of language, mathematics, history, and science.

Candidates for admission to the curricula in commerce and economics, in medical technology, and in chemistry should follow the recommendations for the College of Arts and Sciences. For the chemistry curriculum, solid geometry is desirable.

SCHOOL OF DENTAL HYGIENE Enrollment is limited to women between the ages of seventeen and thirty-five who are high school graduates. The subjects recommended for admission are the same as for the College of Arts and Sciences. High school subjects which are especially recommended include algebra, biology, physics, and chemistry. Attributes necessary for success are good health, emotional stability, interest in the work, and the ability to get along well with people. Candidates who plan to practice in Vermont or Massachusetts must be seventeen years of age before the first of June preceding their entrance.

SPECIAL STUDENTS Special students are those who are not candidates for a degree in one of the regular curricula, or who are carrying fewer than twelve credit hours. Subject to the usual entrance requirements of the University, persons who are qualified for regular admission may, on payment of specified fees, pursue certain studies in regular college classes as special students. This arrangement is intended to accommodate those whose previous study and attainments enable them to pursue with profit special courses of study in particular departments. Students who have been dismissed for low scholarship may not re-enter as special students.

Special students are registered and enrolled in the same manner as regular students, and are subject to all regulations of the University. Credit for courses completed may be subsequently counted toward a degree. Special students are not eligible to hold University scholarships.

College Entrance Examinations

The College Entrance Examination Board will administer a series of tests during 1958 on the following dates: May 17, August 13, December 6, and also in 1959 on January 10, February 14, March 14, May 16,

and August 12. Complete information may be obtained from the College Entrance Examination Board, P. O. Box 592, Princeton, New Jersey.

Admission to Advanced Standing

All applicants for admission who have attended another collegiate institution are required to file with the Director of Admissions and Records an official transcript of high school and college records. A confidential report from the college attended is also required.

A student who transfers to the University from another accredited college or university may be given provisional credit for all courses satisfactorily completed, provided that similar courses are counted toward graduation at The University of Vermont. Transfer credit is not allowed for work completed with grade "D" or its equivalent, unless a more advanced course in the same subject has been passed with a higher grade in the institution from which the student transfers.

The credit is provisional, pending satisfactory completion of a semester's work at the University. The provisional transfer credits are fully granted if the student is in good standing at the end of the first semester.

Preliminary Registration Program

The days immediately preceding the opening of class work are devoted to certain preliminary events designed to facilitate the adjustment of freshmen to conditions of life and study at college. The full schedule of events is given in a special circular, *Preliminary Days at U. V. M.*, which is sent to all prospective freshmen by the Office of Admissions and Records one month before the opening of college.

All new students are given scholastic aptitude tests at the opening of the college year. Freshmen also take several placement tests on the basis of which some students are placed in more advanced courses. The scores on all tests are used in advising students regarding the course of study to pursue and vocational plans. A personal data report, physical examination, and registration photograph are also included in the program.

Student Expenses

The student expenses outlined in the following paragraphs are the anticipated charges for the academic year 1958-59. *Changing costs, however, may require an adjustment of these charges.*

TUITION The tuition charges are in accordance with the following schedule. However, refundable deposits are required to cover loss or breakage in certain departments. Additional charges are made for individual lessons in music and for some expenses in the dental hygiene and nursing programs.

1. RESIDENTS OF VERMONT

For definition of a resident student, see *General Information*.

	Per Semester	Per Annum
College of Agriculture and Home Economics	\$112.50	\$225
Elementary and Junior High School Curricula	112.50	225
Other undergraduate colleges and divisions.....	172.50	345
College of Medicine	275.00	550
Graduate and special students	15.00	per credit hour

2. NON-RESIDENTS OF VERMONT

	Per Semester	Per Annum
All undergraduate colleges	\$417.50	\$ 835
College of Medicine	500.00	1,000
Graduate and Special Students	35.00	per credit hour

COLLEGE OF MEDICINE There are a limited number of State Scholarships of \$200.00 a year each available to Vermont residents. Students allowed to repeat a year are charged full tuition for that year.

An application fee of \$10.00 is charged each applicant for admission.

GRADUATE COLLEGE A tuition fee of \$25.00 per semester is charged each graduate student who has completed all course requirements but who is in residence for the purpose of completing his thesis.

EXCEPTIONAL ENROLLMENTS For an enrollment of fewer than twelve hours the charge is \$15.00 per semester hour for residents of Vermont; for non-residents, the charge is \$35.00 per hour.

Students who by reason of conditions over which they have no control require more than four years to complete the requirements for a degree shall be charged no more than the full tuition for four years.

TUITION FOR COURSES IN APPLIED MUSIC Private lessons are approximately one-half hour in length, fifteen being given in each semester. Students who enroll as regular full-time students in the music education curriculum, paying full tuition, are charged one half the regular rates for applied music for such courses as are required in the curriculum. All others pay the scheduled charges.

PIANO, ORGAN, VIOLIN AND SINGING

One lesson a week.....	\$35.00	per semester
Two lessons a week.....	60.00	per semester
Use of organ one hour a day.....	25.00	per semester

STUDENT ACTIVITY FEE All students who are enrolled in twelve semester hours or more in the College of Arts and Sciences, Technology, Agriculture and Home Economics, Education and Nursing, and the School of Dental Hygiene are charged a fee of \$7.50 per semester. This fee is assessed, allocated, and controlled by Student Association and covers the support of student organizations and activities, and includes subscriptions to the *Vermont Cynic* and the *Ariel*. First-year medical students who enter the College of Medicine after three years in the College of Arts and Sciences are charged this same fee, which includes membership in the Osler Society.

Graduate students, special students, unclassified students, and students in the College of Medicine may, by paying this fee, become entitled to the benefits listed above.

OSLER SOCIETY FEE All students in the College of Medicine are charged an Osler Club fee of \$3.50 per year.

LATE REGISTRATION FEE A late registration fee of six dollars is charged students who fail to complete enrollment at the appointed times. In unusual cases, exemption from this charge may be made by the deans.

CHANGE OF ENROLLMENT FEE A fee of one dollar is charged, except in the College of Medicine, for any change of enrollment requested by the student concerned. Deans may waive this fee in exceptional cases.

DEGREE FEE The fee for the Master's degree and the technical degrees of C.E., E.E., or M.E. is twenty-five dollars, payable during the semester prior to graduation.

DEPOSIT A deposit of thirty-five dollars is required of every undergraduate applicant after he has received notification of his acceptance as a student at the University. This deposit is held until he graduates or discontinues his course of study, at which time the deposit minus any indebtedness to the University will be returned to him. In the event that his application is cancelled prior to July 15, fifteen dollars of this amount is refunded.

BREAKAGE CHARGE A charge will be made, as recommended by the department or office involved, for excessive or unusual breakage or damage and for breakage or damage of expensive equipment.

ROOM CHARGE Rooms in college dormitories are rented for the entire year and the prices are uniform in all dormitories. Double rooms are \$115.00 per occupant per semester; single rooms rent for \$137.50. Nominal charges for the use of certain electrical appliances may be levied upon occupants of the dormitories. The University reserves the right to use dormitory rooms during the vacation periods. A pre-payment of \$50.00 toward room rent is required by July 15 from each woman student returning to UVM to hold a room for her in a residence hall for women.

BOARD All women students who live on Redstone campus are required to have meal contracts at Simpson Hall. Twenty meals are served each week, at a cost of \$220 per semester. All women living in Englesby, Sanders and Grassmount and all men in residence in university dormitories are required to have meal contracts at the Waterman Dining Hall. The charge for 1958-59 is \$205 per

semester. Other students, except those living in cooperative houses, may have their meals under a current plan at the Waterman Dining Hall or purchase single meals in the snack-bar cafeteria.

Estimated Expenses Per Year

The following expenses are based on regular tuition for undergraduate students. Those receiving scholarships should make appropriate deductions.

	<i>Resident</i>	<i>Non-Resident</i>
*Tuition in most divisions.....	\$ 345.00	\$ 835.00
Student Activity Fee.....	15.00	15.00
†Textbooks and Supplies	80.00	80.00
Room (Add \$45.00 for single room)	230.00	230.00
Board in dining halls.....	440.00	440.00
Average Yearly Total.....	\$1,110.00	\$1,600.00

* For exceptions see page 24.

† Students in the School of Dental Hygiene should add about \$75 each year for instruments and uniforms. Engineering students should add about \$50 for instruments.

Payment of Bills

The University does not send bills to students or parents prior to registration. All fees for the semester (one half of the above yearly total) are assigned at the time of registration and students are expected to present checks or cash at that time. Checks should be made payable to *The University of Vermont*. Enrollment is not complete until all charges have been paid or otherwise provided for by arrangements satisfactory to the Treasurer. The University assists the fraternities with the collection of certain house bills. The University reserves the right to withhold all information regarding the record of any student who is in arrears in the payment of fees or other charges including student loans.

TIME PAYMENT The University of Vermont offers a time payment plan to students or parents wherein, after arranging with the Treasurer's Office, the total charges for a semester may be divided into six equal monthly payments beginning with July 1st for the first semester and January 1st for the 2nd semester. By June 1st the total charges for the year are paid in full. There is a small service charge for this arrangement

Refunds

In the event of withdrawal from college, refunds are made as follows:

1. During the first week of any semester the full tuition is refunded. Thereafter 20% of the tuition is deducted for each week that has elapsed.
2. No refund is made of the student activity fee.
3. Refund of board is made on a pro rata basis.

Banking Facilities

An arrangement with the Howard National Bank and Trust Company of Burlington enables students to open and maintain regular checking accounts

through the University Cashier's Office. Applications for new accounts, deposits to individual accounts, and orders for checkbooks are accepted during office hours in the Cashier's Office. The bank's normal charge of 10c per check is made for this service. The Cashier's Office cashes personal checks for students in good standing who furnish satisfactory identification.

Student Aid

Student fees do not meet the full cost of an education at the University. The income from endowments, State and Federal appropriations and current gifts furnish the balance. Many worthy and deserving students are still unable to meet the financial charges and for them the University provides, so far as its resources permit, considerable aid in the form of scholarships, grants-in-aid, loans, prizes and employment. The extent of need and the type of financial assistance most desirable is determined by the Student Aid Committee. New students should request application forms for aid from the Director of Admissions or from the principal if they are attending a high school in Vermont.

SCHOLARSHIPS During the past year, a total of \$209,776.00 was awarded to students, including the teacher-training and medical scholarships. Of this amount, \$164,399.00 was provided by the University from scholarship endowments and in the form of prizes. Eighty-four per cent of the scholarships were awarded to residents of Vermont. There are, however, a number of scholarships available to nonresidents, including the Alumni Memorial Scholarships for men and the National Scholarships.

Following is a list of some of the scholarships and prizes available. A complete list of scholarships and loan funds will be found on pages 97-204.

Alumni Memorial Scholarship Fund. An annual gift from the Alumni Council provides certain scholarships for men only. Worthy students who are in need of funds and who meet the qualifications of scholarship, character, leadership, and indicated athletic promise are recommended to the Student Aid Committee by a special committee of the Alumni Council.

Honor. A scholarship of two hundred dollars, for the freshman year only, is awarded in each accredited Vermont high school to the highest standing boy and girl eligible for admission to the University.

Prize Contests. In order to encourage student activities in the high schools and preparatory schools in Vermont, the University conducts annual contests in writing and debating. Announcements of these contests are sent to all secondary schools in the State.

Elementary and Junior High School Education. A limited number of scholarships, varying in amount according to qualifications and need, are awarded annually by the State Board of Education to students in these two curricula.

Wilbur Fund. The income from the fund is available on a basis of need to students who are residents of Vermont and who have earned entrance or college records that indicate extraordinary scholastic ability.

LOAN FUNDS Loan funds are apportioned annually to needy and deserving students, permitting them to pay a part of the cost of college attendance at some future time. The notes are payable following graduation.

STUDENT EMPLOYMENT See *Student Personnel Services*.

General Information

Definition of "Resident Student"

The following rules of residence, adopted by the Board of Trustees on October 18, 1952, are used in determining a student's eligibility to benefit from the reduced tuition rate for residents of Vermont.

1. A student who is of age when he first enrolls in the University shall be deemed to be a Vermont resident if, and only if, he had his domicile in Vermont for a period of one year next preceding his first enrollment in the University, except as otherwise provided by these rules.
2. A student who is a minor when he first enrolls in the University shall be deemed to be a resident of Vermont, if, and only if, his parents had their domicile in Vermont for one year preceding his first enrollment at the University, except as otherwise provided in these rules.
3. A student who, at the time of his first enrollment at the University, has his domicile fixed by a special rule of law (as a student under guardianship, a married woman, etc.) shall be deemed to be a resident of the State of Vermont if, and only if, the governing rule of law made Vermont his residence for a period of at least one year preceding his first enrollment.
4. In all cases in which a nonresident student claims that he has become a resident of the State of Vermont by reason of the application of a special rule of law (resulting from the appointment of a guardian, marriage of a woman student, etc.), the circumstances claimed to have made the student a resident must have taken place at least one year prior to the next regular student enrollment. In all such cases, the new resident status of the student shall take effect at the time of the next regular enrollment.
5. Whenever a resident student shall lose his Vermont domicile (as in the case of a minor whose parents move from the State and excepting women who marry nonresidents), the student shall immediately be reclassified as a nonresident.
6. It shall be incumbent upon any student whose status changes from resident to nonresident, to inform the dean of his college, or the Registrar, promptly, of the facts relating to his residence.
7. The burden of proof shall, in all cases, rest upon the student claiming a residence of the State of Vermont.
8. The Board of Trustees may, whenever justice requires, make exceptions to these rules.

The Committee on Residence has been authorized by the Board of Trustees to consider exceptions as stated in rule 8 above. Appeals from the decision of the committee may be made to the Board of Trustees.

Application for change of residence classification should be made to the Director of Admissions and Records, who is chairman of the Committee on Residence.

Academic Discipline

The continuance of each student upon the rolls of the University, the receipt by him of academic credits, his graduation, and the conferring of any degree or the granting of any certificate are strictly subject to the disciplinary powers of the University, which is free to cancel his registration at any time on any grounds if it considers such action to be for the welfare of the institution. The disciplinary authority of the University is vested in the President in such cases as he considers proper, and, subject to the reserve powers of the President, in the several deans.

Reserve Officers' Training Corps

As a land-grant institution, the University provides military training in its curriculum as its contribution toward national defense. Senior division units of the Army ROTC and of the Air Force ROTC are maintained. Their mission is to produce junior officers with qualities and attributes essential to their progressive and continued development as officers in the Army or Air Force.

Each student is provided the opportunity to indicate his preference for Army or Air Force training, and, within quota limitations, is generally assigned to the service of his choice. Those who do not make a choice are arbitrarily assigned.

The Army ROTC curriculum is designed to develop the leadership potential of the individual. Instruction is given in subjects common to all branches of the Army, and qualified graduates of the four-year course are commissioned as lieutenants of armor, artillery, engineers, infantry, signal, quartermaster, ordnance or other branch depending upon aptitudes, the individual's choice, and the needs of the Army.

The Air Force is primarily interested in potential leaders, the majority of whom must be qualified for and desire training as flying officers, either as pilots or observers. While some students who are pursuing courses leading to degrees in engineering fields, and others not physically qualified for air crew training are admitted to the junior and senior years of AFROTC, the quota for such students is limited. The basic AFROTC course (the first two years) emphasizes air age citizenship for all who are interested or required to participate.

THE BASIC COURSE A two-year course is required of all physically qualified, undergraduate, male students except the following:

1. *Veterans.* Those who have served on active duty in the Armed Forces for six months may be excused from the freshman basic course; those with one year of active duty may be excused from the entire basic course.
2. *Former ROTC Students.* Those who have successfully completed three or more years of an accredited Junior ROTC program may be excused from the freshman basic course upon presentation of a military training certificate.
3. *Transfer Students.* A student who transfers to this institution and who would be an accredited junior or senior at his former college may be excused from the entire basic course provided no ROTC training was offered at the former institution, or was offered on a voluntary basis; or provided he has successfully completed it if it were a required course.
4. *Noncitizens.*

Uniforms, arms, and equipment are furnished the student by the military departments. The class meets at least three periods a week and carries two hours credit per semester. *These eight hours for the two years are in addition to the total number required for a degree in a specific curriculum.*

THE ADVANCED COURSE This is a two-year elective course open to juniors, and carries three hours credit per semester or twelve hours for the full four semesters. Students are selected by the department chairmen and the President. Ex-service personnel, with the approval of the dean of the college, may apply in the fall of their sophomore year for Advanced Air Force ROTC, and in the spring for Advanced Army ROTC. Each student receives a uniform allowance credit of \$100.00 and a daily subsistence allowance which during recent

years has averaged \$27.00 per month. The class meets at least five periods per week.

Attendance at a summer camp is mandatory. Duration of the Army ROTC summer camp is six weeks; that of the Air Force, which is announced annually, is usually four weeks. During such attendance the student is paid at the pay scale of an enlisted man in the seventh grade. Mileage at five cents per mile is paid to and from camp. Students attend camp between the junior and senior academic years, but deferment may be made, for cogent reason, when approved by the department.

On successful completion of the advanced course, ROTC students are normally commissioned as second lieutenants in the reserve of their respective services. Distinguished military students may receive regular commissions upon graduation.

Twelve semester hours of elective credit are granted for advanced military science.

University Responsibility

Many courses involve instruction in and the use of various types of power equipment, laboratory apparatus, and specialized facilities. The University takes every precaution to provide competent instruction and supervision of such courses. It is expected that students will cooperate by following instructions and exercising precaution. In case an accident does occur resulting in personal injury, the University can assume no responsibility except for medical care that is provided by the Student Health Service.

Student Health Insurance

Through an arrangement with the Vermont Accident Insurance Company students are able to procure a policy providing for payment up to \$500 for each accident and each illness. The cost for one year's coverage is \$23.00 for men and \$21.00 for women. Further details may be obtained from the Treasurer's Office.

Enrollment

Every student is required to register and enroll on the designated days. All charges for the ensuing semester must be paid, or otherwise provided for, before enrollment is completed. After enrollment, no changes of studies will be allowed except such as are authorized by the dean of the college in which the student is registered. After Saturday of the first full week of the semester, no enrollment or changes of studies will be permitted, except that a student may drop a course with his dean's permission during the first three weeks of a semester without incurring any academic penalty.

Auditing Courses

With the approval of his dean and the instructor concerned, a student who is regularly enrolled and carrying a normal program may "audit" a course. In such cases no entry is made on the student's permanent record; no credit is given

for the work; and no charge is made. Full tuition is charged those students who are not regularly enrolled in at least twelve credit hours.

Undergraduate Degree Requirements

Degrees are conferred on the recommendation of the several colleges, and specific requirements will be found in the sections devoted to the respective colleges.

In addition to the course requirements of the several curricula, students must also fulfill the general requirements in physical education, air or military science, and hygiene.

To be eligible for graduation, a student must have attained a grade average of 72 or above in the work required for graduation in his curriculum. Grades in courses accepted for transfer credit are excluded in computing this average.

To be eligible for a degree, a student must have completed eight semesters or the equivalent as a full-time student. Exceptions to this rule may be made in special cases by the University Council.

Every candidate for a degree is required to have taken 30 of the last 42 semester hours of credit in residence at the University, except that those who have completed three years of premedical study in the University are awarded their degrees after successful completion of one year of study in any approved college of medicine. Courses taken in the regular session or in summer session at the University are counted towards residence.

Honors

The Bachelor's degree may be conferred with honors, by vote of the Senate, in recognition of general high standing in scholarship. Three grades are distinguished and indicated by inscribing on the diploma the words *cum laude*, *magna cum laude*, or *summa cum laude*. In the College of Medicine, the five students who have attained the highest average of marks during the entire four years' course are graduated *cum laude*. The names of those who receive these honors and of those who win prizes are printed in the commencement program. **DEAN'S LIST** The deans of the undergraduate colleges publish at the beginning of each semester the names of those students who have attained an average of at least 85 in their college credit courses during the preceding semester.

Grades and Reports

Scholarship is graded on a percentage scale. Grades are reported and recorded numerically. The minimum passing grade in the undergraduate colleges is 60; any grade lower than 60 represents a failure and indicates that the course must be repeated if credit is to be obtained.

All students enrolled in the undergraduate colleges receive reports of scholarship from the respective deans' offices after the close of each semester. These reports are also sent by the Recorder to the parent or guardian of each freshman student and to the principal of the secondary school from which he was graduated. Reports of upperclass students are sent to parents only upon request. Special reports of low standing are sent by the deans' offices about the middle

of each semester, both to the students concerned and to the parents or guardians.

Each student, former student or graduate student may procure one photostatic transcript of his record without charge. For additional orders the charge is one dollar when one transcript is ordered. When more than one transcript is ordered at a time, the charge is one dollar for the first copy and fifty cents for each additional copy.

Use of English

Correct English usage is demanded by all departments in the University. Written work of any kind which is unsatisfactory in manuscript form, grammar, punctuation, spelling, or effectiveness of expression may be penalized, regardless of contents. Students whose written work falls below the standard of correct usage may be remanded to the English Department for additional instruction, even though the freshman course in English has been passed.

Before they may be admitted to the University, foreign students must offer evidence that they are capable of reading and writing English on the college level.

The College of Agriculture and Home Economics

The College of Agriculture and Home Economics performs four public functions: it teaches resident students; it investigates problems; it disseminates information; it renders related services. These four lines of work are carried out respectively by the resident instruction division; the research division, or Vermont Agricultural Experiment Station; the extension division, or Vermont Agricultural Extension Service; and the Related Services Division.

The resident instruction division offers professional curricula in agriculture, agricultural engineering, and home economics and, in addition, two-year programs in preforestry and preveterinary science. The curriculum in agriculture leading to the degree of Bachelor of Science in Agriculture provides a variety of options. The curriculum in agricultural engineering offered in cooperation with the College of Technology leads to the degree of Bachelor of Science in Agricultural Engineering. Young women may earn the degree of Bachelor of Science in Home Economics by selecting one of several options. The two-year preforestry and preveterinary programs prepare students for admission to other institutions for professional training in these fields.

Most curricula in the College of Agriculture and Home Economics leading to the Bachelor of Science degree require 130 semester hours of prescribed and elective courses, exclusive of those in basic military and air science, physical education, and hygiene. The Agricultural Engineering Curriculum requires 136-140 semester hours of prescribed and elective courses. Normally 15 to 18 credit hours of courses exclusive of the afore-mentioned courses constitute a semester program.

In each field, to provide a well-balanced and integrated educational program and to insure reasonable concentration, a sequence of courses is prescribed with allowance made for the election of additional courses. Faculty advisers counsel students in the selection of elective courses and other educational problems. The courses listed for each of the curricula are those prescribed for the years indicated.

As part of the preliminary registration program, a mathematics placement test is given. Freshman mathematics courses are normally assigned on the basis of the scores made in these tests.

A student may transfer from one curriculum, option or program in

the College to another, provided the course requirements established for the curriculum, option or program are satisfied. Arrangements may be made for transfer within the College through counsel with the student's faculty adviser.

The Curriculum in Agriculture

The curriculum in agriculture leading to the degree of Bachelor of Science in Agriculture provides the following options: general agriculture, agricultural economics, agricultural education, agronomy, animal and dairy production, botany, dairy manufacturing, horticulture, and poultry husbandry.

Past records have shown that farm practice is a valuable asset for graduates in agriculture. It is highly recommended that agricultural farm experience be secured by all students before graduation.

Freshman Year—A

OPTIONS in General Agriculture, Agricultural Economics, Agricultural Education

	1st SEMESTER	2nd SEMESTER
English Composition	3	3
Introductory Botany	—	4
Elementary Algebra	3	—
World Agriculture	—	3
General Dairying	3	—
General Soils	—	3
General Poultry	3	—
Public Speaking	3	—
Elective	0-3	2-5

GENERAL AGRICULTURE This option is designed for students wishing to return to farming, to become farm managers, to enter work allied to farming; for those seeking a general rather than a specialized knowledge in the field of agriculture; for those desiring to prepare for county extension work; and for those preparing to work in the general field of agriculture with commercial concerns such as feed, fertilizer or seed companies, meat packers, agricultural implement and equipment concerns, dairy products and supplies companies, and for organizational and publicity work for farm organizations. Through the proper selection of electives, a student may choose a field of concentration in agriculture, and at the same time select courses that contribute to a liberal education.

Students taking a major part of their work in forestry under this option may prepare for entrance to professional forestry schools granting the Master of Forestry degree. Students contemplating preparation for county extension work should, not later than their sophomore year, seek the advice of the state extension leaders.

Each student in the general agriculture option must complete a minimum of 21 credit hours of agricultural courses in addition to the courses listed. At least two advanced courses in one subject and one advanced course in a related subject recommended by the chairman of the department in which the major part of the work is done must be taken in the junior and senior years.

CURRICULUM IN AGRICULTURE

35

The Sophomore Year		1st SEMESTER	2nd SEMESTER	The Junior Year		1st SEMESTER	2nd SEMESTER
English		...	3	English		...	3
Intro. Chem. or Intro. Physics		4-3	4-3	*Extension Methods		...	2
Principles of Economics		3	3	Rural Sociology		3	...
General Horticulture		3	...	Woodland Management		3	3
General Farm Crops		3	...	Elective		9-12	7-10
Elective		2-6	5-9				
The Senior Year		1st SEMESTER	2nd SEMESTER				
Survey of Amer. History or Amer. Govt.		3	3				
*Extension Methods		...	2	* Either in junior or senior year.			
Farm Power, Mach. and Elec. or Farm Structures and Util. & Soil and Water Engr.		3	3				
Farm Management		3	3				
Elective		6-9	4-7				

AGRICULTURAL ECONOMICS Training in agricultural economics prepares students wholly or in part for appraising land; marketing activities; supervising agricultural loan departments in private banks; directing farmer cooperatives such as the production and farm loan associations affiliated with the Farm Credit Administration; public relations research and sales work for the manufacturers of agricultural tools or products; organizational and publicity work for farm organizations and cooperative associations; positions in state, county, and local government service; research work in farm management, farm credit, taxation, marketing, farm population and rural life trends; for operating numerous enterprises where a knowledge of economic principles is an essential supplement to knowledge of the technical requirements of the business. This course of study satisfies the entrance requirements for graduate schools, for applicants for research or teaching fellowships in agricultural economics.

The Sophomore Year		1st SEMESTER	2nd SEMESTER	The Junior Year		1st SEMESTER	2nd SEMESTER
Agricultural Cooperation		2	...	Rural Sociology		3	...
Agricultural Business		...	3	Woodland Management		3	3
English		3	3	Farm Credit		...	3
Intro. Chem. or Intro. Physics		4-3	4-3	Marketing Farm Products		...	3
Principles of Economics		3	3	*Extension Methods		...	2
General Farm Crops		3	...	Elective		9-12	4-9
Elective		0-4	2-6				
The Senior Year						1st SEMESTER	2nd SEMESTER
Farm Management						3	3
Public Problems of Agriculture						...	3
*Extension Methods						...	2
Elective						12-15	7-12

* Either in junior or senior year.

A minimum of two other courses in accounting, statistics, or economics and a minimum of four additional courses in the College of Agriculture and Home Economics are required of each student. Selection of these courses is to be made with the advice of the student faculty advisor.

AGRICULTURAL EDUCATION This option prepares students to teach vocational agriculture at the high school level and to teach young farmer classes and adult

farmer classes. Preparation for advising local chapters of the Future Farmers of America is also given. The students are prepared for advanced study in the field of agricultural education. Many of the agencies and commercial concerns which employ farm service personnel consider experience in teaching vocational agriculture as excellent preparation for work in their fields.

The Sophomore Year	1st SEMESTER	2nd SEMESTER	The Junior Year	1st SEMESTER	2nd SEMESTER
English	3	3	Rural Education	...	3
Intro. Chem. or Intro. Physics	4-3	4-3	Farm Management	3	3
Principles of Economics	3	3	Woodland Management	3	3
General Psychology	3	...	Feeds and Feeding	3	...
General Farm Crops	3	...	Milk Production	3	...
Elective	0-2	5-9	Farm Power Mach. & Elec.	3	...
			Farm Shop	...	3
			Elective	0-3	3-6
The Senior Year				1st SEMESTER	2nd SEMESTER
Farm Structures & Utilities & Soil and Water Engineering				...	3
Methods of Teaching Young and Adult Farmer Classes				3	...
Directed Practice Teaching in Vo. Agriculture				8	...
Marketing Farm Products				...	3
Methods of Teaching Vo. Agriculture				3	3
Elective				0	6-9

Freshman Year—B

OPTIONS in Agronomy, Animal and Dairy Production, Botany, Dairy Manufacturing, Horticulture, and Poultry Husbandry

	1st SEMESTER	2nd SEMESTER
English Composition	3	3
Freshman Math.	3-5	3-5
Intro. Chemistry or General Chemistry	4-5	4-5
Intro. Botany or Intro. Zoology	4	...
Public Speaking	...	3
Elective	0-4	0-5

AGRONOMY This option is designed to give students a fundamental background in the theory and practice of crop and soil science and to prepare them for graduate study in these fields. By proper selection of electives, students may specialize in either crops or soils. Upon completion of four years study, agronomy majors may enter federal, state or commercial employment in such areas as soil conservation, soil survey, soil analysis, fertilizers, field or forage crop production and management, seed production, weed control, and crop breeding, or engage in practical farming. Graduates are qualified to do research, teaching or extension work in the above or related fields.

The Sophomore Year	1st SEMESTER	2nd SEMESTER	The Junior Year	1st SEMESTER	2nd SEMESTER
English	3	3	General Physics	4	4
Organic Chemistry or Elem. Quant. Analysis	4-3	4-3	Forage and Pasture Crops	...	3
Principles of Economics	3	3	Soil Conservation	3	...
Intro. to Zoo. or Intro. Geology	4	...	Plant Physiology or Field Crops	5-3	...
General Soils	...	3	Bacteriology	...	3
Elective	0-5	0-6	Elective	5-6	5-8

The Senior Year	1st	2nd
	SEMESTER	
Field Crops or Plant Physiology	3-5	...
Farm Management	3	3
Soil Science and Management	...	4
Seminar	1	1
Elective	8-9	7-10

ANIMAL AND DAIRY PRODUCTION This option provides technical and practical instruction in the field of animal husbandry with emphasis on the selection, breeding and management of dairy cattle. It prepares students for the operation of dairy farms and livestock enterprises; for field work in federal and state extension services, breed associations, farm organizations and commercial concerns; for positions in industries related to the processing and sale of dairy products and meats or with feed companies, dairy equipment and supply agencies; for graduate study leading to college teaching and research.

The Sophomore Year	1st SEMESTER	2nd SEMESTER	The Junior Year	1st SEMESTER	2nd SEMESTER
English	3	3	General Physics	4	4
Organic Chem. (131-132 or 35)	4-5	4-0	Anatomy and Physiology	3	...
Principles of Economics	3	3	Animal Nutrition	...	2
General Dairying	3	...	Dairy Bacteriology	3	...
Livestock other than Dairy	...	2	Feeds and Feeding	3	...
General Farm Crops	3	...	General Soils	...	3
General Bacteriology	...	3	Diseases of Farm Animals	...	2
Elective	0	0-4	Advanced Judging	...	2
			Elective	2-5	2-5

The Senior Year	1st	2nd
	SEMESTER	
Marketing Farm Products	...	3
Farm Management	3	3
Market Milk	2	...
Genetics or Heredity	3	...
Animal Breeding	...	3
Dairy Cattle and Milk Production	3	...
Seminar	...	1
Elective	4-7	5-8

BOTANY Botany is that subdivision of biology which is the foundation of the various branches of plant sciences, whether theoretical or applied. Students from both the College of Agriculture and Arts and Sciences may select the botany option. The student receives general instruction in the physical and biological sciences while obtaining a liberal education. Such an undergraduate experience can be applied to many fields of future endeavor. A student takes beginning botany, physiology and morphology as prerequisite to four advanced courses. These courses are selected depending on the student's own interest in any one of the fields which constitute botany. In these courses he is introduced to the ideas, the technics and appropriate modern scientific apparatus. Students have a variety of choices open to them upon receiving the Bachelor's degree. Some go directly into agriculture, industry, government services, applied research, or biology teaching in the secondary schools. Others enter professional schools. Still others go on to graduate school to prepare themselves for more advanced positions.

The Sophomore Year	1st SEMESTER	2nd SEMESTER	The Junior Year	1st SEMESTER	2nd SEMESTER
English	3	3	General Physics	4	4
Intro. Botany or Intro. to Zoo.	4	...	Foreign Language	3	3
Organic Chem. or Elem.	...	...	Plant Physiology	5	...
Quant. Analysis	4-3	4-3	Morphology	3	3
Social Science	3	3	Elective	0-3	5-8
Elective	2-4	6-8			
The Senior Year				1st SEMESTER	2nd SEMESTER
Foreign Language				3	3
Elective				12-15	12-15

Note: Four semester courses in botany are required in addition to those prescribed.

DAIRY MANUFACTURING Technical and practical instruction in the processing of milk and milk products prepares students for supervisory positions in the many different fields of operation in the dairy industry and also for advanced study and research in these fields.

The Sophomore Year	1st SEMESTER	2nd SEMESTER	The Junior Year	1st SEMESTER	2nd SEMESTER
English	3	3	General Physics	4	4
Organic Chem. (35 or 131-132)	5-4	0-4	Dairy Plant Engr. or	...	3
Principles of Economics	3	3	Conc. Milk Products	...	3
General Dairying	3	...	Butter, Cheese and Casein	...	3
General Bacteriology	...	3	Principles of Accounting	3	3
Chem. & Testing of Dairy Prod.	...	3	Dairy Bacteriology	3	...
Milk and Milk Products	2	...	Elective	5-8	2-5
Elective	0-2	0-3			
The Senior Year				1st SEMESTER	2nd SEMESTER
Ice Cream				3	...
Concentrated Milk Products or Dairy Plant Engineering				...	3
Market Milk				2	...
Technical Control of Milk Processing				...	2
Marketing Farm Products				...	3
Dairy Cattle and Milk Production				3	...
Seminar				...	1
Elective				7-10	6-9

Note: Four additional courses are required in commerce and economics, chemistry or biology, with the advice of the department.

HORTICULTURE This option is designed to prepare students for opportunities in the vast field of horticulture with particular emphasis on fruits and vegetables. Positions available to graduates include those with private or commercial concerns producing, manufacturing and distributing horticultural products and supplies; fruit or vegetable farm management; agricultural extension and positions with the U. S. Department of Agriculture. Students who so desire may prepare for advanced study.

The Sophomore Year	1st SEMESTER	2nd SEMESTER	The Junior Year	1st SEMESTER	2nd SEMESTER
English	3	3	Social Science	3	3
Organic Chemistry or Elem.	...	...	General Physics	4	4
Quant. Analysis	5-4	5-4	Foreign Language	3-4	3-4
Intro. to Zoology	4	...	*Plant Physiology	5	...
Plant Propagation	...	2	Elective	0-3	5-8
General Horticulture	3	3			
Elective	0-4	2-6			

The Senior Year	1st SEMESTER	2nd SEMESTER
Foreign Language	3	3
Genetics	3	...
*Plant Breeding	...	3
Seminar	1	1
Elective	8-11	8-11

* Junior or senior year, alternate year course.

POULTRY HUSBANDRY The poultry husbandry option gives training for poultry farm or hatchery operation; for commercial fields, such as marketing of poultry products, the manufacturing, selling and services of feed and equipment, and other allied industries; for graduate work; and for positions in teaching, extension, and research.

The Sophomore Year	1st SEMESTER	2nd SEMESTER	The Junior Year	1st SEMESTER	2nd SEMESTER
English	3	3	Principles of Economics	3	3
Organic Chemistry or Elem.			Poultry Sanit. & Disease Control		
Quant. Analysis	5-4	5-4	or Incub. and Brooding	...	4
General Bacteriology	...	3	Poultry Feeding or Processing		
General Poultry Husbandry	3	...	& Pkging. Poultry Products	3-4	...
Incubation & Brooding or			Poultry Judging and Selection	...	2
Poultry Sanitation &			Forage & Pasture Crops	...	3
Disease Control	...	4	Farm Structures, Utilities and		
Elective	4-8	0-4	Soil & Water Engr.	...	3
			Elective	9-11	0-3

The Senior Year	1st SEMESTER	2nd SEMESTER
General Physics	4	4
Poultry Feeding or Processing & Packaging Poultry Products	4-3	...
Anatomy & Physiology	3	...
Farm Management	3	3
Poultry Seminar	1	1
Elective	0-4	7-10

The Agricultural Engineering Curriculum

The curriculum in Agricultural Engineering leads to the degree of Bachelor of Science in Agricultural Engineering. It provides fundamental training in engineering similar to that provided by the engineering curricula in the College of Technology. In addition, it provides specialized training in the several subdivisions of Agricultural Engineering. The curriculum, the teaching staff, and the course content are approved jointly by the College of Technology and the College of Agriculture and Home Economics.

The graduate is prepared for professional engineering work in soil and water control, agricultural machinery and equipment, agricultural structures, the application of electricity and refrigeration to agriculture, and rural water supply and sanitation. The program prepares the student for advanced study in agricultural engineering.

Employment opportunities exist in government agencies and schools; in manufacturing plants, utility companies, insurance companies and processing plants; in contracting, selling, farming, consulting, and many other types of work which demand college training in engineering or agriculture.

The specific courses required for graduation are given below. These courses provide 118 semester hours and the student must select additional courses to meet the full requirement of 136 semester hours. At least six semester hours in these selected courses must be in the fields of literature, sociology, religion, political science, psychology, history, philosophy, art, music or language.

Normally, a student who has a good record in high school mathematics, which includes two years of algebra, one year of geometry and a half year of trigonometry, and who qualifies in the placement test in mathematics given at the University during freshman preliminary days, may enroll in Mathematics 5 or 11 during the first semester and Math 12 during the second semester; these students may graduate in four years with 136 semester hours of credit. Students who do not qualify for Math 5 or 11 will enroll in Math 9 during their first semester and Math 10 in their second semester, but the graduation requirement is then 140 semester hours. Since graduation in four years requires the completion of sophomore mathematics, Math 21-22, by the end of the second year, students taking Math 9, 10 in their freshman year must take Math 12 in summer school between their freshman and sophomore years, or take more than four years to complete the curriculum.

The Freshman Year		1st SEMESTER	2nd SEMESTER	The Sophomore Year		1st SEMESTER	2nd SEMESTER
*Freshman Math., 11-12		5	5	Soph. Math., 21-22		3	3
Intro. Chemistry, 1-2		4	4	Gen. Physics, 21-22		5	5
Engin. Drawing (E.G. 1-2)		2	2	Farm Shop, 101		3	...
English Composition, 1-2		3	3	Statics (C.E. 24)		3	...
Engin. Problems (M.E. 3-4)		1	1	Surveying (C.E. 53)		4	...
				Dynamics (C.E. 130)		...	3
				General Soils (Agron. 2)		...	3
				Public Speaking (Speech 11)		...	3
The Junior Year		1st SEMESTER	2nd SEMESTER	The Senior Year		1st SEMESTER	2nd SEMESTER
Junior Seminar, 181-182		1	1	Princ. of Econ. (C.&E. 11-12)		3	3
Diff. Equations (Math. 211)		3	...	Farm Management (A.Econ. 201-202)		3	3
Mech. of Materials (C.E. 131)		3	...	Senior Seminar, 183-184		1	1
Thermodynamics (M.E. 113)		3	...	Farm Structures, 151 or			
Elec. Circuits & Mach. (E.E. 101)		4	...	Soil & Water Engr., 155		3	...
Soil & Water Engr., 155 or				Farm Utilities, 152 or			
Farm Structures, 151		3	...	Farm Power Mach., 158		...	3
Farm Power Mach., 158 or				Electricity in Agr., 156 or			
Farm Utilities, 152		...	3	Agr. Mach. & Equip., 154		...	3
Agr. Mach. & Equip., 154 or							
Elec. in Agr., 156		...	3				
Expository Writing (Engl. 16)		...	3				
Hydraulics (C.E. 162) or							
Fluid Mech. (M.E. 142)		...	3				

* See text above for variations.

The Preforestry Program

The freshman year courses in this program are English composition, elementary algebra, plane trigonometry, botany, geology, dendrology, elements of forestry, engineering drawing, and electives.

This program provides the first two years of study in a four-year forestry curriculum. The last two years of technical education must be taken at an institution that confers the degree of Bachelor of Science in Forestry. Special arrangement with the University of Maine permits students in good standing to transfer to that University after completion of the two-year program. They will receive full credit for all courses passed and they will pay the same tuition as resident students in Maine. Transfers may be made to other institutions under the usual conditions. Professional forestry trains men to manage large and small public woodlands for timber production and use; to manage wildlife areas; for technical and managerial work in the wood-using industries; for positions in the United States Forest Service, Wildlife Service, National Park Service, Soil Conservation Service, and other federal and state agencies; for research and teaching; and to function as private forestry consultants.

Forest Management or Wildlife Conservation

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
Introductory Botany, 1	...	4	Introductory Chemistry, 1-2	4	4
English Composition, 1-2	3	3	Introductory Physics, 1-2	3	3
Engineering Drawing (E.G. 1)	2	...	Plane Surveying (C.E. 53)	4	...
*Introductory Geology, 1	4	...	Introduction to Zoology, 1	...	4
Freshman Math., 1, 2	3	3	Public Speaking (Speech 11)	...	3
Dendrology (For. 3, 4)	1	3	Dendrology (For. 5)	2	...
Elements of Forestry, 2	...	3	Mensuration (For. 25)	2	...
Political Science	3	...	Forest Protection, 21	2	...
Elements of Woods Practice, 22	...	...	Utilization of Woodland	...	...
(Freshman Summer Camp)	...	2	Products, 26	...	3

* For the Wildlife Conservation Program, omit these courses and substitute Zoology 1 in the first year and include Gen. Bacteriology (Bot. 116) and Gen. Entomology (Zoo. 31) the second year.

The Preveterinary Program

This program offers preparation for entrance to colleges of veterinary medicine. Adjustments of individual programs may be made to meet the requirements of different colleges. Students completing the prescribed courses with good grades and suitable qualifications may expect consideration for admission to veterinary colleges. Some farm experience is a definite advantage. Opportunities are available for graduate veterinarians in general practice, the armed services, public health, teaching and research, and federal state and municipal disease control work.

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
English Composition, 1-2	3	3	Vertebrate Zoology, 41	4	...
Introductory Chemistry, 1-2	4	4	Introductory Physics, 1-2	3	3
Introduction to Zoology, 4	4	...	Organic Chemistry, 131-132	4	4
Public Speaking (Speech 11)	3	...	American Govt. or History	3	3
Prin. of Evolution (Zool. 2)	...	4	Introductory Botany, 1	...	4
Elem. College Algebra, 1	...	3	Elective	1-4	1-4
Elective	1-4	1-4			

The Curriculum in Home Economics

This curriculum has two purposes: first, to provide a liberal education including the areas of learning which are related to home and family; second, to provide several options which are organized to give a more specialized training and background for the interesting professions that are a part of home economics.

Every candidate for the degree of Bachelor of Science in Home Economics must present a total of 130 semester hours of credit, exclusive of courses required in physical education. All students are required to take 41 credit hours in non-home economics subjects and 42 credit hours of home economics subjects. The choice of additional credit hours required for graduation is dependent upon the chosen option of each student.

Required Core Courses

Non-Home Economics	Hours
English	12
Speech	3
Political Science or History	6
*Laboratory Science	8
Psychology	3
Economics	6
Sociology	3
Home Economics	Hours
Orientation, 1	1
Design, 21	3
Survey of Textiles, 83	3
Clothing Selection and Construction, 22	3
Family Relationships, 161	3
Child Development, 111	3
Basic Concepts of Food and Nutrition, 43	3
Survey of Food Preparation, 35	4
Meal Management, 137	3
Household Technology, 53-54	4
House Planning, 51	3
Family Economics, 103	3
Home Management Theory, 102	2
Home Management Residence, 152 or Home Management Problems, 203	3
Senior Seminar, 151	1

* Students choosing Food and Nutrition or Education options must take Chemistry.

BUSINESS AND LIBERAL OPTION To provide a general education in home economics and liberal arts. The business major provides more concentration in commerce and economics courses and is planned to prepare a student for business positions in home economics. The liberal major provides more concentration in liberal arts courses as well as general background in home economics.

A student in the liberal major may concentrate in Child Development and Family Life through the selection of electives. A student concentrating in this area will spend one semester in the junior year at the Merrill-Palmer School in Detroit, Michigan. The cost of this semester, including transportation, is comparable to the cost of one semester at the University of Vermont.

The Freshman Year		1st SEMESTER	2nd SEMESTER	The Sophomore Year		1st SEMESTER	2nd SEMESTER
English 1		3	3	Science, Laboratory		4	4
Political Science or History		3	3	Economics 11-12		3	3
Speech 1		3 or 3		Survey of Textiles, 83		3	...
Orientation, 1		1	...	Household Technology, 53-54		2	2
Clothing Selection and Construction, 22		...	3	House Planning, 51		3	...
Design, 21		3	...	Psychology 1		...	3
Basic Concepts of Food and Nutrition, 43			3 or 3	Home Economics electives		3	3
Survey of Food Preparation, 35			4 or 4	Elective		...	3
The Junior Year		1st SEMESTER	2nd SEMESTER	The Senior Year		1st SEMESTER	2nd SEMESTER
Business Major				Business Major			
Sociology 1		3	...	English		3	3
Communication		3	...	Communications		...	3
Commerce and Economics		...	3	Commerce and Economics		3	3
Meal Management, 137		3	...	Demonstration Techniques, 169		2	...
Family Economics, 103		3	...	Family Relationships, 161		3 or 3	
Home Management Theory, 102		...	2	Senior Seminar, 151		1	...
Child Development, 111		...	3	Home Management Residence, 153		...	3
Home Economics electives		3	3	Electives		3	3
Electives		3	6				
Liberal Major				Liberal Major			
Sociology 1		...	3	English		3	3
Meal Management, 137		3	...	Family Relationships, 161		...	3
Family Economics, 103		3	...	General Institutional Management, 139		2	...
Child Development, 111		3 or 3		Home Nursing, 7		1	...
Home Furnishing I, 130		...	3	Senior Seminar, 151		1	...
Home Management Theory, 102		...	2	Home Management Residence, 153		...	3
Arts or Science electives		6	6	Home Economics elective		...	3
				Arts or Science electives		6	3
				Electives		5-6	3

EDUCATION OPTION To provide a background which prepares students to teach home making at secondary and adult levels, or to become home demonstration or 4-H club agents. Students must have a 75 average in their home economics subjects to be eligible for student teaching during their senior year. Preparation for extension work may be fulfilled by appropriate selection and substitution of courses.*

The Freshman Year		1st SEMESTER	2nd SEMESTER	The Sophomore Year		1st SEMESTER	2nd SEMESTER
English 1-2		3	3	English		3	3
Political Science or History		3	3	Speech 1		...	3
Chemistry 1-2		4	4	Psychology 1		3	...
Orientation, 1		1	...	Economics 11-12		3	3
Clothing Selection and Construction, 22		...	3	Sociology 1		...	3
Design, 21		3	...	Household Technology, 53-54		2	2
Basic Concepts of Food and Nutrition, 43			3 or 3	Pattern Design and Advanced Construction, 73		3	...
Survey of Food Preparation, 35			4 or 4	House Planning, 51		3	...
				Elective		...	3

* Recommended for Extension and 4-H Club Work: Extension participation, Extension methods, American History since 1900, Local government, and Elements of Radio and Television Broadcasting.

CURRICULUM IN HOME ECONOMICS

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Education		3 or 3	Methods of Teaching, 165	3	...
Introduction to Home Economics			Student Teaching, 167	...	7†
Education, 115	2	...	Senior Seminar, 151	1	...
Advanced Food Preparation, 135	3	...	Home Nursing, Nursing 7	1	...
Meal Management, 137	...	3	Home Management Residence, 153	...	3‡
Survey of Textiles, 83	3	...	Family Relationships, 161	3	...
Home Furnishing I, 130	...	3	General Institutional Management, 139	2	...
Family Economics, 103	3	...	Demonstration Techniques, 169	2	...
Home Management Theory, 102	...	2	Teaching Adults, 216	...	2‡
Child Development, 111	3 or 3		Elective	4	3
Applied Normal Nutrition, 144	...	3			
Elective	...	3			

† First Half.

‡ Second Half.

FOOD AND NUTRITION OPTION To prepare students to be nutrition or food specialists. The selection of the dietetic major fulfills academic requirements for American Dietetic Association internship.

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
English 1-2	3	3	Speech 1	...	3
Political Science or History	3	3	Organic Chemistry 35	5	...
Chemistry 1-2	4	4	Zoology 1	4	...
Orientation, 1	1	...	Economics 11-12	3	3
Basic Concepts of Food and Nutrition, 43	3 or 3		Psychology 1	...	3
Survey of Food Preparation, 35	4 or 4		Household Technology, 53-54	2	2
Design, 21	3	...	House Planning, 51	3	...
Clothing Selection and Construction, 22	...	3	Elective	...	4

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Agricultural Biochemistry 171	5	...	Food and Nutrition Major		
Physiology, Zoology 52	...	3	English	3	3
Sociology 1	...	3	Bacteriology, Botany 116	...	3
Advanced Food Preparation, 135	3	...	Nutrition and Diet, 243	4	...
Meal Management, 137	...	3	Family Relationships, 161	3 or 3	
Quantity Food Production, 186	...	3	Senior Seminar, 151	1	...
Survey of Textiles, 83	3	...	Home Management Residence, 153	...	3
Family Economics, 103	3	...	Institutional Administration, 187	3	...
Home Management Theory, 102	...	2	Elective	3	4
Child Development, 111	3 or 3				
Elective	3 or 3				

Dietetic Major

English	3	3
Bacteriology, Botany 116	...	3
Nutrition and Diet, 243	4	...
Family Relationships, 161	3 or 3	
Senior Seminar, 151	1	...
Home Management Residence, 153	3	...
Institutional Administration, 187	3	...
Institutional Marketing and Accounting, 288	...	4
Diet Therapy, 244	...	3

RELATED ART, CLOTHING AND TEXTILES OPTION To provide the opportunity for concentrated study in fields of costume and textile designing, fashion illustration, merchandising, interior design, and textile testing.

The Freshman Year		1st SEMESTER	2nd SEMESTER	The Sophomore Year		1st SEMESTER	2nd SEMESTER
English 1-2		3	3	Science, Laboratory		4	4
History		3	3	Economics 11-12		3	3
Orientation, 1		1	...	Speech 1		...	3
Basic Concepts of Food and Nutrition, 43			3 or 3	Survey of Textiles, 83		3	...
Survey of Food Preparation, 35			4 or 4	Pattern Design and Advanced Construction, 73		...	3
Design, 21		3	...	Costume Design, 71		2	...
Clothing Selection and Construction, 22		...	3	House Planning, 51		3	...
Household Technology, 53-54		2	2	Elective		3	3
Elective		...	3				
The Junior Year		1st SEMESTER	2nd SEMESTER	The Senior Year		1st SEMESTER	2nd SEMESTER
Psychology 1		3	...	English		3	3
Sociology 1		...	3	Family Relationships, 161		3	...
Science		3	...	Senior Seminar, 151		1	...
Family Economics, 103		3	...	Advanced Textiles, 182		...	3
Child Development, 111		...	3	Home Management Residence, 153		3	...
*Tailoring, 123		3	...	*Costume Design and Draping, 221		3	...
Home Management Theory, 102		...	2	*Home Furnishing II, 230		...	3
History of Costume, 120		...	3	Electives		3	6
Home Furnishing I, 130		...	3				
Meal Management, 137		3	...				
Elective		3	3				

* Three elective hours may be substituted for one of the starred courses.

The College of Arts and Sciences

The College of Arts and Sciences aims to provide for young men and women the means and opportunity of fitting themselves intellectually, emotionally, and spiritually to play a responsible part in the world of thought and action.

It devotes itself to the inculcation of ideals and the cultivation of ideas. It seeks to encourage habits of clear, independent thinking and effective expression; to stimulate an appreciative understanding of the thought and achievement of man; to develop sound critical judgment and a spirit of tolerance; to arouse the intellectual curiosity which is the basis of continuing self-education.

Its fundamental purpose is to instill the courage and conviction to exemplify the enduring values of American democracy.

The Liberal Arts Curriculum

The curriculum in liberal arts, leading to the degree of Bachelor of Arts, is designed to assure adequate training in language, particularly in English, as the mother tongue and the chief tool of thought and expression, and in certain other subjects essential to an understanding of the various fields of human knowledge; and to provide for further study and mastery of a chosen field of concentration.

Every candidate for this degree must fulfill the requirements stated below, and present a total of 120 semester hours of credit. For those required to take military or air science and physical education the total of credit hours is increased by the number of hours required in those subjects.

Required of all Students

1. English. English Composition the first year, and the second year either English-American Literature or World Literature.
2. Foreign Language. One year course of at least intermediate grade in French, German, Greek, Latin, or Spanish, to be completed as early as possible in the college career.
3. Science. One laboratory course, normally the first year, to be chosen from botany, chemistry, geology, physics and zoology. A semester of Botany may be combined with a semester of Zoology to meet this requirement.
4. Physical Education and Military Science. Two years of physical education for men and women, two years of military science for men, a year course in hygiene for women.
5. Field of Concentration. Each student, in consultation with his adviser, must choose a field of concentration during his sophomore year. The specific courses making up the field, as well as the student's whole program for the last two years, are chosen in consultation with the Chairman of the Department in which the major part of the work is to be taken and must have his approval.

There are certain restrictions to be met. (A) The field must be a well integrated whole, adapted to the student's special interests. (B) It must include a minimum of twelve semester courses totalling not less than 36 semester hours, at least half, but not all, to be taken in one subject. (C) It must contain at least four semester courses of advanced level in one subject and two related semester courses of advanced level in another subject. (D) Each student must take at least one course, normally an advanced course, in his field of concentration in each semester of his junior and senior years.

Additional Distribution Requirements for Students Concentrating in Fields in the Following Divisions:

1. *Language and Literature, or Music; History (American, Ancient, Medieval, or Modern European) normally the first year; a second foreign language reaching the intermediate level†; a second year course in the social science division.

2. Social Science: History (American, Ancient, Medieval, or Modern European) normally the first year; during the first two years a total of two year courses in different subjects, chosen from the following: Economics, Philosophy, Political Science, Psychology, and Sociology.

3. Science and Mathematics: Introductory Chemistry (except for students concentrating in Mathematics), mathematics and physics as indicated below under requirements for special departments, and a total of at least four semester courses (twelve semester hours) in departments other than the sciences and mathematics.

* It is strongly recommended by the respective departments that students who wish to choose modern foreign language as their field of concentration complete Intermediate Latin in college unless they presented four years of Latin for entrance. The English Department considers courses in Latin to be a distinct aid to students concentrating in English.

† Students concentrating in English substitute an advanced literature course in foreign language for the second foreign language.

Additional Specific Requirements for Concentration in Special Departments

BOTANY Mathematics 1, 2 or 7, 8 or 11, 12; Physics 5-6; Zoology 1; Botany 1, 103, 113-114, and four additional semester courses. The advanced related course (six semester hours or more) is normally in one of the other sciences.

CHEMISTRY Mathematics 21-22 (Calculus); Physics 21-22; Chemistry 11-12, 21-22, 131-132, 141-142, 181-182, and 183-184. No advanced related course is required. Those who wish to qualify for accreditation by the American Chemical Society must also complete 237, six additional hours in advanced courses, and also German 11-12. Physics 171, 172 is recommended. *Only those who qualify as above will be recommended by the department as chemists.*

ECONOMICS Courses in economics totalling at least twenty-four semester hours, including twelve or more of advanced grade. The related courses are chosen in consultation with the departmental adviser on the basis of the student's individual needs and plans. See pages 49-50 for Economics courses for which credit is granted in an Arts and Science program.

ENGLISH Satisfactory completion of English-American Literature and six semester courses of advanced grade. The advanced related course may be in language, music, or any course approved by the department; it is expected that this advanced related course will be taken in the senior year. An advanced literature course in a foreign language is required, but an intermediate course in a second foreign language is not required.

GEOLOGY Mathematics 11-12; Physics 5-6; Introductory Chemistry; eight semester courses in geology, of which four are of advanced grade; one advanced related course (six semester hours or more) in one of the other sciences or mathematics. A course in some other subject may be approved to meet particular needs.

GERMAN Satisfactory completion of eight semester courses in German, including at least four of advanced grade, and at least one advanced related year course, normally in a language.

GREEK Satisfactory completion of twenty-four semester hours, twelve of which must be in courses numbered above 100, and one advanced related course (at least six semester hours).

HISTORY Satisfactory completion of twenty-four hours in history and twelve semester hours in a related subject in another department. At least twelve of the hours in history and six in a related subject must be in courses numbered above 100.

LATIN Satisfactory completion of eighteen hours in courses numbered above 100, and one advanced related course (at least six semester hours). Courses in Greek are strongly recommended, particularly to those who contemplate graduate work in classics.

MATHEMATICS Physics 5-6 or 21-22; Mathematics 21-22 and two advanced courses. The advanced related course is chosen in consultation with the department.

MUSIC Satisfactory completion of 1, 2, 7-8, and two of the following: 201-202; 205-206; 207-208; 209-210; 221, 222. It is recommended that the related course be an advanced course in French or German.

PHILOSOPHY Satisfactory completion of Philosophy 1, 2, 4, 107, 108, 214, and either 202 or 206, and an advanced related course or courses, chosen in consultation with the departmental adviser to fit the needs of the individual students.

PHYSICS Mathematics 211 and 212; Physics 21-22 and three advanced courses. German and Vector Analysis are strongly recommended.

POLITICAL SCIENCE Satisfactory completion of four semesters of advanced courses in political science and an advanced course (six or more semester hours) ordinarily in one of the other social sciences.

PSYCHOLOGY Satisfactory completion of at least twelve semester courses, eight in psychology including 1, 109-110, 223, and 281-282; the other four to be chosen from mathematics, philosophy, physics, sociology, or zoology. The four courses for the related field are chosen in consultation with the department.

ROMANCE LANGUAGE Satisfactory completion of six semester courses of advanced grade, and at least one advanced course (six semester hours or more), ordinarily in another foreign language or English.

SOCIOLOGY Satisfactory completion of twenty-four semester hours in sociology and twelve semester hours in a related subject. At least twelve of the hours in sociology and six in the related subject must be in courses numbered above 100.

SPEECH Students concentrating in speech meet the "additional distribution requirements" either of the languages or of the social sciences, the former if the advanced related course is in the language or music, the latter if it is in the social sciences. In speech they must complete satisfactorily nine semester courses in speech, as indicated below, and an advanced related course or courses (six semester hours or more) chosen in consultation with the departmental adviser. The courses in speech must include 1, 11, a one-semester course in three of the following five areas: public speaking (other than 11), oral interpretation, drama, radio, and speech correction, and four semesters of advanced courses.

ZOOLOGY Mathematics 1, 2 or 7, 8, or 11-12; Physics 5-6; Botany 1; Zoology 1, 41, 150, 281, 282, and five additional semester courses, including at least eight semester hours in advanced courses. The advanced related courses (six semester hours or more) may be in one of the other sciences or psychology. A student concentrating in zoology must attain an over-all average of 72 or above in the courses in mathematics and science required for concentration in the department.

Courses Offered in Other Colleges Acceptable for Credit Toward the B.A. Degree:

Botany: all courses	Econ. 242: Collective Bargaining
Chem.: all courses except Outline of Organic Chemistry	Econ. 286: Economic Analysis
Econ. 1-2: World Economic Geography	Econ. 292: International Economic Problems and Policies
Econ. 11-12: Principles of Economics	Econ. 293-294: Money, Income and Prices
Econ. 15-16: Economic History of the United States	Econ. 295: History of Economic Thought
Econ. 105: International Trade and Finance	Econ. 296: Modern Economic Thought
Econ. 141: Labor Economics	Econ. 297, 298: Seminar
Econ. 181: Transportation	Family Living 180: Family Relationships
Econ. 182: Public Utilities	Forestry 208: Biological Statistics
Econ. 183: Economic Life and Government Control	Mathematics: all courses
Econ. 187-188: Economic Statistics	Music Education 151-152: Secondary School Methods
Econ. 201-202: Money and Banking	Phys. Ed. 50: Dance Technique and Analysis
Econ. 203: Economics of Taxation	Sec. Educ. 102: Principles of Education
Econ. 204: State and Local Finance	Sec. Educ. 202: Philosophy of Education

THE RESTRICTED LIST A given student may elect not more than twelve semester hours of credit in courses on this list, provided he has completed his basic distribution requirements, and provided that these courses are not to be counted as part of the minimum requirement for concentration:

Agr. Biochem. 171: Elementary Biochemistry	Sec. Educ. 180: Secondary Methods and Procedures
Agr. Econ. 103: Rural Sociology	Sec. Educ. 181: Student Teaching in Secondary Schools
Chem. 35: Outline of Organic Chemistry	Sec. Educ. 225: Teaching Social Studies in Secondary Schools
C. & T. 22: Clothing Selection	Sec. Educ. 227: Teaching Science in Secondary Schools
Econ. 13-14: Principles of Accounting	Sec. Educ. 232: School Administration
Econ. 109-110: Business Law	Sec. Educ. 250: Guidance
Econ. 206: Securities Markets	Sec. Educ. 252: Teaching Latin in Secondary Schools
Econ. 208: Investments	Sec. Educ. 257: Teaching Mathematics
Educ. 145, 146: Learning and the Adolescent	Sec. Educ. 258: Teaching Modern Languages
Family Living 111: Child Development	
Food and Nutrition 43: Basic Concepts	
Home Management 102: Home Management	
Graphics 1, 2: Engineering Drawing	
Related Art 21: Design	

Special Honors

The honors program at both the junior and senior levels is designed for the superior student with unusual initiative and intellectual curiosity, and provides an opportunity to pursue a special project without the restrictions of classroom routine. Such a student enters a program of reading, research, or creation under the direction of the department of his choice. A student may take honors in either or both years.

A student in the College of Arts and Sciences who, at the end of his junior year, has an average of 85 or above for the work of the sophomore and junior years may become an applicant for special honors in a particular subject. His program for the senior year must be approved not later than the end of the junior year by the department in which honors are sought and by the Committee on Honors, and he must present a satisfactory written report and pass an oral examination on the field of special study.

A program called junior honors, which may be considered introductory to but distinct from special honors, is available to juniors who have a sophomore average of 85 or above and who have the permission of their department chairmen. The program for each junior honors candidate will be determined by the department concerned.

Preprofessional Preparation

Students who plan to enter professional colleges requiring previous collegiate preparation should register in the College of Arts and Sciences. The variety of courses offered and the freedom of election in that college is such that all the requirements for any professional school may be met. Many students will desire so to direct their four-year undergraduate course as to provide, in addition to a sound general education, appropriate preprofessional training for later work in the medical sciences, law, or theology.

MEDICINE AND DENTISTRY The prevailing requirements for admission to an accredited medical college usually include not less than three years of undergraduate work, during which courses in biology, chemistry, English and physics must be completed. Any student who wishes to enter medical college should by the beginning of his sophomore year consult the catalogue of the college of his

choice and arrange to include in his program courses required by that particular school.

Each student, in consultation with his adviser, plans a four-year program of courses which will fulfill the requirements for the Bachelor of Arts degree. Those who wish to meet the minimum requirements for admission to medical college may follow the first three years of the program below. By successfully completing these three years and one year in an accredited medical college, they will qualify, on application, as candidates for a Bachelor of Science degree.

In the following outline, courses listed are normally taken in the year indicated. The program may be modified both for the needs of the individual student and to allow for concentration in a particular field. A student must have completed a total of 90 semester hours by the end of the third year to be considered for admission to a medical college.

The First Year		1st SEMESTER	2nd SEMESTER	The Second Year		1st SEMESTER	2nd SEMESTER
English Composition, 1-2		3	3	English-Amer., 27, 28; or			
Introductory Chemistry, 1-2 or 11-12		4	4	World Lit., 25, 26		3	3
Mathematics 1, 2 or 7, 8 or 11-12		3	3	*Intermediate For. Lang.		3	3
Zoology		4	4	Quantitative Chemistry, 21-22		3	3
Foreign Language (Elementary or Intermediate)		3-4	3-4	Physics, 5-6 or 21-22		4	4
				Electives		3-6	3-6
The Third Year		1st SEMESTER	2nd SEMESTER	The Fourth Year			
Organic Chemistry		4	4	Courses in field of concentration			
*Zoology 41		4	...	and electives			
Social Science Electives		6	6				
Courses in field of concentration and electives							

* Unless already completed.

The requirements for admission to colleges of dentistry vary but in all cases include at least two years of college work with at least one course each in biology, inorganic chemistry, physics, and English. Hence, the course of study advised as preparation for medicine may be used as a basis for selection by those interested in dentistry.

LAW American law schools, as a rule, require graduation from a four-year college with a Bachelor's degree prior to admission. There is no prescribed curriculum which is requisite for admission, but the student is advised to include in his undergraduate course substantial elections in the fields of languages, literature, history, economics, political science, and philosophy.

THEOLOGY Graduation from a four year college is prerequisite for admission to most theological seminaries. Although no prescribed curriculum is demanded as preparation for such professional schools, the student is advised to elect substantially from the departments of languages (particularly classics), history, philosophy, psychology, and social studies.

The School of Dental Hygiene

The School of Dental Hygiene, established in the fall of 1949 on authorization and a grant of money by the State Legislature and recently accredited by the Council on Dental Education of the American Dental Association, offers a two-year curriculum leading to a Certificate in Dental Hygiene. The purpose is to meet the ever-increasing need for dental health service.

The curriculum conforms to the requirements for accrediting of schools of dental hygiene as adopted by The Council on Dental Education of the American Dental Association on June 20, 1951. On successful completion of this curriculum, the student is eligible to take various examinations given by the State Board of Dental Examiners for licensing by that body.

Graduates of this school will be qualified to give oral prophylactic treatment; to chart the mouth, and to carry dental health education into the private dental practice, public institutions, hospitals and industrial clinics. The hygienist may be called upon to perform the following subsidiary functions as the supervising dentist may direct or approve: to X-ray teeth and develop X-ray films; to assist with laboratory work; to make appointments and keep office records; to give demonstrations of the proper method of using a toothbrush and massaging the gums; to lecture on oral hygiene, and to teach oral hygiene and the relation of diet to oral health. The role of the dental hygienist in the achievement of oral health is an extremely important one, and opportunities for well-rewarded service are practically unlimited.

The course of study is designed to give the student a background of knowledge sufficient to enable her to perform intelligently the tasks of her profession. Students applying for this program should be interested in and have aptitude for scientific studies. A general scientific background is acquired by courses in chemistry, bacteriology, anatomy, and physiology. Courses specifically relating to dental problems give the student an insight into the field of dentistry and dental health. English composition and public speaking teach the individual to express herself clearly on paper and by word of mouth. The proper approach to the patient is taught by courses in psychology and sociology. Skill and self-confidence are acquired by extensive work during the second year in the dental clinic.

The School of Dental Hygiene operates a ten-chair clinic and offers its service for examination and charting of the teeth, prophylaxis treatments and the teaching of dental health to students, employees and faculty members of the University, in addition to the school children in surrounding areas.

Enrollment is limited to women between the ages of seventeen and thirty-five who are high school graduates and otherwise eligible to enter the freshman class of the University. All candidates who plan to practice dental hygiene in Massachusetts or Vermont must be seventeen years of age by the first of June preceding their entrance into the School. Prospective applicants are invited to write the Director of Admissions for detailed information concerning such mat-

ters as requirements for admission and expenses. High school subjects which are helpful prerequisites include algebra, chemistry, physics or biology. Attributes necessary for success in this curriculum are good health, emotional stability, interest in the work, and the ability to get along well with people. Since the laboratory equipment in the School of Dental Hygiene is limited, prospective students are advised to submit their application by May of their senior year in high school. Applicants in this curriculum are required to take the Dental Aptitude Test. Application for the test should be made to the American Dental Hygienists' Association, 522 Fifth Avenue, New York 36, N. Y.

The Freshman Year		1st	2nd	The Sophomore Year		1st	2nd
		SEMESTER				SEMESTER	
English Composition		3	3	Psychology		...	3
Dental Anatomy		4	...	Introductory Sociology		3	...
Dental Histology and				Oral Pathology		2	1
Embryology		2	...	Radiology		1	...
Chemistry (Nursing 9-10)		4	4	Public Health		...	2
Dental Hygiene				Clinical Practice		5	5
Orientation		1	...	Dental Health Education		...	2
Instrumentation		...	3	Pharmacology and Anesthesia		...	2
First Aid		...	1	Ethics and Office Management,			
Bacteriology		...	4	Dental Assisting		1	1
Human Anatomy and				Public Speaking		3	...
Physiology (Nursing 15-16)		3	3	Food Selection		3	...

The College of Education and Nursing

The College of Education and Nursing offers four-year curricula leading to the following degrees: in elementary, junior high and secondary education, the degree of Bachelor of Science in Education; in business education, the degree of Bachelor of Science in Business Education; and in music education, the degree of Bachelor of Science in Music Education.

This College also offers a four-calendar-year curriculum leading to the degree of Bachelor of Science in Nursing.

The objectives of the several curricula include growth in appreciation and understanding of the cultural heritage, development of social and civic competence, improvement of personality, stimulation of intellectual curiosity, strengthening of personal integrity, and development of competence and enthusiasm for the professions of teaching and nursing. To attain these objectives each curriculum provides for a balance of general education courses, professional courses, and laboratory experiences.

General education courses may be elected in the Colleges of Arts and Sciences, Technology, and Agriculture and Home Economics. Professional courses are taken in the College of Education and Nursing. Professional laboratory experiences are provided in the College of Education and Nursing and in schools and hospitals under the supervision of the College of Education and Nursing.

Education curricula in the College of Education and Nursing meet requirements for teaching certification in most of the states. Adjustments in individual programs may be made to fit special requirements for certification in specific states. If in doubt about certification requirements, students should consult with their advisers or with the dean of the college.

SPECIAL FIFTH-YEAR PROGRAM IN EDUCATION A special fifth-year program can be arranged for students who hold the bachelor's degree and who wish to qualify for teaching certificates in either elementary or secondary education. To be accepted for this special program, candidates must have included appropriate academic courses in their degree work, and they must demonstrate their sincerity in wishing to teach.

A combination of courses in education and in the teaching field will be arranged for the individual candidate in accordance with his qualifications and his announced objectives. More specific information concerning this fifth-year program can be obtained by writing to the dean of the college.

Elementary Education

The elementary education program is intended to prepare teachers for any of the elementary grades in schools of Vermont and other states. The degree Bachelor of Science in Education is awarded upon satisfactory completion of an approved program.

The elementary education curriculum includes a base of required academic courses, a planned sequence of professional courses and laboratory experiences, and elective academic courses which may be concentrated in a major field or may be distributed in several academic fields.

The foundation in general education includes required courses in the social sciences, in laboratory science, in English and literature, in psychology and in speech. All students are required to demonstrate proficiency in general mathematics by attaining satisfactory scores on standardized tests. Courses in fine arts and in languages may be elected.

The professional program begins with an orientation to education in the freshman year. The purpose of this orientation is to give the student an opportunity to learn about the professional courses and experiences in the several education curricula and to consider the desirability of a career in education. Educational films, contacts with teachers and administrators from the field, presentations by upper classmen, and opportunities for small group discussion are included in the orientation experiences.

In the sophomore year, the students are offered field experience with children's groups in the community. These experiences serve the dual purpose of giving firsthand information about children and of providing opportunity for determining the satisfaction which association with children of different age levels brings to the student.

In the junior year, the student in elementary education concentrates in professional course work and in special content courses for elementary teaching. Classroom observation and participation in local elementary schools is included in the professional courses.

The senior year continues the professional methods courses with increased emphasis upon actual classroom participation leading to seven full weeks of student teaching in the elementary schools of Burlington and nearby communities. An experience in citizenship and community study involving firsthand contacts with state and community leaders is included in the final semester. Participation in the University reading center may be elected by a limited number of students.

In each year of the program, the curriculum provides for elective courses from other colleges. Total electives approximate thirty semester hours and open to the student in elementary education attractive majors in music, art, speech, language, literature, history, and other fields of study offered by the University.

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
Orientation to Education	1	1	Child & Community	1 or 1	
*Speech or Geography	3	3	Gen. and Educ. Psych.	3	3
Science	4	4	Speech or Geography	3	3
English Composition	3	3	Literature	3	3
†Approved Elective	3-6	3-6	Approved Electives	6	6

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Art for Elem. Schools	...	3	Methods and Materials	3	...
Child Growth and Develop.	3	...	Art for Elem. Schools	3	...
Children's Literature	...	3	Phys. Educ. for Elem. Schools	2	...
Methods and Materials	3	3	Student Teaching	...	7
Music	3	3	Philosophy of Education	...	3
Teaching Reading	3	...	Health Education	...	2
American History	3	3	Prob. in Citizenship	...	3
Approved Elective	3	3	Methods in Music for Elem. Schools	3	...
			Approved Elective	3-6	...

A minimum of 125 approved semester hours is required for the degree.

* Both speech and geography are to be completed by the end of the sophomore year.

† Political Science must be elected at some time during the program.

Junior High School Education

The junior high school education program is intended to prepare teachers for the upper grades of the elementary school and for junior high school positions in Vermont and in other states where certification requirements can be met. The degree Bachelor of Science in Education is awarded upon satisfactory completion of the following program.

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
English Composition	3	3	Literature	3	3
* Mathematics	3 or 3		American History	3	3
Economic Geography	3	3	Psychology	3 or 3	
† Science	4	4	† Science	3-4	3-4
Orientation to Educ.	1	1	Approved Elective	3-6	3-6
Elective	3-6	3-6			
The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
English or Elective	3	3	General Methods	3	...
Political Science	3	3	Jr. H. S. Org. and Mgt.	3	...
Jr. H. S. Curriculum	...	3	Philosophy of Educ.	...	3
Learning and the Adolescent	3	3	Guidance	...	3
‡ Vt. History (or Elective)	...	1	Student Teaching	...	6
§ Approved Electives	6	3	Health Education	...	2
			Approved Electives	9-12	3

* Students must pass arithmetic proficiency test.

† A biological and a physical science are to be included during the first two years.

‡ Vermont students must include Vermont History.

§ All students are to elect at least one course in speech.

A minimum of 125 approved semester hours is required for the degree.

Secondary Education

The secondary education program is intended to prepare teachers for junior and senior high schools in Vermont and other states. The degree Bachelor of Science in Education is awarded upon satisfactory completion of an approved program.

During the first two years the curriculum consists generally of basic courses in English, fine arts, foreign languages, mathematics, science, and social science. Orientation to education as a career is provided during the freshman year. Sophomores begin concentration on majors and minors in chosen teaching fields and are given opportunity to participate in teaching experiences in local second-

ary schools. The junior and senior years combine courses in the elected teaching fields, professional courses in education, and laboratory experience in teaching.

PROFESSIONAL REQUIREMENTS Candidates for the degree in secondary education are required to complete with a high standard of scholarship at least eighteen semester hours of course work in professional education.

TEACHING MAJORS AND MINORS Candidates for the degree in secondary education are required to complete two teaching majors or one major and two minors in fields which are commonly taught in secondary schools, or candidates may elect to concentrate in one of two broad fields, such as general science or social science. A teaching major includes at least twenty-four semester hours in a given subject; a teaching minor, fifteen to eighteen semester hours. A single major in a broad field includes approximately fifty semester hours in related courses. The major-minor program must include advanced course work.

Students should choose majors and minors which bear logical relationships and which commonly occur as teaching combinations in secondary schools. Suggested major and minor fields are English, foreign languages, history, mathematics, political science, speech, and the sciences. Advisers can assist students in making choices which are in accord with student aptitudes and interests and which are likely teaching combinations. Outlines of suggested course sequences for majors and minors may be obtained from advisers or from the office of the dean of the college.

Students are expected to maintain a high standard of scholarship in their major and minor fields. A grade of less than 72 may not be credited toward a major or minor unless other grades in the field are sufficiently high to justify an exception.

STUDENT TEACHING During the senior year, students enrolled in the secondary education curriculum are required to take a laboratory course in teaching. Students are expected to spend six continuous weeks in a secondary school where they will follow a full teaching schedule. Students are to plan their programs so as to complete their academic subjects before the last semester of their senior year.

The Freshman Year		1st SEMESTER	2nd SEMESTER	The Sophomore Year		1st SEMESTER	2nd SEMESTER
English Composition		3	3	Literature		3	3
Foreign Language		3-4	3-4	‡Foreign Language		3	3
*History or Political Science		3	3	Psychology		3	or 3
Laboratory Science		4	4	Approved Electives		6-9	6-9
Orientation to Educ.		1	1	Participation		2	or 2
†Elective		3	3				
The Junior Year		1st SEMESTER	2nd SEMESTER	The Senior Year		1st SEMESTER	2nd SEMESTER
English or Elective		3	3	Secondary Educ. Meth.		3	...
Learning and the Adolescent		3	3	Philosophy of Educ.		...	3
§Approved Electives		9-12	9-12	Student Teaching		...	6
				Approved Electives		12-15	3-6

* If history is chosen, Survey of European History is recommended.

† If recommended by adviser.

‡ An approved elective if intermediate language has been completed.

§ All students are to elect a course in speech.

A minimum of 122 approved semester hours is required for the degree.

Business Education

The curriculum in Business Education is intended to prepare teachers of business subjects for secondary schools in Vermont and other states. Freshman and sophomore years are concerned primarily with the development of a foundation in general education. Junior and senior years emphasize courses in business and in education. Students do six weeks of practice teaching in the final semester of the senior year.

Beginning courses in typing and in shorthand make it possible for students to succeed in the program without previously developed skills in these subjects.

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
Orientation to Education	1	1	English-American Literature	3	3
English Composition	3	3	General Psychology	3	or 3
*Social Science	3	3	Principles of Economics	3	3
Mathematics	3	3	Laboratory Science	4	4
Speech	3	...	Principles of Accounting	3	3
Elective	3	6	Elective	3	or 3
The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Learning and the Adolescent	3	3	Advanced Shorthand	4	...
†Elementary Shorthand	4	...	Advanced Typing	3	...
Intermediate Shorthand	...	4	Office Management	3	...
†Elementary Typing	3	...	Elective	3	...
Intermediate Typing	...	3	Sec. seminar or elective	3	...
Business Correspondence	3	3	Student Teaching	...	7
Business Law	3	3	Philosophy of Education	...	3
Elective	3	...	Teaching Business Subjects	3	...
Participation	...	2	Secretarial Practice	...	2
Prin. of Business Education	...	2	Transcription	...	4

* Survey of European History recommended.

† Students may be exempt by demonstrating satisfactory proficiency.

A minimum of 12½ approved semester hours is required for the degree.

Music Education

The curriculum in music education, leading to the degree of Bachelor of Science in Music Education, is recommended to students who have sufficient training and natural musical ability to justify a career in music. Graduates are qualified for positions as instructors and supervisors of music in the public schools.

Students must pass the aptitude tests given by the Department of Music and must satisfy the general admission requirements of the University.

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
Survey of Musical Literature	3	3	Elementary Harmony	3	3
Elem. Theory and Ear-training	3	3	Adv. Theory and Ear-training	3	3
Applied Music (two courses)	2-3	2-3	Applied Music (two courses)	2-3	2-3
English Composition	3	3	Violin Class	1	1
Elementary German	4	4	Sophomore English Elective	3	3
Laboratory Science	3-5	3-5	Intermediate German	3	3
Choir or Orchestra	1	1	Psychology	3	3
			Choir or Orchestra	1	1

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Advanced Harmony	3	3	Orchestration and Conducting	3	3
Methods and Practice Teaching	3	3	Sec. Meth. and Practice Teaching	3	3
Applied Music (two courses)	2-3	2-3	Applied Music Methods	1	1
Wind Class	1	1	History of Music	3	3
Art	3	3	Applied Music (two courses)	2-3	2-3
Education, Prin. and Phil.	3	3	Elementary Italian	3	3
Choir or Orchestra	1	1	Choir or Orchestra	0	0

Note: The music education curriculum is under revision as this bulletin goes to print. The above outline of courses is for 1957-58. Write for information on the new curriculum to the Dean of the College of Education and Nursing.

The Nursing Curriculum

The faculty of the Department of Nursing accepts as its philosophy that nursing is a profession which derives its functions from the needs of society, and that education for nursing should provide general learning experience and professional education which will enhance the development of personal and professional maturity.

To accomplish this, the curriculum is designed to prepare the nurse with knowledge, skills, and attitudes necessary to function in beginning positions as a competent member of the health team in the home, hospital, or public health agency. In addition, the program is intended to assist the student to gain a better understanding of the growth of the profession and the responsibilities of its members. The cultivation of effective self-expression and understanding of self and of others, and the recognition of the responsibilities and opportunities of citizenship are inherent in the program. A foundation is laid upon which subsequent specialization in any area of nursing is possible.

The program is approved by the Vermont State Board of Registration of Nurses and is fully accredited by the National League for Nursing, Inc., including Public Health Nursing. On completion of the program of three calendar years and one academic year, the student receives the degree of Bachelor of Science in Nursing. Applicants must satisfy the general admission requirements of the University. High school courses in biology and chemistry are highly desirable.

The first academic year is spent at the University. Following this, there is a summer session of nine weeks, during which time instruction is correlated with supervised clinical practice in the Mary Fletcher Hospital, which adjoins the campus. In the sophomore year the program consists of academic work at the University and supervised field experience in various units of the Mary Fletcher Hospital. In the junior year clinical experience is obtained in the following cooperating agencies: Cornell University-N. Y. Hospital School of Nursing in New York, N. Y.; Massachusetts Mental Health Center in Boston under Boston University School of Nursing; the Veterans Administration Hospital in Rutland Heights, Mass., with Boston University School of Nursing. Following the junior year there is a six weeks summer session at the University of Vermont.

At present, during the junior year students live in the nurses' residences of the cooperating hospitals or in university dormitories. In their fourth year they continue the work at the University in liberal arts and selected professional

courses, with field experience provided in the following cooperating agencies: Vermont State Department of Health, the Burlington Visiting Nurse Association, Inc., and the Mary Fletcher Hospital. When field experience in Public Health Nursing requires off-campus residence, appropriate housing arrangements are made for students to live in private homes or other approved facilities.

The First Year (September-June)	1st 2nd SEMESTER	The Second Year	1st 2nd SEMESTER
English Composition	3 3	Psychology	3 ...
Chemistry	4 4	Sociology	3 3
Human Anatomy and Physiology	3 3	Medical and Surgical Nursing	9 9
History of Nursing	2 ...	Child Growth and Development	... 3
Speech	3 ...	The Third Year (July-July)	CREDITS
Introduction to Nursing	2 4	Obstetric Nursing	8
Psychology	... 3	Pediatric Nursing	8
Physical Education	(1) (1)	Psychiatric Nursing	6
The Summer Session (9 weeks)	CREDITS	Tuberculosis Nursing	3
Fundamentals of Nursing	3	The Summer Session (6 weeks)	CREDITS
Nutrition and Food Preparation	3	English	3
Microbiology	3	Approved Elective	3
The Fourth Year (September-June)	CREDITS		
Principles of Public Health	2		
Principles of Public Health Nursing	2		
Public Health Nursing in the Community	2		
Analysis of Selective Nursing Situations	6		
English	3		
Survey of Contemporary Nursing	2		
Social Science	3		
Approved Electives	9		

EXPENSES The total expenses for the program are approximately the same as for the other undergraduate programs, but they are distributed differently because of additional tuition payments for the freshman and junior summer sessions and transportation expenses to and from field experiences. An estimate of the expenses for 1958-59 follows.

	Freshman Year	Summer, 9 Weeks	Sophomore Year
Tuition	\$ 345.00	\$ 108.00	\$ 345.00
Activity fee	15.00	-----	15.00
Board and room	670.00	210.00	670.00
Textbooks	50.00	20.00	30.00
Uniforms	60.50	60.50	-----
Hospitalization insurance	-----	38.00	38.00
	<hr/>	<hr/>	<hr/>
Vermont resident	\$1,140.50	\$ 436.50	\$1,098.00
Nonresidents add tuition	490.00	144.00	490.00
	<hr/>	<hr/>	<hr/>
	Junior Year	Summer, 6 Weeks	Senior Year
Tuition	\$ 345.00	\$ 60.00	\$ 345.00
Activity fee	15.00	-----	15.00
Textbooks	15.00	10.00	30.00

Board and room*	.....	170.00	790.00
Transportation, field work	100.00	.....	.....
Hospitalization insurance	38.00	.....	.....
	-----	-----	-----
Vermont resident	\$ 513.00	\$ 240.00	\$1,180.00
Nonresidents add tuition	490.00	60.00	490.00

* It is anticipated that all students who entered the nursing curriculum in September 1957 and thereafter will receive instruction, supervision and experience in their entire program on this campus. This will enable all students to live on this campus during the junior year, effective in 1959 for the Class of 1961. This will mean an additional expense of \$670.00 for board and room during the junior year but will eliminate the listed expense of \$100.00 for transportation to field experiences. The establishment of all field experiences in Vermont has been made possible through the receipt of a grant from the National Institute of Mental Health for Psychiatric Nursing; the development of a Nursery School on the campus and other facilities for teaching Pediatric Nursing at the Mary Fletcher Hospital and in the community; and the development of facilities at this hospital and in the community for teaching Obstetric Nursing. This is a forward step in the nursing curriculum, since it will provide for continuity of learning experiences with all instruction and supervision given by University of Vermont faculty.

It is expected that each student will carry Blue Cross-Blue Shield Insurance or its equivalent for the last three years of her program, effective June first of her freshman year.

Insofar as its resources permit, the University provides financial aid in the form of scholarships, loans, prizes, and employment.

PROFESSIONAL PERSONNEL IN COOPERATING FIELD AGENCIES:

Dr. R. B. Aiken, Commissioner of Health, Vermont State Department of Health
 Grace Buttolph, Director, School of Nursing, Mary Fletcher Hospital
 Philip Day, Director of Nursing Service, Mary Fletcher Hospital
 Emily Dinegan, Director, Burlington Visiting Nurse Association, Inc.
 Virginia Dunbar, Dean, Cornell University-N. Y. Hospital School of Nursing
 Marie Farrell, Dean, Boston University School of Nursing
 Mary Ann Garrigan, Chairman, Basic Professional Division, Boston University School of Nursing
 Mrs. Anne Hargreaves, Assistant Professor, Psychiatric Nursing, Boston University School of Nursing
 Mrs. Ruth Houghton, Instructor, Operating Room Nursing, Mary Fletcher Hospital
 Robert Mahoney, Assistant Chief, Nursing Education, Veterans Administration Hospital, Rutland Heights, Mass.
 Esther Martinson, Director, Division of Public Health Nursing, Vermont State Department of Health
 Audrey McCluskey, Instructor, Obstetric Nursing, Cornell University-N. Y. Hospital School of Nursing
 Marjorie Nye, Instructor, Tuberculosis Nursing, Boston University School of Nursing
 Agnes Schubert, Instructor, Pediatric Nursing, Cornell University-N. Y. Hospital School of Nursing

The College of Technology

The College of Technology includes the Departments of Chemistry, Commerce and Economics, Civil Engineering, Electrical Engineering, Mechanical Engineering, and Mathematics. It offers a number of specialized professional curricula in these fields and in medical technology, leading to the degree of Bachelor of Science in the field of specialization. Details are given in the sections immediately following. In addition to the courses listed in the several curricula, *all students must fulfill the general requirements in physical education, military science, and hygiene.* Students whose curricula require them to take two years of mathematics are referred to the footnote under the offerings of the Department of Mathematics for information concerning the possible sequences of courses in freshman mathematics.

The Chemistry Curriculum

The Department of Chemistry offers a specialized curriculum leading to the professional degree of Bachelor of Science in Chemistry. This curriculum is designed to give a sound basic training in chemistry, to prepare the student for service in some branch of the chemical profession, and to qualify him adequately for advanced study in graduate school. The department is accredited by the Committee on Professional Training of the American Chemical Society, which has established minimum requirements for the training of chemists at the bachelor's level. In accepting accreditation, the department has planned a curriculum which permits the student to reach these minimum objectives and will qualify the graduate for certification.

Those who wish a less intensive training in chemistry may take the liberal arts curriculum with a concentration in chemistry and receive the Bachelor of Arts degree. These students may also qualify for accreditation by satisfactorily completing certain courses beyond the minimum required for concentration, and *only those who so qualify will be recommended as chemists by the department.* A student can elect to concentrate in chemistry at the end of the freshman year or even as late as the end of the sophomore year and still qualify for accreditation. However, the department strongly recommends that the student choose before the start of his sophomore year. In the first year, and to some degree in the second year, prescribed courses are such that a student can transfer into the curriculum from liberal arts, or vice versa.

The First Year	1st SEMESTER	2nd SEMESTER	The Second Year	1st SEMESTER	2nd SEMESTER
General Chemistry	5	5	Quantitative Analysis	4	4
English Composition	3	3	Sophomore English	3	3
*Algebra, Trig., Anal. Geom.	5	5	†Calculus	3	3
Elementary German	4	4	Intermediate German	3	3
			General Physics	5	5

* See footnote under offerings of the Department of Mathematics.

† Those students whose secondary school mathematics is not adequate and who must enroll in Math. 9 will be required to take Math. 10, 12, and 21. They will not be required to take Math. 22.

The Third Year	1st SEMESTER	2nd SEMESTER	The Fourth Year	1st SEMESTER	2nd SEMESTER
Physical Chemistry	5	5	Iden. of Organic Compounds	5	...
Organic Chemistry	5	5	Senior Research	2	4
Advanced Physics or Mathematics	3	3	†Advanced Organic Chemistry	3	3
Approved Elective	3	3	†Advanced Physical Chemistry	3	3
Junior Seminar	1	1	†Advanced Inorganic Chemistry	...	3
			†Advanced Theoretical Chemistry	3	...
			Senior Seminar	1	1
			Approved Elective	3	3
			‡Inorganic Preparations	...	2

† Six hours of courses chosen from these offerings are required each semester.

‡Required of students deficient for accreditation in general chemistry laboratory.

THE MASTER'S DEGREE IN CHEMISTRY The department offers work leading to the degree of Master of Science, the thesis problem being selected from the fields of inorganic, analytical, organic, or physical chemistry. Students who do not already have a reading knowledge of German must take German concurrently with their graduate work.

The First Year	1st SEMESTER	2nd SEMESTER	The Second Year	1st SEMESTER	2nd SEMESTER
*Graduate Research	5	5	Graduate Research	5	5
*Advanced Chemistry	6	6	Advanced Chemistry	6	6
Seminar	1	1	Seminar	1	1

* Identification of Organic Compounds required unless included in undergraduate training. Chemistry 247-248 or the equivalent required of all graduate students.

The Commerce and Economics Curriculum

The Department of Commerce and Economics offers a specialized curriculum, leading to the degree of Bachelor of Science in Commerce and Economics. Those who wish a less intensive or less specialized training in economics may take the liberal arts curriculum, with a concentration in economics, and receive the Bachelor of Arts degree. An advisor from the department will assist students in building programs to meet their individual needs and plans.

The commerce curriculum is recommended for those who are preparing for a business career. It is intended to provide sound basic training in the various phases of business activity. The several options enable students to emphasize such specialized studies as accounting, banking, finance, insurance, government service, industrial management, production, sales management, secretarial studies, and small business. The Department of Commerce and Economics cooperates with the Department of Mechanical Engineering in offering courses in the Management Engineering Curriculum. This curriculum is administered by the Department of Mechanical Engineering and is described in the section on engineering curricula.

The accounting option is registered with The University of the State of New York, The State Education Department, in Albany, N. Y. Students completing the requirements of the accounting option will thus be eligible for admission to the New York State licensure examination in Certified Public Accountancy.

The normal program for the first two years in the commerce and economics curriculum is as follows:

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
World Economic Geography	3	3	World Lit. or Engl.-Am. Lit.	3	3
English Composition	3	3	Principles of Economics	3	3
Algebra, Math. of Finance	3	3	Economic History	3	3
Laboratory Science	4	4	Principles of Accounting	4	4
*Foreign Language	3-4	3-4	†Foreign Language, Calculus or American Government	3	3

* In place of the foreign language, students may choose Mathematics 11-12 (plane trigonometry, plane analytic geometry, differential calculus) and 21 (calculus).

† American Government should be elected by students who have completed the intermediate language requirement.

During the junior and senior years, commerce and economics students normally choose one of the following options:

Accounting

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Adv. Accounting	3	3	Tax Accounting	...	3
Fin. Statement Anal.	3	...	Auditing	3	...
Cost Accounting	...	3	Economic Statistics	3	...
Money and Banking	3	3	C.P.A. Problems	...	3
*American Government	3	3	Securities Markets	3	...
General Psychology	3	...	Corporation Finance	...	3
Ethics	...	3	Business Law I	3	3
Approved Electives	3	3	Approved Electives	3	3
			Business Law II	...	2

Banking, Finance, and Insurance

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Money and Banking	3	3	Taxation	3	...
Securities Markets	3	...	Investments	...	3
Corporation Finance	...	3	Insurance	3	3
Economic Statistics	3	3	Money, Income and Prices	3	3
*American Government	3	3	Business Law I	3	3
General Psychology	3	...	Business Law II	...	2
Ethics	...	3	Approved Electives	3	3
Approved Electives	3	3			

Business Administration

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Money and Banking	3	3	Securities Markets	3	...
Economic Statistics	3	3	Corporation Finance	...	3
General Psychology	3	...	Investments	3	3
Ethics	3	...	Business Law I	3	3
Principles of Marketing	3	...	Taxation	3	...
*American Government	3	3	Money, Income and Prices	3	3
Approved Electives	3	3	Small Business Operations	...	3
			Approved Electives	3	3

Industrial Management

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Labor Economics	3	...	Industrial Organ.	3	...
Collective Bargaining	...	3	Science Management and Labor	...	3
Principles of Marketing	3	...	Motion and Time Study	3	...
Problems of Marketing	...	3	Plant Organization	...	4
General Psychology	3	...	Business Law I	3	3
Ethics	...	3	Cost Accounting	...	3
*American Government	3	3	Exec. Decision Making	...	3
Economic Statistics	3	3	Approved Electives	6	3
Approved Electives	3	3			

Marketing and Merchandising

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Principles of Marketing	3	...	Personal Salesmanship	3	3
Problems in Marketing	...	3	Small Business Operation	...	3
Money and Banking	3	3	Sales Management	3	...
General Psychology	3	...	Advertising	...	3
Ethics	...	3	Business Law I	3	3
*American Government	3	3	Approved Electives	6	6
Economic Statistics	3	3			
Approved Electives	3	3			

* Students who have completed this course will enroll in marketing or an approved elective.

Personnel Management

(to be discontinued in 1959)

The Senior Year	1st SEMESTER	2nd SEMESTER
Personnel Administration	3	3
Laboratory Science	4-5	4-5
Business Law I	3	3
Life Insurance	3	...
Time and Motion Study	4	...
Approved Electives	...	6

Secretarial Studies

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Business Communications	3	3	Office Management	3	...
General Psychology	3	...	Seminar (Secretarial)	3	...
Ethics	...	3	Exec. Sec. Procedures	...	3
Business Law I	3	3	Money and Banking	3	3
Principles of Marketing	3	...	Personnel Admin.	3	...
Public Speaking	...	3	Advanced Typing	3	...
Typing (Elem. and Interm.)	3	3	Advanced Shorthand	4	...
Shorthand (Elem. and Interm.)	4	4	Transcription	...	7
			*Approved Electives	...	6

Students who *have* studied typing and/or shorthand in high school and *qualify* for advanced work in these fields, will take 6 hours of approved electives in the first semester and intermediate typing and shorthand during the second semester.

* Students will be guided in the selection of electives in the light of professional objectives.

Hotel and Resort Management

(to be discontinued in 1959)

The Senior Year

	1st	2nd
	SEMESTER	
Business Law I	3	3
Personnel Administration	3	3
Labor Economics	3	—
Advertising	—	3
Hotel and Resort Administration	3	—
Hotel and Resort Problems	—	3
Institution Marketing	2	—
Institution Equipment	—	2
Approved Electives	3	3

The Engineering Curricula

The engineering curricula are designed to help students learn how to approach and deal in a professional manner with problems and situations they will meet as engineers, citizens and individuals. In so doing, the curricula will assist them in preparing to continue to learn from experience and to grow in stature after graduation.

The Departments of Engineering offer instruction in four curricula, Civil, Electrical, Management, and Mechanical Engineering, each leading to the degree of Bachelor of Science in the field of specialization. Each curriculum includes the general subjects: mathematics, chemistry, physics, graphics, elements of electrical engineering, mechanics, economics, English, and contracts or business law.

All freshman and sophomore men are required to complete the two basic courses in military science for a total credit of eight semester hours, which become an integral part of the record and are counted toward graduation. Two years of physical education are normally required of all students.

An inspection trip is required of all engineering students in the junior year. This trip requires several days, and visits are made to plants in industrial centers in New England. The trip is required for graduation, but does not carry credit. The expense is borne by the student.

Students enrolled in the civil, electrical, and mechanical engineering curricula may become affiliated with their respective national professional engineering societies, the American Society of Civil Engineers, the American Institute of Electrical Engineers, the Institute of Radio Engineers, and the American Society of Mechanical Engineers, as each of these organizations has authorized a student chapter at The University of Vermont. These student organizations sponsor frequent meetings, the purpose of which is to present an opportunity for students to conduct activities similar to those conducted by members of the national societies. These activities include meetings at which technical papers are presented by students and by engineers who are actively engaged in the profession, attendance at conventions, and inspection trips, all of which provide helpful contact with engineering practice and also assist in the development of the qualities of leadership which are so essential for success in the engineering profession.

The curricula in civil, electrical and mechanical engineering are accredited by the Engineers Council for Professional Development.

The Freshman Year (For All Curricula)

†Freshman Mathematics, 11-12
Introductory Chemistry, 1-2
Engineering Graphics, 1-2
English Composition, 1-2
Engineering Problems (M.E. 3-4)

1st	2nd
SEMESTER	SEMESTER
5	5
4	4
2	2
3	3
1	1

† See footnote under offerings of the Department of Mathematics.

Civil Engineering

The Sophomore Year

	1st	2nd
	SEMESTER	SEMESTER
Calculus (Math. 21-22)	3	3
General Physics, 21-22	5	5
Surveying (C.E. 51-52)	4	4
Expository Writing (Engl. 16)	3	...
Statics (C.E. 24)	3	...
Dynamics (C.E. 130)	...	3
*Restricted Elective	...	3
Summer, Engineering Camp (C.E. 54) 4 weeks	...	4

The Junior Year

	1st	2nd
	SEMESTER	SEMESTER
Mech. of Materials I (C.E. 131)	3	...
Eng. Geology (Geol. 21)	3	...
Electrical Circuits and Machines (E.E. 101)	4	...
Thermodynamics and Heat Transfer (M.E. 113)	3	...
Prin. of Econ., 11-12	3	3
Mech. of Materials Lab. (C.E. 114)	...	1
Eng. Contracts (C.E. 151)	...	2
Hydraulics (C.E. 162)	...	3
Hydraulics Lab. (C.E. 168)	...	1
Statistically Determinate Struct. (C.E. 140)	...	4
†Approved Elective	3	3

The Senior Year

	1st	2nd
	SEMESTER	SEMESTER
Concrete and Bituminous Lab. (C.E. 113)	1	...
Reinforced Concrete (C.E. 155)	3	...
Water Supply Eng. (C.E. 165)	3	...
Soil Mechanics (C.E. 173)	3	...
Indet. Structures I (C.E. 175)	3	...
Transportation Eng. (C.E. 174)	3	...

The Senior Year (continued)

	1st	2nd
	SEMESTER	SEMESTER
Substructure Design (C.E. 158)	...	4
Sewerage and Sewage Treatment (C.E. 166)	...	3
Adv. Struct. Design (C.E. 176)	...	4
Mechanics of Materials II (C.E. 204)	...	3
†Approved Elective	3	3

* Restricted Elective must be selected from: Speech 11, Public Speaking; English 26, World Literature; or English 28, English-American Literature.

† Approved Electives—Six hours must be selected from art, history, music, language, literature, philosophy, political science, psychology, religion, sociology, or speech. The remaining six hours may be selected from the same areas, from the natural sciences, from military or air science, or from offerings of the College of Technology.

Mechanical Engineering

The Sophomore Year

	1st	2nd
	SEMESTER	SEMESTER
Calculus (Math. 21-22)	3	3
General Physics (Physics 21-22)	5	5
Mfg. Processes (M.E. 51-52)	2	2
World Literature (Engl. 25)	3	...
Statics (C.E. 24)	3	...
Dynamics (C.E. 130)	...	3
Thermodynamics (M.E. 92)	...	2
Mechanical Instrumentation (M.E. 84)	...	1

The Junior Year

	1st	2nd
	SEMESTER	SEMESTER
Heat Transfer (M.E. 266)	...	2
Mech. of Materials (C.E. 131)	3	...
Materials Lab. (C.E. 114)	...	1
Mechanisms (M.E. 131)	4	...
Thermodynamics (M.E. 111)	4	...
Differential Equations (Math. 211)	3	...
*Elective	3	3
M.E. Laboratory (M.E. 117)	1	...
Industrial Metallurgy (M.E. 102)	...	3
Machine Design I (M.E. 134)	...	4
Fluid Mechanics (M.E. 142)	...	3
Applied Mathematics (Math. 212)	...	3

The Senior Year	1st SEMESTER	2nd SEMESTER	The Senior Year (continued)	1st SEMESTER	2nd SEMESTER
Adv. Heat Power Engr. (M.E. 262)	...	5	Thesis (M.E. 292) or Elective†	...	3
Adv. Fluid Mechanics (M.E. 243)	4	...	Engr. Analysis (M.E. 294)	...	1
Machine Design II (M.E. 151)	4	...	Indus. Engineering (M.E. 174)	...	3
Mech. Vibration (M.E. 255)	2	...	Electrical Engineering (E.E. 101-102)	4	4
Economics (Econ. 11-12)	3	3	Public Speaking (Speech 11)	3	...

* The Junior Year electives must be selected from one of the following: literature, sociology, religion, political science, psychology, history, philosophy, art, music, economics, or language.

† The Senior Year elective may be chosen from any area of study.

Electrical Engineering

			The Sophomore Year	1st SEMESTER	2nd SEMESTER
			Sophomore Math. (Math. 21-22)	3	3
			General Physics (Phys. 21-22)	5	5
			Statics (C.E. 24)	3	...
			Dynamics (C.E. 130)	...	3
			Elec. and Mag. Ccts. I (E.E. 25-26)	4	4
			Expository Writing (Engl. 16)	3	...
			Public Speaking (Speech 11)	...	3

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
*Prin. of Econ. (Ec. 11-12)	3	3	Filters, Lines and Fields (E.E. 225-226)	3	3
Modern Physics (Phys. 172)	...	3	Elec. Machines (E.E. 117)	3	...
Diff. Equations (Math. 211)	3	...	Servomechanisms (E.E. 210)	...	3
Applied Math. (Math. 212)	...	3	Adv. Electronics (E.E. 203)	3	...
Mech. of Materials (C.E. 131)	3	...	E.E. Lab. II (E.E. 121)	2	...
Thermodynamics (M.E. 113)	3	...	Fluid Mechanics (M.E. 142)	...	3
Elec. and Mag. Ccts. II (E.E. 125)	4	...	*Contracts (C.E. 151)	2	...
Elect. and Mag. Ccts. III (E.E. 126)	...	3	Seminar (E.E. 281-282)	1	1
Elect. Machines (E.E. 116)	...	3	†Approved Electives	6	6
Phys. Electronics (E.E. 109)	3	...			
Electronic Circuits (E.E. 110)	...	3			
Elec. Lab. I (E.E. 120)	...	2			

* For students taking two years of Adv. Military or Air Science the requirement of C.E. 151 will be waived and Econ. 11-12 may be deferred until the senior year.

† Of the total of 12 hours of electives required, at least six must be selected from one of the following: art, history, music, language, literature, philosophy, political science, psychology, religion, sociology or speech. The remaining six hours may be selected from the same areas, from Military or Air Science, or from offerings of the College of Technology.

Management Engineering

The Sophomore Year	1st SEMESTER	2nd SEMESTER
Calculus (Math. 21-22)	3	3
Gen'l Physics, 21-22	5	5
Prin. of Econ., 11-12	3	3
Mfg. Processes (M.E. 51-52)	2	2
Statics (C.E. 24)	...	3
Expository Writing (Engl. 16)	3	...

The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
Prin. of Accountg (Econ. 13-14)	4	4	Labor Economics, 141	3	...
Gen'l Psych., 1	3	...	Collective Bargaining (Econ. 242)	...	3
Applied Psych., 6	...	3	Indust. Organization (Econ. 143)	3	...
Dynamics (C.E. 130)	3	...	Business Law (Econ. 109)	3	...
Mech. of Materials (C.E. 131)	3	...	Ec. Life and Govt. Control (Econ. 183)	...	3
Indus. Metallurgy (M.E. 102)	...	3	Motion and Time (M.E. 175)	4	...
Fluid Mechanics (M.E. 142)	...	4	Plant Organ. (M.E. 176)	...	4
Thermodynamics and Heat Transfer (M.E. 113)	3	...	Elec. Ccts. and Mach. (E.E. 101-102)	4	4
Statistics (Econ. 187)	3	...	Electives	3	3
Public Speaking (Speech 11)	...	3			
Parl. Procedure (Speech 3)	1	...			
Sci. Mang. and Labor (Econ. 254)	...	3			

Agricultural Engineering

For the Agricultural Engineering Curriculum see pages 39-40.

The Mathematics Curriculum

This curriculum is designed to provide sound basic training in mathematics, to prepare the student for positions in one of the areas in which mathematicians are sought, and to qualify him for advanced study in graduate school. Students in the College of Arts and Sciences may also concentrate in mathematics and will receive the Bachelor of Arts degree. An advisor from the department will assist students in the determination of a program best suited to their individual needs and plans.

The Freshman Year	1st SEMESTER	2nd SEMESTER	The Sophomore Year	1st SEMESTER	2nd SEMESTER
English Composition, 1-2	3	3	Engl.-Am. or World Lit.	3	3
*Mathematics, 11, 12	5	5	Math. 21, 22	3	3
†German or French	4	4	†German or French	3	3
Laboratory Science	4-5	4-5	Physics, 21-22	5	5
			Elective	3	3
The Junior Year	1st SEMESTER	2nd SEMESTER	The Senior Year	1st SEMESTER	2nd SEMESTER
‡Mathematics Electives	6	6	‡Mathematics Electives	6	6
§Advanced Science	3-4	3-4	§Advanced Science	3-4	3-4
Electives	9	9	Senior Problem	3	3
			Electives	3	3

* See footnote under offerings of Department of Mathematics.

† If an intermediate language is taken the freshman year an elective may be substituted the sophomore year.

‡ Beyond Mathematics 22.

§ A Physical Science or Engineering course beyond the Sophomore level, to constitute a minor specialization.

The Medical Technology Curriculum

The curriculum is divided into two parts, the preclinical period consisting of three years of work in the College of Technology (ninety-one semester hours) and the clinical period of twelve months under the supervision of the College of Medicine.

The work of the preclinical period is designed to give the students a scientific background which will enable them to learn to perform intelligently the highly specialized techniques of the modern diagnostic laboratory. The work of the clinical period consists of learning techniques, taking prescribed courses in the College of Medicine, and practical experience in the laboratories of the teaching hospitals.

The clinical period begins with the summer following completion of the junior year in the college of Technology. At the end of eleven months, if the student's work is satisfactory, the degree of Bachelor of Science in Medical Technology is conferred at the regular Commencement exercises. An additional month in the program is required, at the end of which time the student may be recommended to the Registry of Medical Technologists as eligible to take the examination for certification by that body.

A first semester's tuition is collected at the beginning of the summer course, preceding the senior year. A second semester's tuition is collected at the beginning of the second semester of the senior year. One full year's tuition pays for both the summer course and the senior year.

The First Year	1st SEMESTER	2nd SEMESTER	The Third Year	1st SEMESTER	2nd SEMESTER
English Composition	3	3	Organic Chemistry	4	4
Introductory Chemistry	4	4	Introductory Physics	3	3
Introductory Zoology	4	...	Approved Electives	9	9
Mathematics (Algebra and Trigonometry)	3	3	The Summer Session		
Approved Elective	...	3	Basic Techniques		6 hours
Introduction to Medical Technology	0	...			
The Second Year	1st SEMESTER	2nd SEMESTER	The Fourth Year	1st SEMESTER	2nd SEMESTER
English-American or World Lit.	3	3	Biochemistry for Medical Technologists	6	3
Elementary Quantitative Analysis	3	3	Bacteriology	7	...
Zoology (Vertebrate and Comparative Anatomy)	4	4	Clinical Pathology	2	...
Approved Electives	6	6	Basic Techniques	2	...
			Hospital Assignments	...	6

The Graduate College

The purpose of the Graduate College is to serve the needs of college graduates who desire a broader and more thorough knowledge of scholarship and research in their chosen fields. At present the College offers fifty different programs leading to the Master's degree and one program leading to the degree of Doctor of Philosophy.

Master of Education

Programs are planned on an individual basis, and are designed primarily for teachers who intend to qualify for various administrative positions in public school systems. Candidates for this degree are advised to spend at least one Summer Session in residence, as a wider selection of advanced courses in Education is available in summers than in regular sessions.

Master of Arts in Teaching

This degree is unusually appropriate for teachers who are interested primarily in increasing their knowledge of their subject matter fields and thereby the effectiveness of their classroom instruction. Programs are offered in the following fields:

Agriculture
Botany
Chemistry
Commercial Subjects
English

French
German
Greek
History
Home Economics

Latin
Mathematics
Music
Physics
Spanish
Zoology

Master of Science

Programs are offered in the following fields:

Agricultural Biochemistry
Agricultural Economics
Agronomy
Animal and Dairy Husbandry
Animal Pathology
Bacteriology
Biochemistry
Botany

Chemistry
Commerce
Electrical Biophysics
Electrical Engineering
Forestry
Geology
Histology
Horticulture

Medical Electronics
Mechanical Engineering
Microbiology
Pathology
Pharmacology
Physics
Physiology and Biophysics
Zoology

Master of Arts

Programs are offered in the following fields:

Economics
English
French
German
Greek

History
Latin
Mathematics
Music

Political Science
Psychology
Spanish

Doctor of Philosophy

A Doctoral program is offered for qualified students in the field of Biochemistry.

Admission

Students seeking admission to the Graduate College must make application to the Dean of the Graduate College. Admission is limited to (a) students who intend to become candidates for advanced degrees (other than Doctor of Medicine) either at the University of Vermont or at other fully accredited institutions, and (b) students whose entire enrollment will consist of courses to be taken for graduate credit. Students who do not intend to become candidates for advanced degrees and students who hold Bachelor's degrees but who will enroll in undergraduate courses should enroll as special students in the appropriate undergraduate college.

In order to be admitted to the Graduate College an applicant should hold a Bachelor's degree from a fully accredited college or university and his undergraduate record must show that he is capable of successful work at the graduate level. An applicant should be prepared to submit to the Dean, along with a transcript of his undergraduate record, his scores attained in the Graduate Record Examinations, though this latter requirement may be waived in individual cases by the Dean or the department concerned. Full information concerning these examinations may be obtained from the Educational Testing Service, 20 Nassau Street, Princeton, New Jersey.

Graduates of four-year institutions which are not yet fully accredited may be admitted to the Graduate College only if their undergraduate record and Graduate Record Examination scores show unusual promise.

Only applicants who desire to work along lines in which the University offers graduate programs will be admitted to the Graduate College. Students in the Graduate College therefore fall into three categories: (1) duly admitted students accepted to candidacy, (2) degree candidates at other institutions who work at the University of Vermont for transfer of credit, (3) duly admitted students not yet accepted to candidacy. A graduate student whose work is unsatisfactory may be requested at any time by the Dean or the department concerned to withdraw from the Graduate College.

Admission to the Graduate College does not mean that a student is automatically accepted as a candidate for an advanced degree.

College Regulations Concerning Masters' Degrees

Acceptance to Candidacy

Applications must be made on forms supplied by the Dean's office, and must be approved both by his office and by the department concerned. Acceptance to candidacy is granted only in cases where the student has fully met all undergraduate prerequisites in his chosen field of concentration and has demonstrated to the full satisfaction of the department concerned his capacity for successful study at the graduate level. Not until a student has been accepted to candidacy is the department obliged to help plan his over-all degree program, supervise his research, and so forth. Students are therefore advised to apply for acceptance to candidacy as soon as they become eligible for acceptance.

Minimum Residence Requirements

Each candidate for a Master's degree must satisfactorily complete at least twenty hours of graduate credit while in residence at The University of Vermont, either in the regular academic year or in summer sessions.

Maximum Time Limits

A program leading to the Master's degree must be completed within a span of three years if carried on during the regular academic year; if the program is carried on during summer sessions, it must be completed within a span of seven years. Only in special cases will credits earned outside these time limits be re-evaluated and accepted; requests for such re-evaluation must be addressed to the Dean and must be accompanied by a full statement of the extenuating circumstances. This time limit applies both to study at the University of Vermont and to courses taken in other institutions and presented for transfer of credit. For students whose graduate work has been interrupted by service in the armed forces the time limits are extended automatically by the length of time of such service.

Transfer of Credit

Not more than eight semester hours of credit (or the equivalent thereof) for graduate courses taken in other institutions can be transferred for credit toward the Master's degree. Such courses must have been taken in a fully accredited college or university which offers graduate study and must be acceptable at that institution in partial fulfillment of its requirements for an advanced degree. Credit cannot be transferred for (1) courses which would not, if taken at the University of Vermont, receive graduate credit, (2) courses in which a grade lower than 82 per cent (B-) was received, (3) extension courses, (4) correspondence courses, (5) courses which are inappropriate for inclusion in any Master's program offered by the University of Vermont.

Extension Courses

Not more than eight semester hours of credit toward the Master's degree may be earned by taking extension or adult education courses offered by the University of Vermont. Graduate credit cannot be given for courses which would not offer graduate credit if given in regular or summer sessions at the University of Vermont. Only students whose academic qualifications would qualify them for admission to the Graduate College can be granted full graduate credit for work done in extension courses. Therefore students seeking graduate credit for extension courses who have not been admitted to the Graduate College must have their academic credentials approved by the Dean before graduate credit can be granted.

General Academic Requirements for Masters' Degrees

A total of thirty semester hour credits is the minimum number required by the Graduate College for the Master's degree, of which at least fifteen must be earned in formal courses and seminars. Some departments require more than this minimum. Credit for the preparation of a thesis under the direction of the

particular department, when required, is included in the minimum number of required credit hours.

Each student must maintain an average of 85 (B). A course in which a grade lower than 82 (B-) is received will not be accepted in partial fulfillment of requirements for an advanced degree. Certain departments require a higher average than the 85 specified above and students are apprised of this before their first enrollment in those departments.

Master of Arts and Master of Science

FIELD OF SPECIALIZATION In judging the attainments of candidates, great emphasis is placed upon ability to do original research in the chosen field of specialization. Hence the number of courses required will vary with the preparation and needs of the individual student. In order to plan his individual program, a new student should consult as early as possible with the chairman of the department in which he is specializing.

At least twenty hours of graduate credit (including credit for the thesis and research leading to the thesis) must be earned in the field of specialization. All course credits included in these twenty hours must have been earned in courses which are numbered above 200.

THESIS Each candidate will undertake a problem of original research under the direction of a member of the department in which he is specializing. At the conclusion of the investigation the student must present a thesis which embodies the results of his work and which demonstrates his capability for independent research. The original copy of this thesis must be presented to the Dean for deposit in the University Libraries; some departments require that additional copies be presented to the department. The number of credit hours to be earned in thesis research varies between six (minimum) and fifteen (maximum), the precise number being decided on an individual basis by the department concerned.

RELATED STUDY Usually a graduate program will include advanced courses outside the field of specialization. In order to be included as part of the Master's program these supplementary courses must be approved by the department in which the student is specializing. These courses need not necessarily be courses numbered above 200, but under no circumstances can credit earned in a course numbered below 100 be included in the minimum thirty hours required of M.A. and M.S. candidates.

Master of Education

The graduate program of each student admitted to candidacy for the degree of Master of Education is planned and supervised by an individual committee, which includes *ex-officio* the Deans of the Graduate College and the College of Education. A graduate program is planned in view of a student's undergraduate curriculum and in the light of his aims and purposes in pursuing the Master's degree. Programs are planned in such a way that their subject matter will be concentrated as far as possible within a general area of study. Each program must include at least thirty semester hours of approved course work, and if a student's preparation is inadequate for him to begin study at the graduate level

in certain aspects of his program, additional undergraduate courses will be required.

Except under most unusual circumstances, a candidate will be required to present evidence of a full year of successful teaching experience before he will be considered eligible for acceptance to candidacy for the Master of Education degree.

Master of Arts in Teaching

A minimum of thirty semester hours of graduate study is required, of which not less than six semester hours shall be in Education. Apart from this requirement, a student will specialize in a single department offering courses numbered above 200 or in any acceptable combination of such departments. In order to be accepted to candidacy for this degree, a student must have completed an undergraduate major within the area of his specialization and must be acceptable to the department or departments concerned.

In his undergraduate and graduate work a student must complete eighteen semester hours in Education which must include the following courses or their equivalent: History or Philosophy of Education, General Methods and Procedures, Student Teaching, and Educational Psychology or Principles of Education.

Final Examinations

The examinations culminating the program of graduate study for the Master's degree are as follows:

- I. *For the Degrees of Master of Arts and Master of Science:*
 - a. A written comprehensive examination (two hour minimum) in the field of specialization.
 - b. An oral examination (one hour minimum) on the thesis.
 - c. If required by the department in which the candidate is specializing, a written examination in a field related to the field of specialization.
- II. *For the Degree of Master of Education:*
 - a. A written comprehensive examination (three hour minimum) in the field of Education.
 - b. A comprehensive oral examination (one hour minimum) in the field of Education.
- III. *For the Degree of Master of Arts in Teaching:*
 - a. A written comprehensive examination (two hour minimum) or a comprehensive oral examination (one hour minimum) in the field of specialization. The choice between written and oral examination is to be determined by the department after consultation with the candidate.
 - b. A written comprehensive examination (two hour minimum) in the field of education.

Success in the written examinations is prerequisite to taking the oral examinations. One re-examination only is permitted for any final comprehensive examinations.

Professional Degrees in Engineering

The advanced degrees of Civil Engineer, Mechanical Engineer, and Electrical Engineer will be granted only to engineering graduates of the University of Vermont. At least four years must have elapsed since the candidate graduated. For at least three years the candidate must have held positions of responsibility in his profession and have shown ability to design and execute important engineering work.

At least six months before the end of the year in which the degree is sought the candidate must present to the Dean of the Graduate College a statement of his technical training and experience, together with the topic upon which he proposes to submit a thesis. The thesis must embody the results of original investigation upon some technical subject. The professional record and thesis topic must be approved by the College of Technology and by the Executive Committee of the Graduate College.

The thesis must be presented to the Dean of the Graduate College not later than three weeks prior to commencement. The thesis must then be approved by the College of Technology and by the Executive Committee of the Graduate College.

College Regulations Concerning the Degree of Doctor of Philosophy

At the present time the University of Vermont offers only one academic program leading to the degree of Doctor of Philosophy. The program is offered to students who specialize in the field of Biochemistry.

Acceptance to Candidacy

In addition to being fully eligible for acceptance to candidacy for a Master's degree (cf. p. 74), a student must have completed satisfactorily one year of graduate study at the University of Vermont before he is eligible for acceptance to candidacy for the degree of Doctor of Philosophy.

Studies and Thesis Committees

Upon admission to candidacy, the candidate for the Ph.D. degree will be assigned a Studies Committee by the Dean of the Graduate College. This Committee will meet at least once a semester with the candidate to advise him and to help plan his program of study. All courses taken in the program must be approved by this Committee, the department chairmen concerned, and the Dean of the Graduate College. This Committee will also be responsible for administering and evaluating language examinations and the written comprehensive examination.

Upon submission of the completed thesis, the Dean of the Graduate College will appoint a Thesis Committee for the oral examination of the candidate. The Committee shall consist of the Dean, the members of the Studies Committee, and at least two other interested faculty members. The acceptability of the thesis and the number of credits to be awarded for it will be determined by the Thesis Committee.

Transfer of Credit

Not more than twenty-five hours of credit for appropriate graduate courses taken in residence at other institutions will be acceptable for transfer into a Doctoral program.

Minimum Academic Requirements

The degree of Doctor of Philosophy requires of candidates who specialize in Biochemistry a minimum of seventy-five credit hours to be earned in courses and in thesis research.

COURSES At least fifty hours must be earned in courses. Required courses include Biochemistry 201-202, Agricultural Biochemistry 252 and 253, and Seminars (20 hours); at least 10 additional hours must be earned in each of the following areas: (a) additional courses in Biochemistry and Agricultural Biochemistry, (b) graduate courses offered by the Department of Chemistry, and (c) graduate courses offered by Departments other than Agricultural Biochemistry, Biochemistry, and Chemistry.

RESEARCH AND THESIS Each candidate, while in residence at the University of Vermont, must complete an acceptable original research project which contributes new knowledge or techniques in his academic field. Fifty printed copies of the thesis or one microfilm copy must be deposited in the University library. If the thesis should be published in slightly abbreviated form, as an article in a scientific journal, fifty reprints of the article will be acceptable if the candidate is the senior author. Whichever option is selected, the candidate must also be prepared to submit three bound type-script copies of the completed thesis to the Dean of the Graduate College. A minimum of twenty credits and a maximum of thirty credits will be allowed for thesis research.

FOREIGN LANGUAGES The candidate must demonstrate the ability to comprehend the contents of scientific articles from the field—written in German and in one other foreign language—not later than one year after acceptance to candidacy.

EXAMINATIONS

- (a) A comprehensive written examination in the field of study must be passed by the candidate at least one semester prior to the semester in which the thesis is submitted.
- (b) An oral examination, in which the candidate will be expected to defend his thesis, will be scheduled no sooner than one month after the three copies of the thesis have been submitted to the Dean of the Graduate College.

Expense and Financial Aids

For residents of Vermont, tuition fees are \$15 per credit hour of enrollment, with a maximum tuition charge of \$172.50 in any given semester. For non-residents of Vermont, the fees are \$35 per credit hour, with a semester maximum of \$417.50. A tuition fee of \$25 is charged each graduate student who has completed all course requirements and has already paid tuition charges for the credit hours to be earned in thesis research, and who is in residence for the purpose of completing his thesis.

For information concerning other fees and costs, see the index. Graduate students may receive financial aid on the same basis as undergraduate students. Details are given under "Student Aid," for which also see the index.

Fellowships

The Graduate College offers each year three Graduate Fellowships, each of \$400 plus a tuition scholarship, which are open to applicants in any field in which the University offers a full graduate program. Holders of Graduate Fellowships are expected to carry a full-time graduate program towards an advanced degree. Applications for Graduate Fellowships should be addressed to the Dean and must be completed not later than March 15 of the academic year preceding the year for which the application is made.

The George H. Walker Dairy Fellowship is awarded every third year, the next award to be made in 1958-59. It provides a stipend not less than \$700, plus a tuition scholarship. It is available to graduate students who during their undergraduate courses have studied "agriculture, chemistry, and bacteriology" and who desire to study the problems relating to the production of a sanitary milk supply on comparatively small plants and farms. Applications should be addressed to the Chairman of the Department of Animal and Dairy Husbandry.

Assistantships

The University of Vermont offers a number of assistantships in teaching and research. The stipends are \$1,800 for an appointment of nine months duration and \$2,100 for an appointment of eleven months. Graduate assistants are awarded scholarships to cover tuition up to twelve hours a semester; they are eligible also for reappointment for a second year.

A maximum of half-time assistance in the department is expected of a graduate assistant, and he must expect that more than one academic year will be necessary to complete the requirements for his Master's degree. If a graduate assistant is a candidate for the Ph.D. degree, he must expect to spend at least four calendar years before his academic program can be completed. While it is customary, it is not obligatory that graduate assistants select their fields of concentration in the departments in which they are appointed assistants; for example, foreign-born students appointed assistants in the Department of Romance Languages may be accepted as degree candidates by the Department of English.

Applications for assistantships should be addressed to the chairman of the department concerned and should be filed not later than March 15 of the academic year preceding that for which the application is made. Assistantships for the year 1958-59 are offered by the following departments: Agricultural Biochemistry, Agricultural Economics, Agronomy, Animal and Dairy Husbandry, Bacteriology, Biochemistry, Botany, Chemistry, Horticulture, Mathematics, Pathology, Pharmacology, Physics, Physiology and Biophysics, Romance Languages, and Zoology.

The College of Medicine

Requirements for Admission

The scholastic requirements for admission to the College of Medicine are four years of college work done in an institution listed among the "Approved Colleges of Arts and Sciences," compiled and published by the Council on Medical Education and Hospitals of the American Medical Association. The College of Medicine requires one year each of: Biology, English, Physics (including laboratory), General Chemistry, Organic Chemistry, Quantitative Chemistry (a satisfactory one-semester course).

The College strongly recommends additional courses in English, Mathematics (at the college level), and in such other subjects as will tend to provide the student with a broad cultural background aimed at individual scholarship and the development of one or more fields of interest early in his academic career.

Students must complete satisfactorily all requirements for admission to the College of Medicine in any given year by July 1 preceding the September admission. Ordinarily courses taken in other than a liberal arts college will not meet the admission requirements.

Eligibility for admission to the College of Medicine of an applicant is determined by the Admissions Committee of the College of Medicine on the basis of the following:

1. The scholastic record of the applicant in his premedical work.
2. Personality and general fitness of the applicant for the study and practice of medicine as determined by recommendations of the applicant's college teachers and others, and by personal interview with the Admissions Committee.
3. The applicant's scores on the Medical College Admission Test. Such scores are taken into consideration but are not used as a final determinant in accepting students.

A maximum of fifty students is admitted to the entering class. Preference for admission is according to the following priorities:

1. Qualified residents of Vermont.
2. Qualified residents of the other New England states, especially those from Maine and New Hampshire.
3. Qualified residents of other areas.

Sons and daughters of the alumni of the College of Medicine of the University of Vermont are given special consideration within the framework of the above policy.

Applications for admission to the class entering in September of any year will close January 1 preceding the September admission. Application blanks should be in by December 1 for early consideration.

An application fee of ten dollars, payable to The University of Vermont and State Agricultural College, must accompany all applications and is not refundable.

The Curriculum

FIRST YEAR Anatomy, physiology and biochemistry are integrated in such a fashion that topics are considered simultaneously by all departments in so far as possible. Thus when the abdomen is being dissected, the physiology of the gastro-intestinal system and the biochemistry of digestion are being considered at the same time. A course in psychobiology includes lectures, moving pictures and discussion. Small informal discussion groups which meet with the dean and the secretary of the faculty are supported by the Lamb Foundation.

SECOND YEAR The curriculum is divided into three parts and correlated in time.

Course A—Morphology, Physiology, and Chemistry of the Abnormal—runs throughout the entire year and includes pharmacology, pathology, clinical pathology, psychopathology, and public health. A conjoint course meets once a week during the second semester in an attempt to relate certain aspects of clinical medicine to the preclinical sciences.

Course B—Elicitation of Data—includes history taking and examination which are taught cooperatively by the various specialists under the general supervision of an internist. This is given in the second semester only.

Course C—Introduction to Clinical Medicine—consists of didactic lectures and case presentations covering elementary medicine, pediatrics, surgery, obstetrics, gynecology and oral medicine, and is given in the second semester.

The schedule varies from week to week because the subject material presented by the different departments is correlated.

THIRD YEAR A clinical clerkship divided into four quarters is conducted from September to the following August. One half of the year is devoted to medicine and pediatrics but included in this period are clinical conferences, discussion groups, and field trips covering preventive medicine, psychiatry, dermatology, radiology, and ophthalmology. Limited responsibility for and observation of patients in the two local hospitals are the primary activities. Rounds, tutorial sessions, and informal conferences are held. The third quarter includes a clerkship on surgery with clinical conferences for the students in neurosurgery, otolaryngology, clinical surgery, orthopedic surgery, and surgical pathology. Teaching is accomplished by tutorial instruction, rounds, staff conferences and operating room work. The final quarter is a clerkship in obstetrics and gynecology, including tutorial instruction, ward, delivery and

operating room experience. Manikin work, conferences, rounds, tutorial sessions, and sessions with fresh gynecological pathological material are included.

FOURTH YEAR This year includes further general hospital and specialty hospital experience and, in addition, experience in the care of the ambulatory patient. Seniors attend school from September to June. They are given increasing responsibility, live at general hospitals outside of Burlington, but are supervised by staff members. Tuberculosis and psychiatric specialty hospitals are included in the rotation program. Ambulatory patient service is experienced in the Burlington Free Dispensary (operated by the College of Medicine), in the outpatient departments of the general hospitals, on home care visits, and during preceptorships with general practitioners.

All of the usual medical specialties are represented including mental hygiene clinics and cerebral palsy clinics.

The curriculum is not static and an active curriculum committee is meeting continually to evaluate the present curriculum and plan changes.

Teaching Facilities

The College of Medicine Building and the College of Medicine Annex contain offices, lecture rooms, medical library, student and research laboratories. Clinical facilities for teaching in the third and fourth years include the two Burlington hospitals with a total of 420 beds (not including bassinets) and 121,039 patient days. Five general and four specialty (tuberculosis and psychiatric) hospitals in Vermont and New York State with a total bed complement of 3,213 are used.

In Burlington there are three outpatient departments with 15,613 patients visits annually, and the Home Care Service with 5,759 home visits annually. Elective preceptorships with general practitioners are available.

The University Extension

The University through its extension services aims to broaden the horizon of those who have not attended college and to afford an opportunity for those who have attended college to keep in touch with academic thought in their favorite fields or to gain information about subjects which were not studied in college.

The Summer Session

Summer Session offers courses on both the graduate and undergraduate level in many subjects, including art, botany, chemistry, commercial subjects, conservation, dramatic art, economics, education, English, French, geography, German, history, home economics, mathematics, music (instrumental and vocal), philosophy, physical education, physics, political science, psychology, Spanish, speech and zoology.

The offerings are diversified to meet the needs of the following various groups of students: those with adequate preparation who desire courses leading to a Bachelor's degree; those with adequate preparation who wish to do graduate work for the Master's degree; principals and superintendents of schools who desire fundamental or specialized courses in the fields of educational administration and supervision; teachers in elementary or secondary schools who seek credit toward State teachers' certificates or who desire to broaden their knowledge of special subjects; persons who desire college level courses for self-improvement. Students must have sufficient maturity and background to profit from the courses in which they enroll.

Through work in the Summer Session it is possible to earn the degrees of Master of Arts, Master of Science, Master of Arts in Teaching, and Master of Education. A special bulletin giving a full description of courses will be sent upon application to the Director of the Summer Session.

Adult Education

Continuing education for adults in the State of Vermont is provided under the Adult Education Program offered by the University. Members of the faculty at the University and others working under temporary appointment offer evening or extension courses in arts and sciences and education. A variety of courses is presented in evening sessions on campus throughout the college year. Some of these may be taken for credit while others are non-credit and are designed for the adult who is interested in continuing his education for the pleasure of self-improvement.

Courses are given in towns and cities throughout the state wherever a group of ten or more individuals register for a course.

Arrangements for Adult Education courses are made through the Adult Education Office, 147 Waterman Building. Length of courses varies from five to eighteen weeks.

Any person taking a course for credit towards a degree at the University is advised to secure the approval of the appropriate dean. All persons desiring graduate credit must secure the approval of the Dean of the Graduate College.

Audio-Visual Services

The Vermont Film Library, operated by the Department of Audio-Visual Services, and jointly sponsored by the State Department of Education and the University, serves the schools, colleges, churches, societies, and individuals of the State by making materials for visual education programs available for their use on a rental or membership basis. The library owns over 1,200 sound 16mm films suited to age levels from grade one to adult, produced by companies who specialize in educational films; 1,200 $3\frac{1}{4}$ x 4 slides on Vermont history, United States history, biology and ethnology; a collection of 2 x 2 slides on contemporary American art; over 100 filmstrips on aviation and mechanical education, the United Nations organization and other subjects. The Services Department provides equipment and projectionists for college classroom use and rents to other nearby groups. Consultation on audio-visual materials and their sources is also available.

The Government Clearing House

The purpose of the Government Clearing House is to promote a practical approach to the study of government by students in the University and also to provide information relative to problems of government, upon request, primarily to town and city officials in the State, but also to officials of other government units and to private citizens.

The Clearing House cooperates with such organizations as the New England Council in sponsoring such activities as the annual "Town Report Contest." It also cooperates with the Governor and other state officers in sponsoring the annual Town Officers' Educational Conferences. A Public Affairs Library is maintained as a memorial to the late James P. Taylor whose efforts to expand citizen interest in good government is well known throughout the State.

Conferences

Conference activity is a rapidly increasing part of University life, both throughout the regular college year and during the summer, when many conference groups make use not only of University classroom and auditorium facilities but also of University dormitories and dining service. Groups interested in arranging for meetings or conferences at the University should contact the Director of Public Relations, 111 Waterman Building.

Annually, in March, the University joins with the Champlain Valley Teachers Association in sponsoring an educational conference for teachers and school administrators. Nationally-known educators and speakers from various fields and professions are made available to Vermont teachers through this cooperative sponsorship.

During the summer of 1958, from August 10-16, the University will be host to the International Congress of Radiation Research.

Courses of Instruction

The several departments are arranged alphabetically, and the college in which each is located is indicated.

A separate number is used for each semester course and for each semester of a year course. The form 17, 18 indicates that the separate semesters may be taken independently for credit, while 17-18 indicates that they may not be taken independently for credit and, unless otherwise stated, must be taken in the sequence indicated.

Courses numbered from 1 to 99 are elementary and intermediate courses. Those numbered from 100 to 199 are advanced undergraduate courses; those numbered from 200 to 299 are advanced courses for undergraduates which also may be taken for graduate credit by duly qualified graduate students. Courses numbered above 300 are limited to graduate students.

Courses bearing odd numbers are offered the first semester; even numbers the second semester, unless otherwise indicated when the Roman I (first) or II (second) is used.

The letter "S" preceding the course number indicates the course is offered normally in the Summer Session.

The letter "A" preceding the course number indicates the course is offered normally in the Adult Education program.

The number of credit hours *per semester* is indicated in each course description.

In some instances, a form such as (2-3) immediately follows the course title. This indicates the number of class hours respectively of lecture or recitation and of laboratory.

Agricultural Biochemistry

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Associate Professor Johnstone (Acting Chairman); Professor Little; Assistant Professor Foote

171 ELEMENTARY BIOCHEMISTRY (3-4) An introductory treatment of the chemistry of carbohydrates, proteins, lipids, enzymes, vitamins, and hormones and their relation to processes of biological significance. The basic principles of analytical procedures involved in biochemical methods will be included. *Prerequisite:* Chemistry 131-132 or 35. Five hours. Mr. Foote.

197, 198 SENIOR RESEARCH Each student works on a research problem under the direction of a qualified staff member and submits the findings in writ-

ten form as prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

252 PLANT BIOCHEMISTRY An intensive study of the chemical reactions, compounds, and energy relationships pertinent to the survival and function of living cells. The dependence of such cells upon energy obtained from the environment is emphasized during a consideration of photosynthesis and metabolism. The chemical structure of plant products and genetic materials is discussed. *Prerequisite:* Chemistry 131-132 or permission of the department. Three hours. Mr. Little. (Offered in alternate years, 1959-60.)

253 MICROBIAL BIOCHEMISTRY (2-3) An advanced course dealing with the chemical composition, energy utilization and metabolism of microbial cells. *Prerequisite:* Botany 116; Chemistry 131-132 or 35 and departmental permission. Three hours. Mr. Johnstone. (Offered in alternate years, 1959-60.)

254 MODERN BIOCHEMICAL TECHNIQUES (1-4) Laboratory work and supplementary lectures on radioisotopic tracer techniques, paper chromatography, radio-autography and biochemical preparation. *Prerequisite:* Biochemistry 171 or 252 or Medical Biochemistry 201. Three hours. The staff. (Offered in alternate years, 1959-60.)

381-382 GRADUATE SEMINAR A topical seminar with discussion of assigned and collateral reading. Required of graduate students in agricultural biochemistry. One hour. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

395, 396, 397, 398, 399 DOCTOR'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Agricultural Economics

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Professor T. M. Adams (Chairman); Associate Professor Tremblay; Assistant Professors Sinclair and Webster; Messrs. Bevins and Tompkins

2 WORLD AGRICULTURE (2-2) Historical development and pattern of agriculture up to the present day with emphasis on the adjustment of agriculture to natural and economic phenomena. Present pattern of crop and livestock production, trade, and consumption in Vermont, the United States, and the world. Three hours. Mr. Tremblay.

21 AGRICULTURE COOPERATION The nature and development of cooperative business enterprises, their organization, financing, and business management. *Prerequisite:* sophomore standing. Two hours. Mr. Adams.

22 AGRICULTURAL BUSINESS (2-2) Management problems of rural business firms, especially those handling farm produce and supplies. Theoretical and practical considerations in the organization and operation of agricultural businesses with special emphasis on financial and legal organization, accounting

and budgeting procedures, and tax policies. *Prerequisite:* sophomore standing. Three hours. Mr. Bevins.

103 RURAL SOCIOLOGY A study of the origin, characteristics, forms of organization, levels of living, mobility, and geographic distribution of rural people, and their relationship to urban society. *Prerequisite:* junior standing or permission of the department. Three hours. Mr. Tompkins.

108 FARM CREDIT (2-2) The types and sources of credit used by farmers, and the lending practices and problems of credit agencies. Appraisal of farm real estate and personal property. *Prerequisite:* junior standing. Three hours. Mr. Sinclair.

197, 198 SENIOR RESEARCH Each student works on a research problem under the direction of a qualified staff member and submits the findings in written form as prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

201-202 FARM MANAGEMENT (2-2) The organization and operation of a successful farm business. *Prerequisite:* Economics 11-12 and senior standing. (Agricultural Education option, junior year.) Three hours. Mr. Tremblay.

204 MARKETING FARM PRODUCTS (2-2) The distribution of farm products and the problems involved, with particular emphasis on the Vermont situation. *Prerequisite:* Economics 11-12. Three hours. Mr. Webster.

206 PUBLIC PROBLEMS OF AGRICULTURE Price fluctuations as they affect farming, agricultural legislation, land use, costs of local government, and other problems of contemporary interest to farmers. *Prerequisite:* Economics 11-12. Three hours. Mr. Adams.

251, 252 RESEARCH METHODS Efficient procedures for students engaged in scientific research. *Prerequisite:* Economics 11-12; senior standing and permission of the department. Three hours. Mr. Webster.

254 THEORY OF AGRICULTURAL PRODUCTION ECONOMICS The application of the theory of the firm to agricultural production units with special emphasis on resource allocation and production efficiency. Principles of marginal analysis will be applied to production problems in a static and dynamic economy. *Prerequisite:* twelve hours in agricultural economics and/or economics, senior standing, and permission of the department. Three hours. Mr. Sinclair.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Agricultural Education

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Assistant Professor Julson (Chairman); Mr. Davison

100 RURAL EDUCATION (2-2) The organization of rural education with emphasis on current problems. *Prerequisite:* junior standing. Three hours. Mr. Julson.

102 EXTENSION METHODS (1-2) Methods and techniques of extension teaching. *Prerequisite:* junior standing. Two hours. Mr. Davison. (Offered in alternate years, 1959-60.)

155 DIRECTED PRACTICE TEACHING IN VOCATIONAL AGRICULTURE Practice teaching for a ten-week period in selected high school departments of vocational agriculture under the guidance of experienced critic teachers and the teacher trainer. *Prerequisite:* 251 and 253 or permission of the department. Eight hours. Mr. Julson.

251, 252 METHODS OF TEACHING VOCATIONAL AGRICULTURE (2-2) First semester: determining needs and objectives. Planning and maintaining facilities for vocational high school students. Selecting, planning, and supervising farming programs of all-day students. Planning course materials and teaching all-day students. Advising an FFA chapter. Second semester: establishing and maintaining relationships in-school and out-of-school. Providing guidance, placement, and follow-up. Organizing and using advisory groups. Managing a department. Discharging professional responsibilities. Evaluating programs of vocational agriculture. *Prerequisite:* senior standing; 100 or permission of the department. Three hours. Mr. Julson.

253 METHODS OF TEACHING YOUNG AND ADULT FARMER CLASSES IN VOCATIONAL AGRICULTURE (2-2) Determining needs and establishing objectives for the education of young and adult farmers. Planning courses and teaching classes. Providing on-farm instruction. Evaluating instruction. Advising related organizations. Using advisory groups in adult farmer education. *Prerequisite:* senior standing; 102 or permission of the department. Three hours. Mr. Julson.

301, 302, 303, 304 RESEARCH IN AGRICULTURAL EDUCATION Investigation of a research topic under the direction of an assigned staff member. Credit as arranged.

Agronomy

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

*Professor Midgley (Chairman); Associate Professor Wood; Assistant Professors
Flanagan and Gingrich*

1 GENERAL FARM CROPS Introduction to field, forage and pasture crops common in Vermont and the United States, including production, management and uses. *Prerequisite:* Botany 1 or permission of department. Three hours. Mr. Wood.

2 GENERAL SOILS An introductory course dealing with the origin, formation, and classification of soils; elementary principles of fertility and management. Three hours. Mr. Gingrich.

21 FIELD CROPS (2-2) The theory and practice of producing, improving and managing field crops. *Prerequisite:* Botany 1 or permission of department. Three hours. Mr. Flanagan. (Offered in alternate years, 1959-60.)

22 FORAGE AND PASTURE CROPS (2-2) The theory and practice of producing, improving and managing forage and pasture crops including study of

silage and hay making. *Prerequisite:* Botany 1 or permission of department. Three hours. Mr. Wood.

101 FERTILIZERS Principles of plant nutrition, nutrient deficiency symptoms, grade formulation, rates and ratios for specific crops. *Prerequisite:* 2; junior standing. Two hours. Mr. Flanagan. (Offered in alternate years, 1958-59.)

153 SOIL CONSERVATION (2-2) A study of erosive forces and the physical properties, tillage, and management of soils, and of crops as applied to soil conservation. *Prerequisite:* 2; junior standing or permission of the department. Three hours. Mr. Flanagan.

197, 198 SENIOR RESEARCH (0-3) The student works on a research problem under the direction of a qualified staff member and submits the findings in a written form prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

224 SOIL SCIENCE AND MANAGEMENT (3-2) The geology, physics, chemistry, fertility, and biology of soils. *Prerequisite:* 153; Chem. 21-22 or 35. Four hours. Mr. Midgley.

281, 282 AGRONOMY SEMINAR Discussion of agronomic topics. Students are required to present papers on selected subjects. *Prerequisite:* senior or graduate standing or permission of the department. One hour. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Air Science

AIR FORCE ROTC

Lt. Col. Fishburne (Chairman); Major McGaubey; Captains Allen, Aldrich, Johns, and Stenquist

1-2 FOUNDATION OF AIR POWER A general survey of air power designed to provide the student with an understanding of the elements of air power and basic aeronautical science. Two hours.

11-12 THE ELEMENTS AND POTENTIALS OF AIR POWER Elements of aerial warfare; introduction to Air Force aircraft, weapons, targets, and air bases; careers in the Air Force; cadet noncommissioned officer training. Two hours.

101-102 THE AIR FORCE OFFICER IN THE AIR AGE Introduction to advanced AFROTC; the Air Force commander and his staff; communicating and instructing process; AF correspondence; military laws, courts and boards; applied air science and air doctrine; aircraft engineering; air navigation; meteorology; leadership laboratory. Three hours.

111-112 LEADERSHIP AND AIR POWER CONCEPTS Seminar on leadership concepts; career guidance; military aviation and the evolution of warfare; military aspects of world political geography; briefing for AF commissioned service; leadership laboratory. Three hours.

Animal and Dairy Husbandry

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Professors Riddell (Chairman) and Bradfield; Assistant Professors Atherton, Balch, Fitzsimmons and Smith

1 GENERAL DAIRYING (2-3) Introductory course in dairy cattle management and judging; quality milk production; Babcock test. Three hours. Messrs. Bradfield and Fitzsimmons.

2 LIVESTOCK OTHER THAN DAIRY (1-3) Types, breeds, and market classes. Two hours. Mr. Balch.

21 MILK AND MILK PRODUCTS (2-0) Introduction to products made from milk. History, development, role of these products in the dairy industry, markets and principles of processing. *Prerequisite:* sophomore standing. Two hours. Messrs. Atherton and Bradfield.

44 ADVANCED STOCK JUDGING (0-6) Judging, fitting and showing, with emphasis on dairy cattle. *Prerequisite:* 1. Two hours. Messrs. Fitzsimmons and Balch.

93 LIVESTOCK PRODUCTION (2-3) Production and management of horses, sheep, swine and beef cattle. *Prerequisite:* 2. Three hours. Mr. Balch.

104 CHEMISTRY AND TESTING OF DAIRY PRODUCTS (2-3) Chemical and physical properties of milk and milk products. Standard methods of analysis. *Prerequisite:* Chem. 1-2. Three hours. Mr. Atherton.

105 FEEDS AND FEEDING (3-3) Feeds, rations and feeding practice. *Prerequisite:* junior standing. Four hours. Mr. Smith.

109 DAIRY BACTERIOLOGY (1-4) Relation of microorganisms to milk and milk products, methods of examination and control. *Prerequisite:* Botany 116. Three hours. Mr. Atherton.

116 DAIRY PLANT ENGINEERING (2-2) Theory and practical problems in selection and use of dairy processing equipment. *Prerequisite:* Physics 5; junior standing. Three hours. Mr. Bradfield, in conjunction with the Agricultural Engineering Department. (Offered in alternate years, 1958-59.)

146 BUTTER, CHEESE AND CASEIN (1-6) Theory and practice. *Prerequisite:* junior standing. Three hours. Mr. Atherton. (Offered in alternate years, 1958-59.)

153 MARKET MILK (1-3) Milk handling from farm to consumer. Quality control, processing, cleaning methods. Grade A and Certified Milk. *Prerequisite:* 21, 109; senior standing or permission of department. Two hours. Mr. Bradfield.

197, 198 SENIOR RESEARCH The student works on a research problem under the direction of a qualified staff member and submits the findings in a written form prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

206 ANIMAL NUTRITION Nutrients, their function and utilization, and requirements for growth, reproduction and lactation. *Prerequisite:* 105; Chem. 131-132 or 35. Two hours. Mr. Smith.

211 ICE CREAM (2-3) Principles and practices of ice cream making, including a study of physiochemical and biological factors involved; calculation of formulas; sherbets and specialties; merchandising, soda fountain management and sanitary control. *Prerequisite:* 104, 109 (which may be taken concurrently); junior standing. Three hours. Mr. Bradfield. (Offered in alternate years, 1959-60.)

214 CONCENTRATED DAIRY PRODUCTS (2-3) Methods and technical problems in manufacture and storage of condensed milk and milk powder. Physiochemical characteristics of milk. Thermodynamics of condensing. Distribution and utilization of concentrated milks. *Prerequisite:* 104, 109; junior standing. Three hours. Mr. Atherton. (Offered in alternate years, 1959-60.)

251 DAIRY CATTLE AND MILK PRODUCTION (2-2) Growth and development; physiology of milk secretion; scientific feeding and management of dairy herd. *Prerequisite:* 105; senior standing or permission of department. Three hours. Messrs. Riddell and Fitzsimmons.

254 TECHNICAL CONTROL OF MILK PROCESSING (1-3) Principles and practices of producing high quality milk, cream, cultured and flavored milks; sanitary regulations, laboratory tests and plant management. *Prerequisite:* 153 and 104; senior standing or permission of the department. Two hours. Mr. Bradfield.

260 ANIMAL BREEDING Physiology of reproduction; theory and practical application of genetic principles to breeding of livestock. *Prerequisite:* Botany 105 or Zoology 115; senior standing or permission of department. Three hours. Messrs. Fitzsimmons and Riddell.

281, 282 ANIMAL AND DAIRY HUSBANDRY SEMINAR Reports and discussions of problems and special investigations in selected fields. One-two hours. (Maximum credit 1 hour senior, 3 hours graduate.) The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Animal Pathology

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Professor Bolton (Chairman); Associate Professor Durrell

55 ANATOMY AND PHYSIOLOGY The various anatomical structures and their physiological functions. *Prerequisite:* sophomore standing. Three hours. Dr. Durrell.

56 DISEASES OF FARM ANIMALS The causes, symptoms, and prevention of disease of farm animals. *Prerequisite:* sophomore standing. Two hours. Dr. Durrell.

116 POULTRY SANITATION AND DISEASE CONTROL (3-2) The causes, symptoms, and prevention of parasitic, infectious, and nutritional diseases of poultry. A discussion of the hygienic and sanitary measures used in incuba-

tion, brooding and rearing poultry will be given as indicated. Demonstrations and necropsies. *Prerequisite:* Botany 116. Four hours. Dr. Durrell.

197, 198 SENIOR RESEARCH The student works on a research problem under the direction of a qualified staff member and submits the findings in a written form prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

351, 352 ARTIFICIAL INSEMINATION Theory and fundamentals of microscopic semen analysis and the physiological and related influences on semen efficiency. *Prerequisite:* 55, 56; Botany 116; Chemistry 131-132; graduate standing and permission of the department. Four hours. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Art

COLLEGE OF ARTS AND SCIENCES

Professor Colburn (Chairman); Assistant Professors McCormick and Mills

1 ART IN THE ANCIENT WORLD The principles and cultural significance of painting, sculpture, and architecture from prehistoric through Roman times to ca. 330 A.D., including the ancient art of Egypt, Mesopotamia, Greece, and Hellenistic lands. Three hours. Mr. McCormick. *Prerequisite:* sophomore standing. (Offered in alternate years, 1958-59.)

2 MEDIEVAL ART Art during the Middle Ages, from ca. 330 A.D. to ca. 1400 A.D., in the Byzantine Empire and western Europe. The history of painting, sculpture, and architecture is studied from the viewpoint of (1) the development of art as a vehicle for expressing Christian ideas and (2) the formation of a coherent style from diverse Oriental, classical, and Celto-Teutonic elements. *Prerequisite:* 1 or permission of instructor. Three hours. Mr. McCormick. (Offered in alternate years, 1958-59.)

4 MODERN ART A study and appreciation of contemporary trends in painting and sculpture from the period of French Impressionism, with emphasis upon European influences. *Prerequisite:* sophomore standing. Three hours. Mrs. Mills.

5 RENAISSANCE ART AND ARCHITECTURE The origin and development of the Renaissance in painting, sculpture, and architecture in Italy from ca. 1400-1600 and its spread throughout Europe with particular emphasis on the Lowlands and Germany. The course will focus on such masters as Donatello, Raphael, Michelangelo, Titian, Van Eyck and Durer. *Prerequisite:* sophomore standing or permission of the instructor. Three hours. Mr. McCormick. (Offered in alternate years, 1959-60.)

7 PAINTING IN AMERICA The development of painting in America from colonial times to the present, with emphasis on social and economic forces which at times channelled American artistic expression. *Prerequisite:* sophomore standing. Two hours. Mr. Colburn.

8 **BAROQUE, ROCOCO, AND ROMANTIC ART** The origin and development of the Baroque style in painting, sculpture and architecture in Italy in the 17th century and subsequent flourishing of the style in Spain, France, the Lowlands and England. The Rococo reaction of the 18th century throughout Europe and the early development of Romanticism and Classicism of the late 18th and early 19th century will also be studied. *Prerequisite:* sophomore standing or permission of the instructor. Three hours. Mr. McCormick. (Offered in alternate years, 1959-60.)

11, 12 **ARTS AND CRAFTS** Experiences in functional design using various media to develop good taste and creative ability. Techniques include block-printing, ceramics, and work with metal. A weekly lecture period relates the history and appreciation of arts and crafts to student work. *Prerequisite:* sophomore standing. Three hours. Mrs. Mills.

21-22 **DRAWING AND PAINTING** Composition and painting techniques, with emphasis on a clearer understanding of modern schools of painting and on individual development. To receive credit a student must complete at least two semesters. By permission of the instructor, the course may be taken a second time for credit. *Prerequisite:* junior standing. Two hours. Mr. Colburn.

For courses in Art Education, see Elementary Education 170-171.

Botany

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Professors Marvin (Chairman), Gersboy, Sproston, and Taylor; Associate Professors Johnstone and Raynor; Mr. Vogelmann

1 **INTRODUCTORY BOTANY (2-4)** Fundamental principles of biology illustrated by the morphology, physiology, and reproduction of vascular plants. A study of forms and functions, leading to an understanding of the plant as a dynamic unit. Four hours. I, II. Messrs. Taylor, Marvin, Vogelmann and Miss Raynor. (An equivalent course is offered in Summer Session.)

2 **GENERAL BOTANY (2-4)** A second semester for those desiring a year of botany. Study of plant groups, their relationships to each other. Plant distribution, geographical and historical. The role of plants in the world today. *Prerequisite:* 1. Four hours. Miss Raynor.

S10 **FIELD BOTANY (2-4)** Native plants and their habitats. Field identification and laboratory study. A projected series of courses encompassing the plant kingdom. Four hours. The staff. (Offered in the Summer Session only.)

101 **ECONOMIC BOTANY (2-2)** The relation of plants to human history and contemporary life. Botanical and economic aspects of plants used as sources of foods, drugs, and other products of importance in everyday living. Library study, periodic reports and visits to plant utilizing industries replace formal laboratory work. *Prerequisite:* 1; junior standing or permission of the department. Three hours. Mr. Taylor. (Offered in alternate years, 1959-60.)

102 **MICROTECHNIQUE (1-6)** Preparation and study of microscopic biological material with emphasis on vegetative and reproductive cells and their modifications. Slide making techniques; optics in relation to the microscope. *Pre-*

requisite: 1; junior standing or permission of the department. Four hours. Miss Raynor. (Offered in alternate years, 1959-60.)

103 PLANT PHYSIOLOGY (2-6) Mechanisms of absorption, trans-location, synthesis, and utilization of materials; the role of internal and external factors in growth. *Prerequisite*: 1; Chem. 1-2; junior standing. Five hours. Mr. Marvin. (Offered in alternate years, 1958-59.)

105 GENETICS (2-2) Basic principles and theory of modern plant and animal breeding; elementary concepts of variation, inheritance, biometry, and cytogenetics. (No student may receive credit both for this course and for Zool. 115.) *Prerequisite*: 1; Zool. 1; junior standing or permission of the department. Three hours. Mr. Gershoy. (Offered in alternate years, 1958-59.)

110 TAXONOMY (1-4) Principles of classification; phylogeny of vascular plants with emphasis on the evolution of the angiosperms; the species concept; variation; development and migration of floras; modern techniques and biosystematics. *Prerequisite*: 1; junior standing. Three hours. Mr. Vogelmann. (Offered in alternate years, 1959-60.)

112 ECOLOGY (2-2) Structure and organization of plant communities; succession, climax formations; effect of environmental factors; quadrating and other field techniques. *Prerequisite*: 103 or permission of the department; junior standing. Three hours. Mr. Vogelmann. (Offered in alternate years, 1958-59.)

113, 114 MORPHOLOGY (2-3) Comparative study of the structure, reproduction, and phylogenetic relationships of the major plant groups. First semester: algae, fungi, liverworts and mosses. Second semester: ferns and seed plants. *Prerequisite*: 1. Three hours. The staff. (Offered in alternate years, 1958-59.)

116 GENERAL BACTERIOLOGY (1-4) Principles and techniques employed in the study of micro-organisms, their isolation and culture with reference to human disease and public health; their importance to agriculture, industry and foods. *Prerequisite*: 1 or Zool. 1; Chem. 1-2. Three hours. Mr. Johnstone.

118 PLANT PATHOLOGY (2-0) or (2-4) Diagnosis, life history, and control of plant diseases caused by fungi, viruses, bacteria, nematodes. *Prerequisite*: 1. Two hours, lectures only; four hours, lectures and laboratory. Mr. Sproston.

197, 198 SENIOR RESEARCH The student works on a research problem under the direction of a qualified staff member and submits the findings in a written form prescribed by the department. *Prerequisite*: senior standing. Three hours. The staff.

251 PLANT ANATOMY AND HISTOLOGY (2-4) Development of the organism and accompanying integration of cellular tissues. Ontogeny of vegetative tissues; modifications of the cell wall. *Prerequisite*: 113-114; or permission of the department. Four hours. Mr. Taylor. (Offered in alternate years, 1958-59.)

252 FUNGI (2-4) The reproductive processes of the common molds, yeasts, and actinomycetes and their classification. Physiological studies; antibiotics. *Prerequisite*: 103 or permission of the department. Four hours. Mr. Sproston. (Offered in alternate years, 1959-60.)

254 CYTOLOGY (2-4) The dynamics of the protoplast; nuclear division, gamete formation, syngamy and substitute methods of reproduction. Interrelation of chromosomal and genetic phenomena. *Prerequisite:* 105 or Zool. 115; Chem. 131-132 or 35 or permission of the department. Four hours. Mr. Gershoy. (Offered in alternate years, 1959-60.)

256 CYTOGENETICS (2-4) Normal and aberrant chromosome behavior in relation to genetic ratios, reproductive phenomena and evolutionary development. *Prerequisite:* 105 or Zool. 115; 254 or permission of the department. Four hours. Mr. Gershoy. (Offered in alternate years, 1958-59.)

257 PLANT GROWTH (2-4) The nutrition of plant cells, growth hormones, cyclic variation of environmental factors, morphogenesis. *Prerequisite:* 103 Chem. 131-132 or 35 or permission of the department. Four hours. Mr. Marvin. (Offered in alternate years, 1959-60.)

381, 382 BOTANY SEMINAR A topical seminar with discussion of assigned and collateral reading. Required of graduate students in botany. One hour. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Chemistry

COLLEGE OF TECHNOLOGY

Professors Braun (Chairman) and Gregg; Associate Professors Cook, Crooks, Inskeep and Whitcher; Assistant Professors Brown and Lucarini

Note: Credit cannot be granted for 1-2 and also 11-12; nor for 35 and also 131-132.

1-2 INTRODUCTORY CHEMISTRY (3-3) An introductory course in general inorganic chemistry. Lectures, recitations and laboratory. Acceptable as a prerequisite to advanced courses. *Prerequisite:* at least one year of high school mathematics. Four hours. The staff.

11-12 GENERAL CHEMISTRY (3-6) Lectures, recitations and laboratory, including general experiments in elementary qualitative analysis. Recommended for those concentrating in science. *Prerequisite:* at least one year of high school mathematics. Five hours. Messrs. Inskeep, Crooks and staff.

21-22 ELEMENTARY QUANTITATIVE ANALYSIS (2-6) Introduction to the theory and practice of quantitative methods, both gravimetric and volumetric, including also a theoretical discussion of indicators, buffers and pH. *Prerequisite:* 1-2. Four hours.† Messrs. Whitcher and Lucarini.

35 OUTLINE OF ORGANIC CHEMISTRY (3-4) An introduction to organic chemistry, primarily for students in agriculture, home economics and nursing. *Prerequisite:* 1-2. Five hours. Mr. Crooks and staff.

† May be taken by certain students for three hours credit, with only one three-hour laboratory period.

131-132 ORGANIC CHEMISTRY (3-6)* Organic chemistry for chemistry majors, premedical students and those concentrating in the biological and physical sciences. *Prerequisite:* 1-2; 21-22 recommended. Five hours.‡ Messrs. Braun and Cook and staff.

141-142 PHYSICAL CHEMISTRY (3-6)*§ Introduction to the kinetic theory and its application to gases; thermodynamics and the application to liquids and solutions; chemical equilibria; fundamentals of electrochemistry and atomic structure. *Prerequisite:* Physics 21-22; Math. 12, 21; Chem. 21-22 recommended. Five hours.‡ Messrs. Cook and Inskeep.

Advanced Inorganic Chemistry

108 INORGANIC PREPARATIONS Laboratory preparations of inorganic compounds. *Prerequisite:* 1-2. Two hours. Mr. Crooks.

212 ADVANCED INORGANIC CHEMISTRY A survey of the chemistry of the elements with particular attention to the relation of structure to properties, and to coordination compounds, complex ions, radioactivity, and stereoisomerism. *Prerequisite:* credit or concurrent enrollment in 141-142. Three hours. Mr. Whitcher.

Advanced Analytical Chemistry

221 ADVANCED THEORETICAL CHEMISTRY Selected topics in theoretical chemistry with frequent reference to analytical applications. *Prerequisite:* credit or concurrent enrollment in 141-142. Three hours. Mr. Whitcher.

Advanced Organic Chemistry

230 CHEMISTRY OF THE CARBOHYDRATES Detailed description of the chemistry of the more common carbohydrates, including proofs of structure. *Prerequisite:* 131-132; credit or concurrent enrollment in 141-142. Three hours. Mr. Braun. (Not offered every year.)

231-232 SPECIAL TOPICS IN ORGANIC CHEMISTRY An elaboration of structural and configurational isomerism, modern acid-base theory, molecular rearrangement and organic free radicals. *Prerequisite:* 131-132; credit or concurrent enrollment in 141-142. Three hours. Mr. Gregg. (Offered in alternate years, 1958-59.)

233-234 PHYSICAL ORGANIC Physical organic chemistry, with emphasis on structural aspects and reaction mechanisms. *Prerequisite:* 131-132; credit or concurrent enrollment in 141-142. Three hours. Mr. Cook. (Offered in alternate years, 1959-60.)

236 CHEMISTRY OF CYCLIC COMPOUNDS The chemistry of alicyclic and of the more common heterocyclic compounds. *Prerequisite:* 131-132; credit or concurrent enrollment in 141-142. Three hours. Mr. Braun. (Offered in alternate years, 1958-59.)

* This course is regarded as an advanced course, meeting requirements for concentration in the liberal arts curriculum.

‡ May be taken by certain students for four hours credit, with only one three-hour laboratory period.

§ May be taken without the laboratory work for three hours credit by permission of the department.

237 IDENTIFICATION OF ORGANIC COMPOUNDS (3-8) A discussion of the methods, both chemical and physical, of identifying organic compounds, their separation, and the determination of their functional groups. *Prerequisite:* 131-132; credit or concurrent enrollment in 141-142. Five hours. Mr. Braun and staff.

238 ORGANIC REACTIONS Discussion, presented from the preparative viewpoint, of applications, limitations, and experimental conditions of the more important reactions of organic chemistry. *Prerequisite:* 131-132; credit or concurrent enrollment in 141-142. Three hours. Mr. Braun. (Not offered every year.)

Advanced Physical Chemistry

247-248 ADVANCED PHYSICAL CHEMISTRY A consideration at a higher level of the topics discussed in 141-142. Emphasis is placed on thermodynamics, kinetics and spectra. Statistical mechanics and quantum theory are introduced. *Prerequisite:* 141-142; concurrent enrollment in Math. 22. Three hours. Messrs. Cook and Inskeep.

246, 249 SPECIAL TOPICS IN PHYSICAL CHEMISTRY Discussions of specific topics in physical chemistry at the advanced level. Such topics as molecular and atomic spectra, theory of solutions, quantum theory or statistical mechanics may be considered. *Prerequisite:* 247-248 or its equivalent. Three hours. The staff.

341 CHEMICAL THERMODYNAMICS A systematic study of the application of thermodynamics in the solution of chemical problems. *Prerequisite:* 247-248. Three hours. Mr. Inskeep.

342 CHEMICAL KINETICS The velocity of chemical reactions in both homogeneous and heterogeneous systems. *Prerequisite:* 247-248. Three hours. Mr. Cook.

Seminars and Research

Seminars are required of graduate students and juniors and seniors concentrating in chemistry.

181-182 JUNIOR SEMINAR (2-0) One hour. Messrs. Lucarini and Inskeep.

183-184 SENIOR SEMINAR (2-0) One hour. The staff.

197-198 SENIOR RESEARCH (0-6, 0-12) The student elects a field for special study in inorganic, analytical, physical or organic chemistry, works under the direction of a staff member, and submits his findings in written form and suitably bound. Required of seniors in the Chemistry Curriculum. Two hours. I. Four hours. II. The staff.

381, 382, 383, 384 GRADUATE SEMINAR (2-0) One hour. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Classical Languages

COLLEGE OF ARTS AND SCIENCES

Professors Kent (*Chairman*) and Kidder; Associate Professors Pooley and Gilleland; Assistant Professor Davison

Greek

1-2 ELEMENTARY GREEK The essentials of Attic Greek. Prose compositions and selected readings from Greek authors. No prerequisite. Four hours. Mr. Pooley.

11-12 INTERMEDIATE GREEK Plato's *Euthyphro* and *Apology*; selections from the *Iliad* and the *Odyssey*. *Prerequisite*: 1-2 or its equivalent. Three hours. Miss Davison.

201 GREEK ORATORS Selected speeches of Lysias and Demosthenes. *Prerequisite*: 11-12. Three hours. Mr. Kent. (Offered in alternate years, 1958-59.)

202 GREEK COMEDY Two plays of Aristophanes. *Prerequisite*: 11-12. Three hours. Miss Davison. (Offered in alternate years, 1958-59.)

203 GREEK HISTORIANS Thucydides, Books I and II; selections from Herodotus and Xenophon's *Hellenica*. *Prerequisite*: 11-12. Three hours. Mr. Kent. (Offered in alternate years, 1959-60.)

204 GREEK TRAGEDY Sophocles' *Antigone* and Euripides' *Medea*, or two equivalent plays. *Prerequisite*: 11-12. Three hours. Mr. Gilleland. (Offered in alternate years, 1959-60.)

381-382 SEMINAR Intensive study at the graduate level of Greek authors not read in the candidate's undergraduate program. Credit as arranged. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

For Greek Art, see Art 1; for Greek Literature in Translation, see General Literature 51; and for Greek Philosophy, see Philosophy 107.

Latin

1-2 ELEMENTARY LATIN The essentials of Ciceronian Latin. For students who present less than two years of high school Latin.* *Credit is allowed only if Latin 11-12 is also completed*. Four hours. Mr. Gilleland.

11-12 INTERMEDIATE LATIN Extensive review of Latin syntax. Cicero, *In Catilinam* I, II; *Pro Archia*. Vergil, *Aeneid*, Books I and II. *Prerequisite*: 1-2, or two years of high school Latin. Three hours. Miss Davison.

32 ENGLISH WORDS Derivation of English words from Greek and Latin bases. Principles of word formation; development of meaning; training in the analysis of unfamiliar words, with special attention to scientific vocabulary. No previous knowledge of Greek or Latin required. Three hours. Mr. Gilleland.

101-102 LIVY AND HORACE Selected passages from Livy XXI and XXII; lectures on Roman historiography. Selections from Horace's *Odes*, with special

attention to metre and diction. *Prerequisite:* 11-12, or three years of high school Latin. Three hours. Mr. Gilleland.

111-112 **LATIN PROSE COMPOSITION** May be taken concurrently with Latin 101-102. Required of students who major in Latin and of those who wish to be recommended to teach Latin. *Prerequisite:* 11-12 or three years of high school Latin. One hour. Mr. Pooley.

203 **REPUBLICAN PROSE** Extensive reading in Caesar and Sallust, and in the speeches of Cicero. *Prerequisite:* 101-102. Three hours. Mr. Kent.

204 **EPIC POETS** Extensive reading in Lucretius, Vergil, Ovid, and others. *Prerequisite:* 101-102. Three hours. Mr. Gilleland.

251 **ROMAN LETTERS** Selected letters of Cicero, Pliny, and Fronto. *Prerequisite:* 203, 204. Three hours. Mr. Pooley. (Offered in alternate years, 1958-59.)

252 **COMEDY** Two plays of Plautus and Terence. Study of the development of this literary form. *Prerequisite:* 203, 204. Three hours. Mr. Pooley. (Offered in alternate years, 1958-59.)

255 **HISTORIANS OF THE EMPIRE** Augustus, *Res Gestae*; Tacitus, *Annals*, I-IV; selections from Suetonius and Ammianus Marcellinus. *Prerequisite:* 203, 204. Three hours. Mr. Gilleland. (Offered in alternate years, 1959-60.)

256 **SATIRE** Selections from Horace and Persius; Juvenal, *Satires*, I, III, X. Study of the development of this literary form. *Prerequisite:* 203, 204. Three hours. Mr. Kent. (Offered in alternate years, 1959-60.)

381-382 **SEMINAR** Intensive study at the graduate level of Latin authors not read in the candidate's undergraduate program. Credit as arranged. The staff.

391, 392, 393, 394 **MASTER'S THESIS RESEARCH** Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

For Latin Literature in Translation, see General Literature 52; for The Teaching of Latin, see Secondary Education 252.

Commerce and Economics

COLLEGE OF TECHNOLOGY

Professors Lobman (Chairman) and Briggs; Associate Professors Greif, Maybury, Nadworny, and Woodard; Assistant Professors Dellin, Huq, LeSourd, Nyquist, Pratt, and Severance; Messrs. Eldridge, Livak, Saboski, and Wick

1-2 **WORLD ECONOMIC GEOGRAPHY** Geography as a basis for economic development; importance of resources to production, exchange, consumption, population, and national economies. Three hours. Miss Woodard and Mr. Dellin.

* Students who have completed two years of high school Latin more than two years prior to their entrance into the University may be permitted by action of the department to enroll in Latin 1-2 for credit.

11-12 **PRINCIPLES OF ECONOMICS** Fundamental economic principles as an aid to the understanding of modern economic society. *Prerequisite:* sophomore standing. Three hours. The staff.

13-14 **PRINCIPLES OF ACCOUNTING (2-4)** An elementary course in the problems of the financial control of business, with the necessary practice work. *Prerequisite:* sophomore standing. Four hours. Messrs. Briggs and Nyquist.

15, 16 **ECONOMIC HISTORY OF THE UNITED STATES** Description and analysis of capitalism as it developed first in Western Europe and later in the United States as a basis for an understanding of our modern economic systems. *Prerequisite:* sophomore standing. Recommended to be taken concurrently with 11-12. Three hours. The staff.

49 **GENERAL TYPING** Instruction in typing techniques and mastery of the keyboard with the objective of accuracy in typing skill for personal use. Open to all students except secretarial studies majors and business education teacher trainees. Two hours. I and II. Mrs. Maybury.

136 **ALPHABETIC SHORTHAND AND TRANSCRIPTION** Instruction in the principles of writing shorthand using alphabetic letters rather than the traditional shorthand symbols. Shorthand writing is combined with typing skill through instruction in transcribing competently on the typewriter. This course is intended for students who wish to equip themselves with skill competency for general or vocational use in a limited period of time. *Prerequisite:* senior standing or the consent of the instructor. Four hours. Mrs. Maybury.

165, 166 **BUSINESS COMMUNICATIONS** A study of the principles involved in solving business problems through the media of written communications. Format and composition are considered, and actual practice in writing letters and reports is required. *Prerequisite:* junior standing. Three hours. Mrs. Maybury.

169 **OFFICE MANAGEMENT** Organization and supervision of office activities from the standpoint of the office manager; principles and procedures of office job analysis; selection and training of personnel; the office structure with regard to production standards, office forms, systems, equipment and supplies, flow of work and the physical layout of the office; cost control. *Prerequisite:* senior standing. Three hours. Mrs. Maybury.

Banking, Finance, and Insurance

105 **INTERNATIONAL TRADE AND FINANCE** Theory of international values, mechanism of adjustment of international balances, foreign exchange theory, the international aspects of monetary and banking theory, and tariff theory. *Prerequisite:* 11-12. Three hours. Mr. Huq.

109-110 **BUSINESS LAW I** First semester: a survey of the American system of law with particular reference to some of the fundamental legal concepts relating to business, especially as found in the law of contracts, sales, bailments, and negotiable instruments. Second semester: a continuation of the study of the legal aspects of business with specific reference to the law of agency, partnerships, and corporations. *Prerequisite:* 11-12. Three hours. Mr. Wick.

111 **ECONOMICS OF LIFE INSURANCE** Types of life insurance contracts and their application; premium and reserve computation, social security and other forms of life insurance. *Prerequisite:* 11-12 and 13-14. Three hours. Mr. Lohman.

112 **PROPERTY AND CASUALTY INSURANCE** The principles underlying property and casualty insurance. *Prerequisite:* 11-12 and 13-14. Three hours. Mr. Lohman.

120 **BUSINESS LAW II** The law in relation to financial instruments such as documents of title for collateral security, chattel mortgages, real estate mortgages, and suretyship and guaranty. *Prerequisite:* 109. Two hours. Mr. Wick.

201-202 **MONEY AND BANKING** The functions of money, credit, and banking in modern economic society. The theory of the internal and external value of money; the control of the money market; interrelationship of monetary and fiscal policies and their effects upon national and international price movements. *Prerequisite:* 11-12. Three hours. Messrs. LeSourd and Lohman.

203 **ECONOMICS OF TAXATION** Revenues and expenditures of federal, state, and local governments and their effects upon individuals, business institutions, and the national economy. *Prerequisite:* 11-12. Three hours. Mr. LeSourd.

204 **STATE AND LOCAL FINANCE** Revenues, expenditures and debt management problems of state and local governments; including an analysis of state and local fiscal relationships. Particular attention is devoted to problems, policies and practices in Vermont and neighboring states. *Prerequisite:* 11-12. Three hours. Mr. LeSourd.

206 **SECURITIES MARKETS** Analysis of the organization and operation of organized and over-the-counter securities markets; different types of securities; primary and secondary markets in the process of capital formation; securities price behavior; government and self-regulation of securities markets. *Prerequisite:* 11-12 and 13-14. Three hours. I. Mr. Lohman.

207 **CORPORATION FINANCE** A comparison of the various types of business forms with chief attention to the financing of corporations. *Prerequisite:* 11-12 and 13-14. Three hours. II. Mr. Lohman.

208 **INVESTMENTS** A study of the various media of investments and of the operation of financial institutions. Special consideration of investment analyses of industrials, financial institutions, public utilities, and railroads. Practical application of available statistical and accounting tools. *Prerequisite:* 206. Three hours. Mr. Lohman.

Hotel and Resort Management

166 **HOTEL AND RESORT EQUIPMENT** A study of various types of hotel and resort equipment, their operation and application. *Prerequisite:* 4. Three hours. I. Mr. Saboski.

167 **HOTEL AND RESORT STRUCTURES AND MAINTENANCE** Materials and methods of building construction, repair and maintenance. Specification and repair of hotel and resort fixtures and furniture. *Prerequisite:* 166. Three hours. II. Mr. Saboski.

177 HOTEL AND RESORT ADMINISTRATION The study of hotel and resort organization and administration. *Prerequisite:* 4. Three hours. Mr. Saboski.

178 HOTEL AND RESORT PROBLEMS A study of the specific problems arising in the management and operation of hotels and resorts. *Prerequisite:*

177. Three hours. Mr. Saboski.

Marketing and Merchandising

121 PRINCIPLES OF MARKETING The place of marketing in our economy. An intensive analysis of the marketing structure by functions, institutions, and commodities. *Prerequisite:* 11-12. Three hours. Mr. Greif.

122 PROBLEMS IN MARKETING The application of the case method to discover solutions to problems which challenge producers and middlemen in the marketing of goods and services. *Prerequisite:* 121. Three hours. Mr. Greif.

123 PERSONAL SALESMANSHIP A practical approach through class participation and individual demonstration to modern salesmanship, emphasizing the approach to, presentation and close of the sale. *Prerequisite:* 121. Three hours. Mr. Greif.

126 OPERATION OF SMALL BUSINESS AND SERVICE ESTABLISHMENTS A practical consideration of how the individual establishing his own business meets the problems of finance, location, display, merchandising, promotion, and control. Individual project development. *Prerequisite:* 121. Three hours. Mr. Greif.

131 SALES MANAGEMENT The new and established trends of the sales manager's job. Method of selection, training, testing, compensation and control, including marketing policies and the coordination of related departmental functions. *Prerequisite:* 121. Three hours. Mr. Greif.

132 FUNDAMENTALS OF ADVERTISING Advertising as an economic and social influence. A study of principles and techniques of copy preparation, media of selection and advertising activities. Students will receive practice in preparation of advertising copy and layout. *Prerequisite:* 121. Three hours. Mr. Greif.

Industrial and Personnel Management

141 LABOR ECONOMICS History of the American labor movement; objectives, policies, and tactics of labor unions; public policy with respect to labor organizations. *Prerequisite:* 11-12. Three hours. Mr. Nadworny.

143 INDUSTRIAL MANAGEMENT Fundamentals of management decisions in the organization and operation of industrial plants, including production and quality control; plant layout; equipment and maintenance; personnel management and industrial relations. *Prerequisite:* 11-12. Three hours. Mr. Nadworny.

242 COLLECTIVE BARGAINING The collective labor agreement; techniques of the bargaining process; arbitration; the administration of the labor contract. *Prerequisite:* 141. Three hours. Mr. Nadworny.

251 PERSONNEL ADMINISTRATION Functions and objectives of a personnel department; instruments of control, testing, and safety; incentive plans;

placement, selection, and interview techniques. Field trips to factories, stores and offices. *Prerequisite:* 141. Three hours. Mr. Nadworny.

252 EXECUTIVE DECISION-MAKING A synthesis of the management and operation of a firm in terms of production, marketing, personnel, and finance. Especial emphasis will be given to the process of decision-making and the planning and execution of policies. *Prerequisite:* 121, 143 and a course in finance. Three hours. Mr. Nadworny.

254 SCIENTIFIC MANAGEMENT AND LABOR Description and analysis of the development of scientific management, reactions and relationship of organized labor to it; long-range effects of scientific management on the structure and policies of industry and organized labor. *Prerequisite:* 143. Three hours. Mr. Nadworny.

For Motion and Time Study and Plant Organization, required of students in this option, see Engineering, Mechanical (M.E. 175, 176).

Accounting

161 INTERMEDIATE ACCOUNTING Accounting records, end-of-year procedures, statements, analysis of working capital, profit and loss analysis, corporations, current and fixed assets, investments, liabilities, reserves, determination of net income, and the statement of application of funds. *Prerequisite:* 13-14. Three hours. Mr. Briggs.

162 ADVANCED ACCOUNTING Accounting for partnerships, ventures, consignments, installment sales, insurance, statement of affairs, receivers, realization and liquidation, estates, trusts, home offices and branches, and parent and subsidiary accounting. *Prerequisite:* 161. Three hours. Mr. Briggs.

163 FINANCIAL STATEMENT ANALYSIS A thorough study of the balance sheet and income statement from an analytical point of view. Such subjects as trend percentages, common-size statements, working capital analysis, ratios, and other methods of analysis are covered. *Prerequisite:* 13-14. Three hours. Mr. Briggs.

164 BASIC FEDERAL TAXES A study of the federal income tax law and regulations covering taxable income, exclusions and inclusions, allowable deductions, exemptions, gains and losses, accounting methods, and computation of tax for all classes of taxpayers. Federal payroll taxes are discussed. The course includes the assignment of research problems and the preparation of tax returns. *Prerequisite:* 13-14. Three hours. Mr. Nyquist.

271 AUDITING The theory and practice of auditing applicable to the work of the internal and external auditor, including auditor's responsibility, types of audits, and audit programs. Illustrative audit working papers, financial statements, and audit reports are prepared and discussed. *Prerequisite:* 162. Three hours. Mr. Nyquist.

272 COST ACCOUNTING The course covers manufacturing costs, the nature and uses of cost accounting, the job-lot cost plan, cost accounting for materials, labor, factory burdens, process manufacturing costs, operational cost accounting, cost standards, residual and by-products, and joint products. *Prerequisite:* 13-14. Three hours. Mr. Briggs.

276 C.P.A. PROBLEMS An intensive review of questions and problems which have appeared on past C.P.A. examinations, including partnerships, corporations, financial statements, auditing, cost accounting, insolvencies, receiverships, liquidations, consolidations, estates, trusts, governmental and institutional accounting methods. *Prerequisite:* 162. Three hours. Mr. Briggs.

Economics

181 TRANSPORTATION Social and economic aspects of the transportation problems as revealed by an analysis of the nature, history, and problems of the various transportation agencies of the United States. *Prerequisite:* 11-12; Pol. Sci. 1, 2. Three hours. Mr. LeSourd.

182 PUBLIC UTILITIES The economics of public utility enterprise with special reference to franchises, capital structure, valuation, rate-making, and governmental regulation. *Prerequisite:* 11-12; Pol. Sci. 1, 2. Three hours. Mr. Severance.

183 ECONOMIC LIFE AND GOVERNMENT CONTROL A study of the economic causes and consequences of government regulation and control of business activities. *Prerequisite:* 11-12; Pol. Sci. 1, 2. Three hours. Mr. LeSourd.

187-188 ELEMENTARY STATISTICS (2-2) The theory and interpretation of statistics. First semester: data collection, graphical presentation, frequency distribution, measures of central tendency and dispersion, tests of significance and analyses of variance. Second semester: index number theory and construction, time series, the fitting of linear and non-linear trend lines and two-variable, multiple and partial correlation. *Prerequisite:* 11-12; Math. 1. Three hours. Mr. Severance.

286 ECONOMIC ANALYSIS An analysis of consumer demand, supply, market price under competitive conditions and monopolistic influences, and the theory of income distribution. *Prerequisite:* 11-12 and one other semester course. Mr. Severance.

288 QUALITY CONTROL (2-2) The application of statistical tools to industrial problems. Topics covered include control charts, sampling plans, index numbers and measurement of trends. *Prerequisite:* 187. Three hours. Mr. Severance.

292 INTERNATIONAL ECONOMIC PROBLEMS AND POLICIES Important aspects of international cooperation and conflict in the economic sphere; the quest for foreign markets, raw materials, investment opportunities, and population outlets. *Prerequisite:* 11-12. Three hours. Mr. Huq.

293-294 MONEY, INCOME AND PRICES An analysis and description of cyclical fluctuations. The problems of cyclical control, employment, and price levels, as well as overall planning, are discussed in the second semester. *Prerequisite:* 201-202 or concurrent enrollment. Mr. Severance.

295 HISTORY OF ECONOMIC THOUGHT The development of economic ideas from classical antiquity to modern times, with emphasis on the Classical, Historical, Socialist, Optimist, Marginalist, and Neoclassical Schools. *Prerequisite:* 286 or consent of instructor. Three hours. Mr. Huq.

296 MODERN ECONOMIC THOUGHT A survey of the leading 20th Century economists and their doctrines including studies of J. B. Clark, Thorstein Veblen, Alfred Marshall, W. C. Mitchell, J. A. Hobson, J. M. Keynes, J. R. Hicks, and others. *Prerequisite*: 295. Three hours. Mr. Huq.

297, 298 SEMINAR Designed for students concentrating in the department. Review of recent books and periodical literature; discussions of topics of contemporary interest; student reports based upon personal investigation. *Prerequisite*: senior standing; consent of chairman. Three hours. The staff.

300, 301 INDEPENDENT READING AND RESEARCH A course designed primarily to meet the special research problems of graduate students. Consent of the department required. Hours to be arranged. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Secretarial Studies

Note: Students who have had instruction in typing and shorthand in high school will be enrolled in the proper level typing and shorthand courses on the basis of qualifying tests administered by the department.

133 ELEMENTARY TYPING Instruction in typing technique for the beginner. Emphasis is on speed and accuracy. Experience is provided in the production of a variety of business material including letters and reports, tabulation, typing from rough draft. *Prerequisite*: junior standing or the consent of the instructor. Three hours. Miss Pratt.

134 INTERMEDIATE TYPING The typing skills are developed further. Practice is provided in typing a variety of business forms, statistical matter, and documents. *Prerequisite*: 133 or the consent of the instructor. Three hours. Miss Pratt.

135 ADVANCED TYPING Development of typing skills in the production of advanced business projects. Speed and accuracy in production are emphasized. *Prerequisite*: 134 or the consent of the instructor. Three hours. Miss Pratt.

137 ELEMENTARY SHORTHAND Instruction in Gregg shorthand writing for the beginner. A thorough study is made of shorthand fundamentals and a basic shorthand vocabulary is developed. Application is made to business material of a practical nature. *Prerequisite*: junior standing or the consent of the instructor. Four hours. Miss Pratt.

138 INTERMEDIATE SHORTHAND Further development of the principles of Gregg shorthand writing. Development of writing speed and reading ability through dictation and transcription of a wide variety of business material. *Prerequisite*: 137 or the consent of the instructor. Four hours. Miss Pratt.

139 ADVANCED SHORTHAND Review of the principles of Gregg shorthand writing with emphasis on the development of word construction in an extensive vocabulary. Dictation and transcription practice with a variety of more difficult business and professional material is provided. *Prerequisite*: 138 or the consent of the instructor. Four hours. Miss Pratt.

140 **TRANSCRIPTION** This course develops the skills of shorthand and typing, and correlates them with training in transcription of a variety of business problems. *Prerequisite:* 135 and 139 or the consent of the instructor. Seven hours. Miss Pratt.

179 **SEMINAR** An opportunity to study the basic principles governing secretarial activity on the executive level. This is a problem solving experience which relates office tasks in proper sequence as found in the functioning of the office. Emphasis is given to the development of judgment and initiative, and on responsibility for making decisions and effecting execution of them. Visits are arranged for specialists in business to meet with the students and field trips are arranged for observation of offices demonstrating the principles studied. *Prerequisite:* senior standing. Three hours. Mrs. Maybury.

180 **EXECUTIVE SECRETARIAL PROCEDURES** A synthesis of skills and job knowledges obtained in the professional courses studied as they are efficiently applied in a variety of secretarial duties. The student is given experience in organizing and executing production jobs and in delegating tasks to others and supervising them. *Prerequisite:* 179. Three hours. Mrs. Maybury.

Dental Hygiene

SCHOOL OF DENTAL HYGIENE

Dr. Sawabini (Chairman); Assistant Professors Okey and Quinby; Drs. Conklin, Faigel, Heininger, Reiman, and Slack; Mrs. Heininger

1 **ORIENTATION TO DENTAL HYGIENE (1-0)** A general study of the dental hygiene movement; history, growth, status of dental hygienist, scope of operations, standards and ethics, personal qualifications and personality traits. One hour. Miss Quinby.

2 **INSTRUMENTATION (0-6)** The principles and technics of instrumentation for scaling and polishing teeth with use of manikins. Examination and charting of mouth and general clinical procedures. Three hours. Miss Quinby.

11 **DENTAL ANATOMY (2-4)** Study of anatomy of head and neck; the form and structure of teeth, including nomenclature and relationship; calcification and eruption of teeth; drawing, carving, and identification of individual teeth. Four hours. Dr. Heininger.

21 **GENERAL AND DENTAL HISTOLOGY AND EMBRYOLOGY (1-2)** Introductory study of the microscopic structure and development of the basic tissues of the body and oral cavity. Emphasis is based upon dental and oral material. Use of microscope, colored slide projections and drawings comprise laboratory work. Two hours. Dr. Reiman.

32 **FIRST AID (1-0)** The basic principles of first aid are taught to the student in order that she may prevent and cope with emergencies that arise in the dental office. One hour. Mrs. Heininger.

53-54 **ORAL PATHOLOGY (2-0) (1-0)** An introduction to general pathology with special consideration of the more common diseases affecting the human body. Emphasis is placed upon the pathology of the teeth and their supporting structures. Two hours, first semester; one hour, second semester. Dr. Sawabini.

52 PHARMACOLOGY AND ANESTHESIOLOGY (2-0) Lectures on the reaction and uses of drugs. Also a study of anesthesia, general and local, as it is used in dental practice. Two hours. Dr. Faigel.

61 RADIOLOGY (1-1) The study, demonstration, and practice of the fundamentals of intra-oral radiographic technic including electrophysics; angulation of machine; placing of films in mouth and complete processing of films. One hour. Dr. Slack.

72 DENTAL HEALTH EDUCATION (2-0) Demonstrations and practical applications of modern methods of dental health education. Study of teaching methods; visual aids; surveys and statistics; materials; campaigns; school dental programs. Two hours. Miss Quinby.

74 PUBLIC HEALTH (2-0) Public health as it applies to community sanitation; communicable disease control; organization, powers and function of health departments and voluntary health agencies; relation of dentistry to public health. Two hours. Mr. Okey.

81-82 DENTAL HYGIENE CLINIC PRACTICE (0-15) Actual clinic practice on patients beginning with simple cases and gradually progressing to more difficult cases with children and adults. Practice in the field is done by the student at local dental clinics, hospitals and in Children's Homes. Five hours. Miss Quinby and staff.

91-92 DENTAL ASSISTING, DENTAL MATERIALS, ETHICS AND OFFICE MANAGEMENT (1-0) The principles of professional ethics and economics; office management and essentials of practice building; dental assistant and materials used in dental practice. One hour. Dr. Conklin.

94 BACTERIOLOGY (2-4) An introduction to the study of infectious agents. General considerations of modes of transmission of infectious disease, manner of disease production and methods by which the body combats infection. Special consideration of infectious diseases of the oral cavity. Four hours. Bacteriology staff.

Education

COLLEGE OF EDUCATION AND NURSING

Professors King (Chairman), Bennett, Huden, Kent, Koile, Pappoutsakis, and Pearl; Associate Professors Black, Haugen, Irvine, and Male; Assistant Professors Adams, McNeil, Mills, Phillips, Schultz, Start, Stearns, and Weinrich; Miss Lachance and Mr. McDonald.*

1-2 ORIENTATION TO EDUCATION Orientation to education as a career; consideration of courses and experiences in education curricula; introduction to education as a profession. One hour. The staff.

7 EDUCATIONAL PSYCHOLOGY Principles of educational psychology as drawn from research, theory, and educational technique. A study of the learning process, its determining conditions and its results. Three hours. Miss Black and Mr. Koile.

116 HEALTH EDUCATION The role of the classroom teacher in the total program of school and community health. An understanding of the physical

* On leave, 1957-58.

development and well-being of the human body. Two hours. Miss Phillips and the staff.

140 PROBLEMS IN CITIZENSHIP Opportunities for study of current problems of citizenship at community, state, and national levels. Field contacts and experiences are utilized where possible. The major objective of the course is to awaken the student to the challenge of active citizenship. The course is offered for senior students in education and is arranged to fit the student teaching schedule of the final semester. Three hours. Mr. Haugen.

145, 146 LEARNING AND THE ADOLESCENT A study of the developing adolescent, psychology of learning with particular application to the adolescent, and measurement and evaluation of adolescent learning and development. *Prerequisite:* General Psychology. Three hours. Mr. Huden.

202 PHILOSOPHY OF EDUCATION Educational theory based upon psychological principles, the contributions of leading educational philosophers, and present day social needs; the relationships of education to social welfare and the demands made upon education by a democratic society. *Prerequisite:* 12 semester hours in education and psychology. Three hours. Miss Black.

222 READING PROBLEMS—GRADES 4-8 The course deals with principles of remedial teaching, causes of reading difficulties, diagnoses of reading problems, techniques of skill development, and materials for remedial work in reading. *Prerequisite:* 12 hours in education and psychology, including an introductory course in the teaching of reading. Three hours. Mrs. Stearns.

223-224 READING CLINIC Study of techniques in the diagnosis and correction of reading difficulties; clinical experience with remedial cases which have been accepted by the reading clinic. Enrollment by permission of the director of the reading center and the dean of the college. Two-four hours. (Not offered 1957-58.)

Elementary Education

3-4 CHILD AND COMMUNITY Supervised experiences with children's groups in the community. One hour. Miss Lachance and Miss McNeil.

100 PHYSICAL EDUCATION IN THE ELEMENTARY SCHOOL Development of a program of physical education for the elementary school. Principles, methods and materials appropriate for the several age and grade groups. Two hours. Miss Phillips.

111-112 MUSIC Ear training, music reading and writing, elementary theory, history and appreciation. Three hours. Mr. Pappoutsakis.

113 SCHOOL MUSIC Basic principles in elementary school music teaching. *Prerequisite:* 111-112 or Music 1, 2 and 5-6. Three hours. Mr. Schultz.

121 TEACHING READING Principles underlying the teaching of reading; materials of instruction; reading readiness; vocabulary development; development of correct study skills; observation in elementary schools. *Prerequisite:* Psych. 1. Three hours. Mrs. Adams.

131 CHILD DEVELOPMENT The physical, mental, social and emotional development of the child; a study of methods of guiding this development. Observation in elementary schools. Three hours. Mrs. Adams.

134 CHILDREN'S LITERATURE Literature "old and new" for children. The course aims to acquaint students with both traditional and modern literature in prose and poetry, to help them to appreciate literature suitable for children at different age levels, and to establish criteria for judging books for children. The principles and techniques of story telling, as well as practice in this art, are an integral part of the course. Three hours. Mrs. Adams.

143-144 METHODS AND MATERIALS I Principles, methods and materials in teaching language arts, social studies, science, and arithmetic in the elementary school. Observations and participation in elementary schools. Three hours. Miss McNeil and Miss Lachance.

160 METHODS AND MATERIALS II Classroom management, lesson planning, and teaching. Preparation for full-time student teaching. Three hours. Miss McNeil and Miss Lachance.

161 STUDENT TEACHING Teaching in the elementary schools of Burlington and vicinity under the guidance of cooperating teachers and college supervisors. Students spend seven full weeks in the elementary schools. *Prerequisite:* senior standing. Seven hours. Miss McNeil and Miss Lachance.

170-171 ART FOR THE ELEMENTARY SCHOOL A study of the purposes and methods of contemporary art education in the development of the child. The course includes lectures, discussions, and direct experiences in creative art. Designed for classroom teachers. Three hours. Mrs. Mills.

Secondary Education

5 JUNIOR HIGH SCHOOL MATHEMATICS A review of arithmetic and elementary algebra from the viewpoint of the prospective junior high school teacher; the aims and objectives determining the selection and presentation of subject matter; selected advanced topics in arithmetic; development of skill in computation and in solving problems; use of computing devices; graphs and scale drawings. Three hours. (Not offered 1957-58.)

15 PARTICIPATION Students are provided with an opportunity to observe and participate in classroom work in junior and senior high schools. Two hours. Mr. Irvine.

101 JUNIOR HIGH SCHOOL ORGANIZATION AND MANAGEMENT The organization, administration, and management of the junior high school for the efficient attainment of educational objectives. *Prerequisite:* Psych. 1; junior standing. Three hours. Mr. Pearl.

102 PRINCIPLES OF EDUCATION The aims and principles of American education; the organization and development of the public school system. *Prerequisite:* junior standing; Psych. 1. Three hours. Miss Black.

162 THE JUNIOR HIGH SCHOOL CURRICULUM The curriculum of the junior high school, its objectives and content; proper grade placement of curriculum content; laboratory experience in junior high schools; appropriate teaching procedures; observation and participation in various subject fields and on different grade levels; appraisal of the results of educational effort. *Prerequisite:* Psych. 1. Three hours. Mr. Pearl.

180 SECONDARY METHODS AND PROCEDURES General methods of secondary school instruction; problems of classroom management; pupil diagnosis and guidance. *Prerequisite*: satisfactory completion of an introductory course in education; senior standing. Three hours. Mr. Pearl and Mr. Irvine.

181 STUDENT TEACHING IN SECONDARY SCHOOLS Students are assigned to observe, participate in classroom work, and teach in junior or senior high school classes. Their teaching is directed, observed, and evaluated by critic teachers, the supervisors of student teaching, and the principals of the schools. Individual conferences with critic teachers, the supervisors of student teaching, and the principals occur at frequent intervals. *Prerequisite*: 180, high standing in professional subjects and in the field of specialization; approval by the director of student teaching. Six hours. Mr. Pearl and Mr. Irvine.

211 EDUCATIONAL MEASUREMENTS An introductory course dealing with the essential principles of measurement in education. Topics include statistics applied to education; improvement of teacher-made measures of achievement; construction of objective tests and inventories; analysis of standard tests. *Prerequisite*: 12 semester hours in education and psychology. Mr. Huden. (Not offered 1957-58.)

225 TEACHING SOCIAL STUDIES IN SECONDARY SCHOOLS Special methods in the field of social studies; aims and objectives; motivation; individual differences; selection of teaching material and visual aids. *Prerequisite*: 12 semester hours in education and psychology; 18 semester hours in social studies. Three hours. The staff. (Not offered in 1957-58.)

227 TEACHING SCIENCE IN SECONDARY SCHOOLS Science methods and curriculum content in the secondary school. *Prerequisite*: 12 semester hours in education and psychology; 18 semester hours in science. Three hours. I or II. (Not offered 1957-58.)

232 SCHOOL ADMINISTRATION A general course in school administration designed for both teachers and administrators. Considers the roles of teachers and administrators in the organization and management of curriculum, extra-curricular activities, pupil classification, school plant and equipment, school finance, supervision, in-service education, and community relationships. *Prerequisite*: senior standing; 12 hours in education and psychology. Three hours. I. Mr. Irvine.

243 READING AND STUDY IN THE SECONDARY SCHOOL A course designed to acquaint the teacher with the reading and study skills which are necessary for success in the secondary school and to show how these skills may be developed at the secondary school level. *Prerequisite*: 15 hours in English and six hours of psychology and/or education. Three hours. Mrs. Stearns.

250 GUIDANCE The underlying principles of guidance and the development of a guidance program for the school; the organization of the school program to meet individual needs of pupils; the use of tests in guidance; ways of meeting personality and behavior problems; the guidance function of the home room; the development and use of cumulative records; counseling pupils with reference to ethical and health problems, leisure time activities, educational pro-

grams, and vocational goals. *Prerequisite:* 12 semester hours in education and psychology. Three hours. Mr. Pearl.

252 **TEACHING LATIN IN SECONDARY SCHOOLS** The place of Latin in the curriculum; the aims of Latin teaching; ways of studying vocabulary, syntax, and derivatives; the selection and use of textbooks and illustrative material. Required for recommendation to teach Latin. *Prerequisite:* Latin 102 and 112. Three hours. Mr. Kent.

257 **TEACHING MATHEMATICS** The place of mathematics in the curriculum, organization of subject matter, aims and practices in teaching. *Prerequisite:* 15 semester hours in mathematics; 12 semester hours in education and psychology. Three hours. Mr. Huden. (Not offered in 1957-58.)

258 **TEACHING MODERN LANGUAGES** Consideration of the contribution made by the study of modern languages to the general aims of the secondary curriculum; discussion and evaluation of present-day methods, textbooks, and illustrative material. *Prerequisite:* teaching field in a modern language. Three hours. The staff. (Not offered in 1957-58.)

297-298 **PROBLEMS IN EDUCATION** Individual work on a problem involving research. Problem to be selected by the student in consultation with a staff member. Enrollment by permission of the Dean and the staff member who will direct the study. Open to seniors and to graduate students who have at least 12 hours in education and psychology. Credit to be arranged. The staff.

301-302 **RESEARCH IN EDUCATION** Problems in present-day education studied by individuals and the class; methods of investigation and standards for the presentation of material; thesis writing; presentation of individual and committee reports. *Prerequisite:* graduate standing; 12 hours in education and psychology including Educational Measurements. Three hours. (Not offered in 1957-58.)

330 **SEMINAR IN EDUCATIONAL ADMINISTRATION** Problems of school organization and structure, school finance, school buildings, personnel policies, educational program, and public relations. Individual and group investigation, reports, and discussion. *Prerequisite:* graduate standing; one course in administration or experience in the field. Three hours. Mr. King and Mr. Irvine. (Not offered in 1957-58.)

391, 392, 393, 394 **MASTER'S THESIS RESEARCH** Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Business Education

104 **PRINCIPLES OF BUSINESS EDUCATION** Basic principles, practices, and problems of and trends in business education. *Prerequisite:* Psychology 1. Two hours. Mr. McDonald.

105 **TEACHING BUSINESS SUBJECTS** Principles and techniques in the organization and the teaching of business subjects in the high school. *Prerequisite:* 104. Three hours. Mr. McDonald.

Music Education

For music 57, 58, Violin Class, and Music 59, 60, Wind Class, see the offerings in Applied Music of the Music Department.

131-132 **ELEMENTARY SCHOOL METHODS AND PRACTICE TEACHING** The teaching of music in the primary and grammar grades. Observation and practice teaching in the schools of Burlington or vicinity. *Prerequisite:* Music 1, 2; credit or enrollment in Music 5-6; permission of instructor. Three hours. Mr. Schultz. (Offered in alternate years, 1957-58.)

151-152 **SECONDARY SCHOOL METHODS AND PRACTICE TEACHING** The administration and content of required and elective high school music courses. Observation and practice teaching in the schools of Burlington or vicinity. First semester: junior high school music; second semester: senior high school music. *Prerequisite:* credit or enrollment in Music 1, 2 and Music 5-6; permission of instructor. Three hours. Mr. Schultz. (Offered in alternate years, 1958-59.)

155-156 **APPLIED MUSIC METHODS** Methods of teaching piano, organ, voice or violin. *Prerequisite:* three years' instruction in chosen instrument at the University, or equivalent. One hour. Miss Marston, Mr. Weinrich, and Mrs. Start.

Other Courses in Education

In addition to the courses offered during the academic year, the following courses are offered from time to time in summer sessions and in the adult education program.

<i>Number</i>	<i>Title</i>	<i>Credit Hours</i>
S75	Driver Education Workshop, Basic.....	2
S108	Adolescent Psychology	3
S109	Science Methods	3
S110	Teaching Social Studies (elementary)	3
S114	Music for the Junior High School	3
S115	Guidance of Music Activities—Grades III-VI	3
S117	Alcohol Education	3
S118	Guiding Elementary School Pupils in Music Experiences	3
S119	Elementary School Music (Music for grades I and III)	3
S122	Developmental Reading	3
S127	Science for Teachers	3
S132	Teaching Arithmetic	3
S142	Audio-Visual Materials and Methods	3
S150	Intensive Teacher Training	3
S172	The Creative Process Through Art	3
S175	Driver Education, Advanced	2
S200	The History of Arithmetic	3
S201	Administration of the Athletic Program	3
S203	Principles of Physical Education	3
S204	History of European Education	3
S205	History of American Education	3
S209	Workshop in the Education of Teachers of the Mentally Retarded	6

S210	Workshop in the Education of Teachers of the Mentally Retarded II	6
S212	Child Development	3
S213	Statistical Methods in Education and Guidance	3
S214	The Slow Learner	3
S215	The Gifted Child	3
S216	Health Education	6
S217	Seminar in Secondary School Curriculum	3
S218	Workshop in Curriculum	4
S219	Workshop in Economic Education	4
S220	Personality Development and Mental Hygiene	3
S226	Conservation	6
S229	Communicative Arts in Secondary Schools (Teaching English in Secondary Schools)	3
S230	The Elementary School Principalship	3
S231	The Secondary School Principalship	3
S233	Elementary School Supervision	3
S234	Secondary School Supervision	3
S241	Science Methods (Science for Elementary Schools)	3
S242	Modern Trends in Elementary Education	3
S255	School and Society	3
S256	Basic Concepts of Mathematics	3
S260	Improvement in Teaching Bookkeeping and Basic Business Subjects	3
S261	Seminar in Business Education	3
S262	Principles, Problems, and Trends in Business Education	3
S263	Improvement in Teaching Typewriting and Shorthand	3
S264	Business Education Curriculum	3
S270	Kindergarten Methods and Organization	4
S271	Laboratory Experiences in Kindergarten Education	4
S277	Seminar in Educational Psychology	3
S280	Professional Problems in Education	3
S307	Counseling (Techniques and Group Procedures in Guidance)	3
S308	Group Testing in Guidance	3
S309	Administration of the Guidance Program	3
S310	Occupational Information	3
S312	Individual Testing	3
S331	Seminar in Administration for Secondary Principals	3

Engineering, Agricultural

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Associate Professors Schneider (Chairman) and Arnold

101 FARM SHOP (0-6) Instruction in wood and metal working by hand and machine methods, sheet metal work, welding, rope work, tool fitting, and concrete work. Includes demonstrations and methods of teaching these opera-

tions. Problems in safety, shop care, layout, and selection of equipment. *Prerequisite:* sophomore standing. Three hours. Mr. Schneider.

103 FARM POWER, MACHINERY AND ELECTRICITY (2-2) Principles of operation and maintenance of internal combustion engines and farm tractors. Principles of operation and the maintenance of farm machinery. Principles of electricity and the utilization of electricity and electrical equipment on the farm. *Prerequisite:* sophomore standing. (May not be taken for credit by candidates for the B.S.A.E. degree.) Three hours. Mr. Schneider.

104 FARM STRUCTURES AND UTILITIES AND SOIL AND WATER ENGINEERING (2-2) Principles and methods of construction on the farm including planning and selection of materials. Principles of operation and selection and maintenance of farm water systems and sewage disposal systems. Principles of operation of refrigeration units used on the farm. Soil conservation practices and surveying. *Prerequisite:* sophomore standing. (May not be taken for credit by candidates for the B.S.A.E. degree.) Three hours. Mr. Schneider.

151 FARM STRUCTURES (2-2) The design of farm structures, materials, structural requirements, functional requirements, insulating, heating, and ventilating. *Prerequisite:* C.E. 131 or concurrent enrollment in C.E. 131. Three hours. Mr. Arnold. (Offered in alternate years, 1958-59.)

152 FARM UTILITIES (2-2) The theory and application of water systems and plumbing, sewage disposal and refrigeration. *Prerequisite:* M.E. 142 or C.E. 162 or concurrent enrollment and Physics 21-22. Three hours. Mr. Arnold. (Offered in alternate years, 1958-59.)

154 AGRICULTURAL MACHINERY AND EQUIPMENT (2-2) Theory, design, and operation and maintenance of agricultural machinery and equipment. *Prerequisite:* C.E. 130 and C.E. 131. Three hours. Mr. Arnold. (Offered in alternate years, 1959-60.)

155 SOIL AND WATER ENGINEERING (2-2) The engineering problems involved in the application of hydrologic and agronomic data to the design, location, and construction of farm ponds, drainage, and irrigation systems, and erosion control facilities. *Prerequisite:* C.E. 53 or permission of the department, and Agronomy 2. Three hours. Mr. Arnold. (Offered in alternate years, 1959-60.)

156 ELECTRICITY IN AGRICULTURE (2-2) Theory and engineering practices in the application of electricity to agriculture. *Prerequisite:* E.E. 101. Three hours. Mr. Arnold. (Offered in alternate years, 1958-59.)

158 FARM POWER MACHINERY (2-2) The theory, design, operation, and maintenance of tractors and their engines. *Prerequisite:* M.E. 113, C.E. 131 or concurrent enrollment. Three hours. Mr. Arnold. (Offered in alternate years, 1959-60.)

181-182 JUNIOR SEMINAR (1-0) Review and discussion of current agricultural engineering research, student reports and studies of agricultural engineering problems. *Prerequisite:* junior standing and permission of the department. One hour. The staff.

183-184 SENIOR SEMINAR (1-0) Review and discussion of current agricultural engineering research, student reports and studies of agricultural engi-

neering problems. *Prerequisite:* A.E. 181-182 or permission of the department. One hour. The staff.

Engineering, Civil

COLLEGE OF TECHNOLOGY

*Professor Milbank (Chairman); Associate Professors Knight, Root and Fay;
Assistant Professor Dodd*

24 STATICS (3-0) The fundamentals of statics including composition and resolution of forces, the analysis of force systems in two and three dimensions, centroids and moments of inertia. *Prerequisite:* Math. 21 or concurrent enrollment. Three hours. I, II.

51, 52 SURVEYING (3-4) First semester: fundamental surveying methods; measurement of lines, angles, and difference in elevation; land surveying, areas, and plotting. Second semester: city and mine surveying; elements of practical astronomy; theory of curves, earthwork calculations; elements of photographic surveying; topographic surveying; elements of geodetic surveying. *Prerequisite:* Math. 11; 51 for 52. Four hours.

53 PLANE SURVEYING (3-4) Use of the steel tape, level, and transit; elements of topographic surveying; special problems as presented and solved in fields affected. For those not enrolled in civil engineering. *Prerequisite:* Math. 11 or Math. 1, 2. Four hours.

54 ENGINEERING CAMP Four weeks summer field practice between the sophomore and junior years. Topographic, hydrographic and route surveys; triangulation, precise leveling, and base line measurements; solar observations. *Prerequisite:* 51-52. Four hours.

113 CONCRETE AND BITUMINOUS LABORATORY (0-3) Laboratory practice in testing materials used in concrete and bituminous mixtures; design of mixes to obtain specified compressive and flexural strengths; investigations of durability, yield, economy, and effect of admixtures. *Prerequisite:* 131. One hour.

114 MECHANICS OF MATERIALS LABORATORY (0-3) A study of experimental stress analysis methods; fundamental properties of metals, plastics, and wood; the effects of size, shape, method and speed of loading, and strain history on these properties. *Prerequisite:* 131. One hour.

130 DYNAMICS (3-0) The fundamentals of kinematics covering rectilinear and curvilinear motion, relative motion, Coriolis acceleration, translation, rotation, and plane motion. The fundamentals of kinetics covering translation, rotation, and plane motion of particles and rigid bodies; work, energy, power; impulse and momentum; simple harmonic motion. *Prerequisite:* 24, also Math. 21. Three hours. I, II.

131 MECHANICS OF MATERIALS I (3-0) The study of the elastic and plastic behavior of materials; normal and shearing stresses from axial, torsional, and flexural loading combinations; deflections due to torsion and bending; applica-

tions to statically indeterminate members; analysis of plane stress and strain, failure theories, and design criteria. *Prerequisite:* 24; also Math. 21. Three hours. I, II.

140 **STATICALLY DETERMINATE STRUCTURES (3-3)** Analysis and design of statically determinate structures; prefaced by consideration of function, expected loads, reactions, material choice, and layout of members. Influence lines; criteria for positioning moving loads; design of steel and timber members under combined bending and axial load; base plates; eccentric connections. Laboratory practice in graphic statics and design computations. *Prerequisite:* 131. Four hours.

151 **ENGINEERING CONTRACTS (2-0)** Study of contract law and engineering specifications, ethics and professional conduct. *Prerequisite:* senior standing. Two hours. I, II.

155 **REINFORCED CONCRETE (3-0)** Analysis of stresses in plain and reinforced concrete members. Design of reinforced concrete structures. Theory of prestressed concrete. *Prerequisite:* concurrent enrollment in 175. Three hours.

158 **SUBSTRUCTURE ANALYSIS AND DESIGN (3-3)** Evaluation of subsoil conditions and earth pressures; design of retaining walls, substructures for buildings and bridges, and cofferdams. *Prerequisite:* 155 and 173. Four hours.

157 **BUILDING CONSTRUCTION (3-0)** Practical building construction in building materials. Construction processes and estimating. Elective course. *Prerequisite:* senior standing. Three hours.

162 **HYDRAULICS (3-0)** The mechanics of liquids with emphasis upon flow meters; flow in pipe systems; flow in open channels; elements of fluid mechanics; elements of hydraulic machinery. *Prerequisite:* 130 and M.E. 113. Three hours.

163 **HYDROLOGY (3-0)** The basic theory of precipitation, run-off infiltration and ground water. The presentation of precipitation and run-off data. The application of the data for use in development of natural water resources. Elective course. *Prerequisite:* 162 or M.E. 142. Three hours.

165 **WATER SUPPLY ENGINEERING (2-3)** Sources of water supply, quantity available, uses and rates of demand; quality, examination, and treatment; collection, storage, and distribution. Laboratory periods cover field trips to and reports on existing water supply systems, design problems, and cost estimates. *Prerequisite:* 162. Three hours.

166 **SEWERAGE AND SEWAGE TREATMENT (2-3)** Design of sanitary and storm sewers; methods of treatment of sewage. Laboratory periods cover field trips to and reports on existing sewage treatment plants; design problems of sewer systems and sewage treatment plants. *Prerequisite:* 162, 165; Chem. 1-2. Three hours.

168 **HYDRAULICS LABORATORY (0-3)** To be taken in conjunction with 162. Laboratory studies for illustration of theory and behavior of metering devices; pipe line flow and hydraulic machinery. One hour.

173 SOIL MECHANICS (2-3) Identification, description, and physical properties of soils; subsurface exploration; engineering characteristics of natural deposits of soil. Laboratory practice in sampling; classification and identification; mapping; testing for index and engineering properties. Current research and design problems considered. *Prerequisite:* 140. Three hours.

174 TRANSPORTATION ENGINEERING (3-0) Relation of highway, waterway, railway, pipeline, and airway transportation. Consideration of economic and planning studies, soils, drainage, highway and airport surfaces, geometric design of modern highways. Design of municipal airports with access roads. *Prerequisite:* 173. Three hours.

175 INDETERMINATE STRUCTURES I (3-0) Analysis of statically indeterminate structures by consistent deformation, least work, slope deflection, and moment distribution; prefaced by determinations of deflections by virtual work, moment area, conjugate beam, and Williot-Mohr diagram. Continuous structures and rigid frames considered. *Prerequisite:* 104. Three hours.

176 ADVANCED STRUCTURAL DESIGN (3-3) Advanced theory and design of structures with emphasis on continuous frames and trusses. Consideration of wind stress analysis, space frames, moment connections, and camber diagrams. Comparative studies of specifications for design in steel; aluminum design. Laboratory problems in design of steel building frames and continuous highway girder and truss bridges. *Prerequisite:* 175. Four hours.

201 INDETERMINATE STRUCTURES II (3-0) Continuation of 175 with applications to analysis of statically indeterminate structures starting with a brief review and proceeding to the analysis of indeterminate trusses, arches and frames. Elective course. *Prerequisite:* 175. Three hours. II.

202 WATER POWER ENGINEERING (3-0) The hydrologic, hydraulic, and geologic studies of water power sites; selection of turbines and equipment; economic considerations. Elective course. *Prerequisite:* 162 or M.E. 142. Three hours.

204 MECHANICS OF MATERIALS II (3-0) The study of stresses and strains at a point under plane and three-dimensional loading using Mohr's circle; failure theories; energy methods; plastic design; buckling of plates and shells. *Prerequisite:* 130, 131. Three hours.

230 ADVANCED DYNAMICS (3-0) The study of Coriolis acceleration; gyroscopic forces; dynamic measurements; vibrations, earthquakes, and blast shocks on structures. *Prerequisite:* 130, Math. 211. Three hours.

234 ADVANCED MECHANICS OF MATERIALS (3-0) An introduction to the theory of elasticity with applications to curved beams, combined stresses, torsion of non-circular sections; relaxation procedures. *Prerequisite:* 204, Math. 212. Three hours.

235 PHOTOELASTICITY (2-3) Development of the theories of photoelastic stress analysis; model similitude; correlation with other stress analysis techniques. Laboratory work on two-dimensional applications such as stress concentrations around holes, notches, and fillets. *Prerequisite:* 204, Math. 211. Three hours.

Engineering, Electrical

COLLEGE OF TECHNOLOGY

*Professors Eckels (Chairman), McKee and Smith**; *Visiting Professor Stibitz†*;
Associate Professors Hoilman and Shorey; *Assistant Professor Chen‡*;
Messrs. Dudevoir‡, Leonard†, Palmer†, Plumb and Snowman

25-26 ELECTRIC AND MAGNETIC CIRCUITS I (3-3) A study of basic electric circuit elements and their behavior in d-c and a-c circuits with lumped constants. Topics on magnetic circuits and electromagnetic interactions are included. *Prerequisite*: concurrent enrollment in Math. 21 and Physics 21 for 25, Math. 22 and Physics 22 for 26. Four hours.

101, 102 ELECTRICAL CIRCUITS AND MACHINES (3-3) Principles of electric and magnetic circuits and the application of these principles to the theory and performance of selected power, control and communication equipment. *Prerequisite*: Math. 22 and Physics 22, 101 for 102. Four hours.

109 PHYSICAL ELECTRONICS (3-0) Electron ballistics. Characteristics of vacuum tubes, gas tubes, phototubes, and solid state elements. Equivalent circuit of the class A amplifier. *Prerequisite*: 26 or 101 or Physic 242 and permission of instructor. Three hours.

110 ELECTRONIC CIRCUITS (3-0) Untuned voltage amplifiers, low and high frequency compensation, voltage and current feedback; untuned power amplifiers, single stage and push pull; tuned amplifiers class A and class C; oscillators-tuned circuit, phase shift, negative resistance, and crystal. *Prerequisite*: 109 and 125 or Physics 171, 241 and permission of instructor, and Math. 211; concurrent enrollment in 118 or 120. Three hours.

116-117 ELECTRIC MACHINES (3-0) A study of the principal types of rotating machinery from the physical and mathematical standpoint. *Prerequisite*: E.E. 125; concurrent enrollment in 120 or 122 for 116, 119 or 121 for 117. Three hours.

118 ELECTRICAL LABORATORY I A (0-3) Laboratory study to accompany 110. *Prerequisite*: concurrent enrollment in 110. One hour.

119 ELECTRICAL LABORATORY II A (0-3) Laboratory study to accompany 117. *Prerequisite*: concurrent enrollment in 117. One hour.

120 ELECTRICAL LABORATORY I (0-6) Laboratory study to accompany 110 and 116. *Prerequisite*: concurrent enrollment in 110 and 116. Two hours.

121 ELECTRICAL LABORATORY II (0-6) Laboratory study to accompany 117 and 225. *Prerequisite*: concurrent enrollment in 117 and 225. Two hours.

122 ELECTRICAL LABORATORY I B (0-3) Laboratory study to accompany 116. *Prerequisite*: concurrent enrollment in 116. One hour.

123 ELECTRICAL LABORATORY II B (0-3) Laboratory study to accompany 225. *Prerequisite*: concurrent enrollment in 225. One hour.

* On leave, 1957-58.

† Fall semester.

‡ Spring semester.

125 ELECTRIC AND MAGNETIC CIRCUITS II (3-3) A study of polyphase electric circuits, non-sinusoidal waves, iron core reactors and transformers, and applications. *Prerequisite:* 26 or Physics 242 and permission of instructor; concurrent enrollment in Math. 211. Four hours.

126 ELECTRIC AND MAGNETIC CIRCUITS III A study of electric circuits with distributed constants and of the transient behavior of electric and magnetic circuits. *Prerequisite:* 125 or Physics 242 and permission of instructor; Math. 211. Three hours.

201 INDUSTRIAL ELECTRONICS (3-3) Characteristics of gas tubes and their application to rectifiers and inverters. Semi-conductors, photo tubes, and circuits. Electronic control of motors, elementary servomechanisms, radio frequency heating, timing controls, x rays. *Prerequisite:* 110. Four hours.

203 ADVANCED ELECTRONICS (4-0) Modulation and detection of amplitude and angular modulated waves and their application to the transmission and reception of audio and video information. Square law and linear methods of amplitude modulation and detection, the heterodyne principle. Reactance tube, Armstrong and phasitron methods of angular modulation. Limiter and discriminator circuits. The analysis of special circuits for wave shaping and for computing operations. *Prerequisite:* 110. Three hours.

204 ELECTROMAGNETIC WAVE THEORY (3-3) Maxwell's equations, the Poynting vector, guided waves and radiation. High frequency oscillators, the klystron, magnetron, and traveling wave tubes. *Prerequisite:* 110 and Math. 212. Four hours.

206 U.H.F. CIRCUITS (3-3) Circuits and techniques for use at ultra-high frequencies. *Prerequisite:* 203 and 225. Four hours.

207, 208 SPECIAL TOPICS (2-3) Formulation and solution of theoretical and practical problems dealing with electrical circuits, apparatus, machines or systems. *Prerequisite:* 125. Three hours.

209 TRANSIENT PHENOMENA (3-3) The mathematical development of voltage and current transients with experimental check by means of the oscillograph. *Prerequisite:* 126. Four hours.

210 SERVOMECHANISMS (4-0) A study of the theory, performance and stability of servomechanism systems of control. *Prerequisite:* 101 or 116 and 126 or Physics 242 and permission of instructor and Math. 211. Three hours.

211 ELECTRIC UTILITIES (3-0) Organization of the electrical utility; elementary corporate finance; economics of location, conductor size, station and line costs; rate structures; regulatory bodies. *Prerequisite:* senior standing in electrical engineering and permission of the instructor. Three hours.

212 POWER SYSTEMS (3-0) Machine and line transients; steady state and transient stability of power systems; relay systems; circuit breakers; lightning; fault studies; coordination of power and telephone systems. *Prerequisite:* senior standing in electrical engineering and permission of the instructor. Three hours.

214 INDUSTRIAL POWER APPLICATION (3-0) Design and application of d.c. and a.c. motor drives for industrial plants; magnetic and electronic con-

trols; duty cycles; acceleration, retardation and braking; power supplies and distribution systems. *Prerequisite:* 102 or 117, and permission of instructor. Three hours.

225, 226 FILTERS, LINES AND FIELDS (3-0) A study of the behavior of electric filters, lines and fields with applications to power, communication and control systems. *Prerequisite:* 125, 126 and Math. 212, 225 for 226; concurrent enrollment in 121 or 123 for 225. Three hours.

230 CREATIVE ENGINEERING (4-0) A study of creative techniques and a practical problem approach with applications of these methods to current industrial problems. *Prerequisite:* Math. 211, at least four hours in Electricity and Magnetism or Electrical Engineering in courses numbered above 100, and permission of instructor. Three hours.

231 TRANSISTORS (2-0) The fundamental principles of semi-conductor operation. P and N type conductivity; the PN junction; construction of the junction transistor. Circuit analysis of transistor operation in terms of hybrid parameters. Biasing methods for stabilization in multistage amplifiers. Equivalent circuits for high frequency operation; oscillators and pulse switching circuits. *Prerequisite:* 110. Two hours.

281, 282 SEMINAR (1-0) Presentation and discussion of advanced electrical engineering problems and current developments. *Prerequisite:* senior or graduate engineering enrollment. One hour.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of research topic under the direction of an assigned staff member culminating in an acceptable thesis. Credit as arranged.

Engineering, Mechanical

COLLEGE OF TECHNOLOGY

Professor Outwater (Chairman); Associate Professors Duchacek, Marshall, and Tutbill; Assistant Professor Carpenter

3, 4 ENGINEERING PROBLEMS (0-3) The nature of engineering principles and the kinds of work done in the fields of engineering. Development of skill and systematic methods in the solution of problems related to engineering. Enrollment restricted to freshman engineering students. *Prerequisite:* 3 for 4. One hour.

51, 52 MANUFACTURING PROCESSES (1-3) A study of metal machining, casting, welding, forming and inspection methods including economic factors and choice of methods. Laboratory work involves further study of variables, applications and limitations of some of the more common processes. *Prerequisite:* E.G. 2; 51 for 52. Two hours.

84 MECHANICAL INSTRUMENTATION (1-0) An introduction to engineering measurement, laboratory instruments, their use, limitation and calibration. *Prerequisite:* concurrent enrollment in 92. One hour.

92 THERMODYNAMICS I (2-0) Introduction to engineering thermodynamics with particular emphasis on energy forms and the development of the First and Second Laws. *Prerequisite:* Math. 21, Physics 21. Two hours.

102 INDUSTRIAL METALLURGY (2-3) The fundamentals of ferrous and non-ferrous physical metallurgy. The correlation of the metallographic structure and physical properties of metals and alloys with their heat treatments and uses. Topics include studies of iron-carbon alloys, heat treatment of steels, low alloy steels, high alloy steels, tool steels, case hardening, cast irons, hardenability, precipitation hardening, copper and nickel base alloys, light metals and their alloys, heat resistant alloys and corrosion of metals. *Prerequisite:* Chemistry 2; Physics 22. Three hours.

111 THERMODYNAMICS II (3-3) The perfect gas, and approximate relationships for real gases; steam; the application of thermodynamics principles to cycles, heat engines, compressors, and refrigeration. The three hour laboratory is a problems and analysis period. *Prerequisite:* 92. Four hours.

113 THERMODYNAMICS AND HEAT TRANSFER (3-0) The fundamental principles of engineering thermodynamics and the application of these principles to thermodynamic cycles, prime movers, compressors, heat transfer. *Prerequisite:* Physics 21; Math. 22; C.E. 130. Three hours.

117 MECHANICAL ENGINEERING LABORATORY (0-3) Coordinated with ME 111 to verify and demonstrate thermodynamic principles and applications as studied in class. Experiments dealing with steam calorimetry, the first law with unsteady flow, combustion, air compression, refrigeration, etc. *Prerequisite:* concurrent enrollment in 111. One hour.

131 MECHANISMS (3-3) The analysis of displacements, velocities, and accelerations in machines and the application of such analysis to cams, gears, and other mechanisms, with emphasis placed upon the graphical methods. A study of rolling contact, cam and gear design, flexible connectors, and miscellaneous mechanisms. *Prerequisite:* E.G. 2; C.E. 130. Four hours.

134 MACHINE DESIGN I (3-3) Statically indeterminate members, deflection of beams, columns, connections, energy methods, theories of failure, continuous beams. Determination of forces and torques required to overcome frictional, static, and inertia forces; balancing machinery. *Prerequisite:* 131, C.E. 131. Four hours.

142 FLUID MECHANICS (3-0) Fluid statics. Kinematics of fluid flow; thermodynamics of steady flow of any fluid; viscosity; dimensional analysis and dynamic similarity; pipe and channel flow for incompressible fluids; momentum and propulsion; resistance and lift of immersed bodies; compressible fluid flow in nozzles, wind tunnels, pipes, etc.; fluid machinery; mathematical study of fluid motion. *Prerequisite:* 111 or 113; C.E. 130. Three hours.

151 MACHINE DESIGN II (3-3) A continuation of 134. Application of the principles of strength of materials and mechanisms to the design of machine parts considering wear, cost, and methods of manufacture. Design problems correlating various engineering fundamentals and considering practical limitations. *Prerequisite:* 52, 134. Four hours.

154 PRODUCTION ENGINEERING (2-3) An introduction to the problems involved in tooling a manufacturing plant for production. Analysis of production requirements, the design and use of cutting tools, jigs and fixtures, dies,

gages, and miscellaneous auxiliary equipment; economic aspects. *Prerequisite:* 52, junior standing. Three hours.

164 AIR CONDITIONING (3-3) The application of the fundamental principles of thermodynamics, heat transfer and fluid mechanics to the design and performance of air conditioning systems and equipment. *Prerequisite:* 111 or 113; 142. Four hours.

174 INDUSTRIAL ENGINEERING (3-0) Principles of industrial organization, plant facilities and layout, production and quality control, motion and time study, wage incentives, job evaluation and safety engineering. Three hours.

175 MOTION AND TIME STUDY (3-0) Principles and methods of analyzing work; job improvement; stop watch studies; elemental and predetermined time standards and miscellaneous related topics. Open to students of Commerce and Economics and Management Engineering. *Prerequisite:* junior or senior standing. Three hours.

176 PLANT ORGANIZATION (2-6) Analysis of plant requirements as to location, layout and materials handling; plant services and maintenance. Open to students of Commerce and Economics and Management Engineering. *Prerequisite:* junior or senior standing. Four hours.

181 SEMINAR (2-0) Discussions of the mechanical engineering profession, the ethics, responsibilities, and status of members of the profession and timely activities of present day practice. Current issues of pertinent publications are used as collateral reading and as guides in the study and discussion of contemporary progress in the field. *Prerequisite:* senior standing. Two hours.

192 THESIS (0-9) Investigation of a research or design project under the supervision of an assigned staff member culminating in an acceptable thesis. *Prerequisite:* senior standing and the approval of the Department. Three hours. I or II.

243 ADVANCED FLUID MECHANICS AND FLUID MACHINERY (3-3) Steady compressible flow; compressible flow in pipes and channels with heat and friction; boundary layer effects; general features and factors influencing design of fluid machinery; performance features of pumps, compressors, fluid couplings, torque converters, turbines; fluid vibrations; mathematics of two dimensional flow, vorticity and circulation, stream functions. *Prerequisite:* 142 and Math. 211. Four hours.

246 AERODYNAMICS (3-0) The application of the principles of fluid mechanics to the design and performance of aircraft; fluid dynamics; experimental facilities; airfoil characteristics; aspect ratio and plan-form influences; viscosity phenomena as applied to boundary layer; transition and separation on various shapes; compressibility phenomena; the optimum airfoil; performance. *Prerequisite:* 142. Three hours.

255 MECHANICAL VIBRATIONS (2-0) An advanced course in the field of machine design with special emphasis on problems of vibrations. Topics include causes of vibrations, methods of study of vibratory motion, determination of vibration stresses, and methods of damping. *Prerequisite:* C.E. 130, Math. 211. Two hours.

262 ADVANCED HEAT POWER ENGINEERING (4-3) Application of theoretical power cycles to actual plant cycles and equipment, including turbines, internal combustion engines, gas turbines, boilers, accessories, etc. Performance characteristics; analysis and selection of equipment; development of station energy balances; economic factors. *Prerequisite:* 111 or 113, concurrent enrollment in 266. Five hours.

266 HEAT TRANSFER (2-0) Fundamental principles of heat transfer; conduction, convection, radiation; steady and unsteady state; applications to heat transfer equipment. *Prerequisite:* 111 or 113 and Math. 211. Two hours.

267, 268 ADVANCED HEAT ENGINES (3-0) Advanced study in theoretical thermodynamics with applications in specific types of heat engines according to the interests of the students. *Prerequisite:* 111 and permission of department. Three hours.

294 ENGINEERING ANALYSIS (0-3) Application of scientific principles to the analysis of comprehensive engineering problems. Particular emphasis is given to the development of a well ordered logical approach to the statement and solution of the problems and to the conclusions and decisions involved. *Prerequisite:* senior standing. One hour.

301 ADVANCED MACHINE DESIGN (3-0) Advanced mechanics of materials and applications to mechanical design according to the interests of the student. *Prerequisite:* 151. Three hours. I or II.

302 ADVANCED MECHANICS Development of the foundations of mechanics leading to Hamilton's principle and LaGrange's equations; vibration and stability of systems with many degrees of freedom; gyroscopic effects in mechanical systems; systems with variable coefficients and non-linear systems. *Prerequisite:* 151, 255. Three hours.

311 ADVANCED MECHANICAL STRUCTURES I The torsion problem and membrane analogy; thick cylinders and rotating discs; beams on elastic foundation and the bending of cylindrical shells. *Prerequisite:* 151, Math. 211. Three hours.

322 ADVANCED MECHANICAL STRUCTURES II Stress and strain at a point in three dimensions; introduction to the theory of elasticity with two-dimensional examples; development of strain energy method with applications to beams, curved bars and plates; elastic bodies in contact. *Prerequisite:* 311. Three hours.

332 COMPRESSIBLE FLOW One-dimensional compressible flow; unsteady fluid motions; two-dimensional flow at subsonic and supersonic speeds. *Prerequisite:* 243. Three hours.

334 TURBINES Application of engineering science to the design of turbines. Review of thermodynamics and fluid mechanics of flow phenomena; fundamentals of the design of turbines, compressors, heat exchangers. *Prerequisite:* 332. Three hours.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Engineering, Division of Graphics

COLLEGE OF TECHNOLOGY

Assistant Professor Paquet and Mr. Dewey

1 **MECHANICAL DRAWING (0-6)** A basic course covering the fundamentals of drafting. Topics covered include use of instruments, freehand lettering, orthographic projection, sections, auxiliary views, dimensioning, screw threads and elementary pictorials. Two hours.

1A **GRAPHICS (0-9)** This course may be elected in place of course 1 with permission of the Division of Graphics and is a more comprehensive and modern treatment of the science of drafting. The use of drafting methods in the solving of engineering, scientific and mathematical problems is stressed in addition to the conventional representational uses. Topics covered include those of course 1 plus projective constructions, periodic curves, graphical scales and nomography, empirical equations and graphical calculus. Three hours.

2 **DESCRIPTIVE GEOMETRY (0-6)** A basic course covering the fundamentals of descriptive geometry. Topics covered include point, line and plane problems, revolution, single curved, warped and double curved surfaces, intersection and development of surfaces. Two hours.

2A **DESCRIPTIVE GEOMETRY (0-9)** This course may be elected in place of course 2 with permission of the Division of Graphics and includes a more comprehensive coverage of the material with more emphasis on practical applications. Also a portion of the semester will be used to cover the new methods in the field of pictorials. Three hours.

6 **NOMOGRAPHY (0-4)** The theory and construction of graphical computing charts. *Prerequisite:* 1 and 2. Two hours.

English

COLLEGE OF ARTS AND SCIENCES

Professors Pope (Chairman), Bogorad (Acting Chairman), Hughes, Marston, and Trevitbick; Associate Professors Bandel, Dean, and Wainwright; Assistant Professors Jones, Long, McArthur, and Van Ghent; Messrs. Brownfield, Cochran, Guet, Jameson, Loomis, Nault, Piper, and Weems*

1-2 **ENGLISH COMPOSITION** An analysis of the principles of composition through theme writing and a study of selected literary works. Criticisms of the common errors of writing and speech; study of words, sentences, and paragraph construction. Required of all freshmen. Three hours. The staff.

13, 14 **PERIODICAL WRITING** First semester: news writing and journalism; second semester: the commercial short story, articles, and other forms of periodical writing. *Prerequisite:* 1-2. Three hours. Mr. Dean.

16 **EXPOSITORY WRITING** The writing of expository papers and articles. *Prerequisite:* 1-2. Three hours. I, II. The staff.

18 **CREATIVE WRITING** The writing of short stories, novels, poetry, plays, and imaginative essays. Instruction will be guided by the particular needs and

* On leave, 1957-58.

talents of the students in the class. *Prerequisite:* 1-2. Three hours. Mrs. Van Ghent.

25, 26 **WORLD LITERATURE** A detailed study, in English translation, of ten masterpieces of world literature which have made significant contributions to the development of western culture. Lectures, discussions, and reports. *Prerequisite:* 1-2. Three hours. The staff.

27, 28 **ENGLISH-AMERICAN LITERATURE** A study of selected English and American authors from early to modern times. Required of students concentrating in English. Lectures, discussions, and reports. *Prerequisite:* 1-2. Three hours. The staff.

102 **MEDIEVAL LITERATURE IN TRANSLATION** Representative literature of the Middle Ages, excluding Chaucer. Lectures, discussion, and reports. *Prerequisite:* 25, 26 or 27, 28. Three hours. Miss Hughes. (Offered in alternate years, 1959-60.)

201 **CHAUCEER** Study of the principal works of Chaucer, with emphasis on Chaucer's literary scope, talents, and position in medieval literature. *Prerequisite:* 25, 26 or 27, 28. Three hours. Miss Hughes.

206 **ELIZABETHAN DRAMA** A study of drama in England from its beginning to 1642, exclusive of Shakespeare. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Pope. (Offered in alternate years, 1958-59.)

207-208 **SHAKESPEARE** Literary study and textual interpretation of most of Shakespeare's works. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Pope.

211 **RENAISSANCE POETRY** The major poets of Tudor and Stuart England, from Wyatt and Surrey to Donne and his followers, with special emphasis on Spenser and the development of Elizabethan lyric poetry. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Long. (Offered in alternate years, 1959-60.)

212 **MILTON** The works of Milton including *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, some of the minor poems, and selections from the prose works. Lectures, discussions, and reports. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Bogorad. (Offered in alternate years, 1959-60.)

217 **RESTORATION AND EIGHTEENTH-CENTURY DRAMA** The development of English drama from Dryden to Sheridan. The lectures, discussions, and reports consider the literary and theatrical qualities of representative plays. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Bogorad. (Offered in alternate years, 1958-59.)

218 **RESTORATION AND EIGHTEENTH-CENTURY PROSE AND POETRY** The works, including selected novels, of significant writers from Dryden to Johnson. Particular emphasis on the development of the essay, the satires of Pope and Swift, and the works of the Johnson-Boswell circle. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Bogorad. (Offered in alternate years, 1958-59.)

221, 222 **THE ROMANTIC PERIOD** First semester: the development of the Romantic Movement through Wordsworth and Coleridge; second semester: Byron, Shelley, Keats, and other Romantic poets and prose-writers. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Pope. (Offered in alternate years, 1959-60.)

227, 228 **ENGLISH NOVEL** English fiction from its origins through the nineteenth century. Masterpieces are stressed and read critically. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Wainwright. (Offered in alternate years, 1959-60.)

231, 232. **VICTORIAN LITERATURE (1832-1900)** A study of the lives and the works (except the novels) of the significant writers of the era by lectures, discussion, and reports. Outstanding poets and prose writers are studied as spokesmen of their own age and harbingers of the present one. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Wainwright. (Offered in alternate years, 1958-59.)

237 **MODERN NOVEL** *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Marston.

238 **MODERN DRAMA** A study of plays, both European and American, which represent the principal trends in the dramatic renaissance of the late nineteenth and the twentieth centuries. *Prerequisite:* 25, 26 or 27, 28. Three hours. Miss Bandel.

239 **MODERN POETRY** *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Wainwright.

240 **MODERN SHORT STORY** A critical study of the short stories of outstanding modern writers, as well as of the recent techniques and trends in this type of literature. Limited to seniors, except with permission of the instructor. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Wainwright.

251, 252 **AMERICAN NOVEL** Masterpieces of nineteenth-century American fiction selected on the basis of literary merit. Lectures, class discussions, oral and written reports. First semester: Hawthorne, Melville, and others; second semester: Mark Twain, Howells, James and others. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Trevithick. (Offered in alternate years, 1958-59.)

253 **AMERICAN COLONIAL LITERATURE** Intellectual and literary origins, in the seventeenth and eighteenth centuries, of American culture. In particular, the works of Edwards, Taylor, Franklin, Woolman, Hamilton and Jefferson. Lectures, discussions, oral and written reports. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Trevithick. (Offered in alternate years, 1959-60.)

254 **EMERSON, THOREAU AND THEIR CIRCLE** Special attention to the essays, journals, and poetry of Emerson, and to Thoreau's *Walden*. Minor writers in the group will receive briefer treatment. Lectures, discussions, oral and written reports. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Trevithick. (Offered in alternate years, 1959-60.)

256 **LITERATURE OF THE AMERICAN FRONTIER** A study of frontier, local-color and regional writing in America from the eighteenth century to the First World War, including Parkman, Harte, Mark Twain, Garland and others. Lectures, discussions and reports. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Marston. (Offered in alternate years, 1959-60.)

258 **AMERICAN POETRY** Major American poets from the 18th century to the First World War, including Poe, Whitman, Emily Dickinson, Robinson,

Frost, and others. Lectures, discussions and reports. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Marston. (Offered in alternate years, 1958-59.)

260 MODERN ENGLISH The development of Modern English; Modern English usage, with readings of illustrative selections. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. McArthur. (Offered in alternate years, 1959-60.)

262 OLD AND MIDDLE ENGLISH Development of the language through the Old and Middle English periods, with readings of illustrative selections. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. McArthur. (Offered in alternate years, 1958-59.)

271 BIBLIOGRAPHY Methods of literary study, research, and scholarship. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Pope. (Offered in alternate years, 1958-59.)

272 HISTORY OF CRITICISM Principles and theories of criticism from Aristotle to the twentieth century. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Jones. (Offered in alternate years, 1959-60.)

273 TECHNIQUE AND CRITICISM OF POETRY A study of poetic theory with close analysis of selected poems, past and present, designed to show their organic structure, the relation between poetic intention and sense, mood, tone, imagery, stanzaic form, and meter. Lectures, discussions, reports. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mr. Bogorad. (Offered in alternate years, 1959-60.)

275-276 CREATIVE CRITICISM A seminar in modern critical techniques, with creative application of these techniques through the writing of critical papers on poetry, drama, and fiction both contemporary and traditional. *Prerequisite:* 25, 26 or 27, 28. Three hours. Mrs. Van Ghent.

277-278 ADVANCED CREATIVE WRITING The development of extended projects in creative writing such as a novel, a group of short stories or plays, or a sequence of poems. *Prerequisite:* 25, 26 or 27, 28, and one of the following: 13, 14, 16 or 18. Three hours. Mrs. Van Ghent.

282 SEMINAR FOR PROSPECTIVE TEACHERS OF ENGLISH Problems of grammar and language, of literary interpretation and criticism, with allied problems useful to teachers of English. Open to seniors and graduate students. *Prerequisite:* 25, 26 or 27, 28 and Secondary Education 107. Three hours. Miss Hughes.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Forestry

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Professors W. R. Adams (*Chairman*) and Belyea

2 ELEMENTS OF FORESTRY Introduction to specialization in forestry and conservation. Open to preforestry students only. Three hours. Mr. Belyea.

3 DENDROLOGY (0-3). Field identification and characteristics of the more important forest trees and formation of forest types. One hour. Mr. Adams.

4 DENDROLOGY OF ANGIOSPERMS (2-3) Classification and silvical characteristics of the more important broad leaf forest trees of North America. Twig identification. *Prerequisite:* 3. Three hours. Mr. Belyea.

5 DENDROLOGY OF GYMNOSPERMS Classification and silvical characteristics of the more important native and exotic coniferous forest trees of North America. *Prerequisite:* 3. Two hours. Mr. Belyea.

21 FOREST PROTECTION Protection of the forest resources from loss or damage. Organization of preventative measures against fire, insects and diseases. Public education in cooperation and control. Two hours. Mr. Belyea.

22 ELEMENTS OF WOODS PRACTICE The use and care of forestry instruments and woodsman's tools. Elementary map making. Silvicultural techniques. Harvesting and wood utilization. Required of all freshmen who have not had at least two months of approved experience in the woods. At the end of the summer immediately following the freshman year. Forty-four hours a week for two weeks. Two hours. The staff.

25 FOREST MENSURATION (1-3) Timberland surveying, timber estimating, log scaling, and growth determinations of trees and stands. Graphical presentation of forestry data. *Prerequisite:* 4 or permission of the department. Two hours. Mr. Belyea.

26 UTILIZATION OF WOODLAND PRODUCTS (2-3) Sawmilling, wood products manufacture, forest products other than lumber, wood preservation, maple products, and private and cooperative marketing practices. *Prerequisite:* 5 or permission of the department. Three hours.

103-104 WOODLAND MANAGEMENT (2-3) Establishment, protection, and management of farm woodlands and small forest areas. *Prerequisite:* junior standing. Three hours. Mr. Adams.

197, 198 SENIOR RESEARCH The student works on a research problem under the direction of a qualified staff member and submits the findings in a written form prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

208 BIOLOGICAL STATISTICS The application of statistics to the analysis of biological data. Interpretation of statistical analysis. *Prerequisite:* Math. 1; senior standing. Three hours. Mr. Adams.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

General Literature

COLLEGE OF ARTS AND SCIENCES

51 GREEK LITERATURE IN TRANSLATION Lectures on the development of the various branches of Greek literature and on its chief authors, with special emphasis on Homer and the drama. Readings in standard translations from the major authors. No knowledge of Greek required. *Prerequisite:* junior standing. Three hours. Mr. Gilleland.

52 **LATIN LITERATURE IN TRANSLATION** Lectures on the development of Latin literature and on the principal Latin authors, with attention to the relation of Latin literature to Greek and English literature. Readings in standard translations from the major authors. No knowledge of Latin required. *Prerequisite:* junior standing. Three hours. Mr. Gilleland.

62 **GERMAN LITERATURE IN TRANSLATION** Lectures on the development of German literature; reading and discussion of representative works. No knowledge of German required. *Prerequisite:* junior standing. Three hours. Mr. Kahn.

72 **ROMANCE LITERATURE IN TRANSLATION** A comparative study of various literary movements in France, Spain, and Italy. *Prerequisite:* junior standing and one survey course in any literature. Three hours.

Geology

COLLEGE OF ARTS AND SCIENCES

Professor Doll (Chairman); Associate Professor Doten

1-2 **INTRODUCTORY GEOLOGY (3-2)** The composition, structure, and surface forms of the earth, and the agencies active in their production; a general survey of the earth's history as recorded in the rocks. Field trips and lantern slides. Four hours.

11 **MINERALOGY (2-3)** The crystallographic, chemical and physical properties of minerals, and their identification by means of the blowpipe technique. *Prerequisite:* 1-2. Three hours.

14 **PETROLOGY (2-2)** Study of the origin and characteristics of igneous, sedimentary, and metamorphic rocks and related ore deposits. *Prerequisite:* 11. Three hours.

21 **ENGINEERING GEOLOGY (2-2)** The recognition of common minerals and rocks; rock structures and their effects on engineering problems. Required of students in civil engineering, not open to others. Three hours.

101 **OPTICAL MINERALOGY (1-4)** Introduction to the study of the optical properties of non-opaque minerals and their determination by means of the polarizing microscope. *Prerequisite:* 14. Three hours.

102 **PETROGRAPHY (1-4)** Classification, origin and composition of the more important igneous, sedimentary and metamorphic rocks, by means of the polarizing microscope and thin sections. *Prerequisite:* 101. Three hours.

103-104 **ECONOMIC GEOLOGY (2-2)** The characteristics, occurrence, distribution, production, and uses of the more important mineral resources. First semester: nonmetallics; second semester: metallics. Trips to localities of economic interest. *Prerequisite:* 14. Three hours.

111 **STRUCTURAL GEOLOGY (2-2)** Structural features of the earth's crust produced by earth movements. Emphasis on the mechanics of folding, fracturing, faulting, and rock flowage, and the relation of such structures to mountain building. *Prerequisite:* 14. Three hours.

112 FIELD GEOLOGY (1-6) Field methods in the geologic mapping of an assigned area. One conference a week on the problems and progress of the field work; a written report on the area, accompanied by a field map, submitted at the end of the course. *Prerequisite*: 111. Three hours.

121 PALEONTOLOGY (2-2) Invertebrate fossils; their evolution, morphology and classification, and their importance in the interpretation of earth history. *Prerequisite*: 1-2. Three hours. (Offered in alternate years, 1958-59.)

207 IGNEOUS GEOLOGY (2-2) Detailed consideration of the paragenesis of igneous rocks, with laboratory work on selected suites of specimens. *Prerequisite*: 102. Three hours. (Offered in alternate years, 1959-60.)

208 METAMORPHIC GEOLOGY (2-2) Detailed consideration of metamorphic processes and types of metamorphic rocks, with appropriate laboratory study of metamorphic suites. *Prerequisite*: 102. Three hours. (Offered in alternate years, 1959-60.)

215 GEOMORPHOLOGY (2-2) The land forms of the surface of the earth and their origins; external and internal forces modifying the earth. The physiographic provinces of North America are emphasized. *Prerequisite*: 14. Three hours. (Offered in alternate years, 1959-60.)

216 GLACIAL GEOLOGY (2-3) A survey of the origin, mechanics and effects of past and present glaciations. *Prerequisite*: 215. Three hours. (Offered in alternate years, 1959-60.)

223 SEDIMENTATION (2-2) The processes active in the erosion, transportation and deposition of sediments, their consolidation into sedimentary rocks, and methods of sedimentary petrology. *Prerequisite*: 14. Three hours. (Offered in alternate years, 1958-59.)

224 STRATIGRAPHY (2-2) The sequential development and distribution of the sedimentary rocks. *Prerequisite*: 223. Three hours. (Offered in alternate years, 1958-59.)

281-282 SEMINAR Review and discussion of current geological literature. Open to seniors and graduate students by permission. One hour. The staff.

German

COLLEGE OF ARTS AND SCIENCES

Associate Professor White (Chairman); Assistant Professors Kahn, Webster, and Wurthmann

1-2 ELEMENTARY GERMAN A beginning course, using modern techniques, with emphasis on the spoken language of everyday use. Oral, aural, and written practice in speaking, reading, and comprehension, based on the memorization of texts in the form of dialogues. Tape recordings of the materials are available for student listening as an aid to speaking and comprehension. *Credit is allowed only if German 11-12 is also completed.* Four hours. The staff.

11-12 INTERMEDIATE GERMAN Reading and discussion, as far as possible in German, of selected modern texts. Review of grammar and practice in translating technical and scientific expository prose. Emphasis is upon the devel-

opment of vocabulary, knowledge of idioms, auditory comprehension and facility in reading. *Prerequisite*: 1-2 or equivalent. Three hours. The staff.

101-102 INTRODUCTION TO GERMAN LITERATURE Selected works of Goethe, Schiller, and Lessing, and a survey of the development of German literature from the beginnings to the twentieth century with practice in hearing, writing, and speaking German. *Prerequisite*: 11-12. Three hours. Mr. Webster.

121-122 COMPOSITION AND CONVERSATION Guided conversation, discussion, and oral and written drill in German. Emphasis is placed upon increasing the student's oral and written command of German. Free composition, oral reports, and translation into German are required. *Prerequisite*: 11-12 or equivalent and permission of the instructor. Three hours. Mr. Wurthmann.

131-132 SCIENTIFIC GERMAN Reading and translation of moderately difficult scientific prose and review of grammar. Emphasis is upon development of the ability to read accurately and efficiently original German in the branch of science in which the student is specializing. After the first few weeks, individual assignments are made in the field of each student's main scientific interest. *Prerequisite*: 11-12 or equivalent. Three hours. Mr. Wurthmann.

205 GOETHE'S FAUST Reading, analysis, and interpretation of Parts I and II of *Faust* and other works by Goethe. Collateral readings on the Faust theme in German and other literatures. *Prerequisite*: 101-102. Three hours. Mr. White. (Offered in alternate years, 1957-58.)

206 GERMAN LITERATURE: 1800-1850 Reading and interpretation of works representative of the main literary trends of this period. Lectures and reports on selected poetry, prose works and dramas by Kleist, the Romantics, Grillparzer, Heine, and others. *Prerequisite*: 101-102. Three hours. Mr. White. (Offered in alternate years, 1957-58.)

207 GERMAN LITERATURE: 1850-1900 Reading and interpretation of important works of this period in poetry, prose and drama. Lectures and reports on selected works by such representative authors as Hebbel, Keller, C. F. Meyer, Stifter, Nietzsche, and Wagner. *Prerequisite*: 101-102. Three hours. Mr. White. (Offered in alternate years, 1958-59.)

208 GERMAN LITERATURE: THE 20TH CENTURY Readings, reports, lectures on authors of the period in poetry, prose and drama. Representative works of Hauptmann, Rilke, Hofmannsthal, George, Thomas Mann, Kafka, and others will be read. *Prerequisite*: 101-102. Three hours. Mr. White. (Offered in alternate years, 1958-59.)

221-222 ADVANCED COMPOSITION AND CONVERSATION Three hours. Mr. Kahn. (Not offered 1958-59.)

232 SEMINAR FOR PROSPECTIVE TEACHERS OF GERMAN. Problems in the linguistic structure of German. Elementary introduction to the science of linguistics through an analysis of modern, colloquial German with special reference to problems useful to teachers. Open to seniors and graduate students. *Prerequisite*: 121-122 or the equivalent. Three hours. Mr. White.

281-282 SENIOR SEMINAR Special readings and research. Required of all senior concentrators. One hour.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Hebrew

COLLEGE OF ARTS AND SCIENCES

1-2 ELEMENTARY HEBREW Reading, pronunciation, elements of grammar and conversation; exercises in composition and translation, designed to prepare the student to understand the Hebrew Scriptures and modern Hebrew literature. Three hours. Mr. Kahn. (Offered in alternate years, 1959-60.)

11-12 INTERMEDIATE HEBREW Translation, conversation, and reading of texts designed to give some knowledge of the development of Hebrew life, thought, and culture from Biblical times to the present. *Prerequisite:* 1-2 or equivalent. Three hours. Mr. Kahn. (Offered in alternate years, 1960-61.)

History

COLLEGE OF ARTS AND SCIENCES

Professors Schultz (Chairman) and Evans; Associate Professors Pooley and Putnam; Assistant Professor Fletcher; Messrs. Felt and Spinner and Miss Davison

1, 2 ANCIENT HISTORY A survey of the ancient Greek and Roman worlds. Three hours. Miss Davison.

5, 6 MEDIEVAL EUROPE The history of Europe from the late Roman Empire to the Renaissance, with particular emphasis on political and cultural developments. *Prerequisite:* 5 for 6. Three hours. Mr. Pooley.

11, 12 EUROPEAN CIVILIZATION European ideas and institutions in world history. *Prerequisite:* 11 for 12. Three hours. Messrs. Fletcher and Spinner.

21-22 THE AMERICAN COLONIES American history to 1783. *Prerequisite:* sophomore standing. Three hours. Mr. Putnam.

23, 24 HISTORY OF THE UNITED STATES American history since 1783. *Prerequisite:* sophomore standing; 23 or 31 for 24. Three hours. Messrs. Schultz and Felt.

26 HISTORY OF VERMONT A history of Vermont since its foundation. *Prerequisite:* completion of or enrollment in 23. One hour. Mr. Schultz.

31 HISTORICAL DEVELOPMENT OF AMERICAN FOREIGN POLICY Foreign relations of the United States, 1775-1900. *Prerequisite:* sophomore standing. Three hours. Mr. Felt.

111-112 EARLY MODERN HISTORY The Renaissance, the Reformation, and sixteenth-century Europe, with special attention to the economic and social history of the period. *Prerequisite:* six semester hours in history, including 11. Three hours. Mr. Evans.

123-124 AMERICAN HISTORY SINCE 1900 *Prerequisite:* six semester hours in history including 12 or 24. Three hours. Mr. Putnam.

201, 202 ENGLISH HISTORY England in world history since Roman days. *Prerequisite:* twelve semester hours in history, including 12. Three hours. Mr. Schultz. (Offered in alternate years, 1958-59.)

213-214 **CANADIAN HISTORY** Canadian development from the French exploration and settlement to the present with emphasis on the evolution of self-government and relations with the United States. *Prerequisite:* twelve semester hours in history, including 12. Three hours. Mr. Putnam. (Offered in alternate years, 1958-59.)

215, 216 **EUROPE IN THE MODERN AGE** Topics in European political, social, and intellectual history; emphasis on the eighteenth and the nineteenth centuries. *Prerequisite:* twelve semester hours in history, including History 12. Three hours. Mr. Fletcher.

227-228 **AMERICAN FRONTIERS** The westward movement to the end of the nineteenth century and its influence in shaping American ideals and institutions. *Prerequisite:* twelve semester hours in history. Three hours. Mr. Putnam. (Offered in alternate years, 1958-59.)

241-242 **FRENCH REVOLUTION AND NAPOLEON** French history from 1789 to 1815, with special attention to the impact of French ideas and power upon Europe. *Prerequisite:* 215, 216 and one other course. Three hours. Mr. Evans. (Not offered in 1958-59.)

251-252 **CONTEMPORARY HISTORY** The world since 1918, stressing the background of current events. *Prerequisite:* twelve semester hours in history, including 12. Three hours. Mr. Evans.

257, 258 **AMERICAN STATESMEN** The thought and practical politics of American statesmen. *Prerequisite:* twelve semester hours in history, including 23 for 257; 24 and 257 for 258. Three hours. Mr. Schultz. (Offered in alternate years, 1959-60.)

261-262 **LATIN-AMERICAN HISTORY** The political, social and economic development since the Spanish Conquest. *Prerequisite:* twelve semester hours in history, including 12. Three hours. Mr. Putnam. (Offered in alternate years, 1959-60.)

280-281 **SEMINAR** Advanced study in a selected field (1958-59): Ancient History). By permission. Three hours. Miss Davison.

391, 392, 393, 394 **MASTER'S THESIS RESEARCH** Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Home Economics

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Associate Professor Trotter (Chairman); Professor Bailey; Associate Professors Caldwell, Knowles, and Vernon; Assistant Professors Brown, Elbert, Newton, Reid, Wakefield, and Williams; Misses Woodard and Wilson; Mrs. Jamieson and Mrs. MacDonald

Home Management

51 **HOUSE PLANNING** Survey of urban and rural housing in the United States. Selection of shelter, including site location, problems of financing, utilization of space and materials. Three hours. Miss Knowles.

53-54 HOUSEHOLD TECHNOLOGY (1-2) The application of scientific principles to the selection, operation and care of household equipment. Two hours. Miss Knowles.

102 HOME MANAGEMENT THEORY The managerial process applied to problems of the home and family. Special consideration given to use of time and energy. Two hours. Miss Knowles.

103 FAMILY ECONOMICS A study of the management of family income and capital. Concern for judging quality of textiles and clothing. Purchasing aspects of the food supply. *Prerequisite:* Economics 12. Three hours. Misses Elbert, Knowles, Newton.

153 HOME MANAGEMENT RESIDENCE Practical application of home management and group living in the Home Management Residence. A charge of \$82.50 is made to cover partial cost of board and operating expenses. Students not living on campus are also charged \$40.00 for room rent. *Prerequisite:* 102, 137. Three hours. I, II. Miss Woodard.

203 HOME MANAGEMENT PROBLEMS Application of economic and sociological principles to some problems of the home and family. *Prerequisite:* 102, 103, Psychology 1. Three hours. Misses Knowles and Woodard.

Home Economics Education

115 INTRODUCTION TO HOME ECONOMICS EDUCATION Introduction to homemaking education in relation to philosophy, professional contacts, and growth toward teacher competencies. Observation of secondary school programs, place of homemaking in general education. *Prerequisite:* junior standing. Two hours. Miss Brown.

165 METHODS OF TEACHING Methods of teaching homemaking in junior and senior high schools, and of general administration of homemaking departments in secondary schools. *Prerequisite:* 115, Psychology 1. Three hours. Miss Brown.

166 SPECIAL PROBLEMS IN HOME ECONOMICS EDUCATION Individual investigation of a selected problem to meet special needs of students. *Prerequisite:* 165. Two or three hours. Miss Brown and staff.

168 STUDENT TEACHING Supervised observation and teaching in approved secondary schools in Vermont. *Prerequisite:* 165. Seven hours. Miss Brown.

169 DEMONSTRATION TECHNIQUES (0-4) Practice in the presentation of information and the teaching of skills by visual methods. *Prerequisite:* junior standing. Two hours. Miss Knowles.

216 TEACHING ADULTS (1-2) Problems of organization and of teaching classes in home economics to meet the needs of adults; supervised experience in techniques of teaching adults. *Prerequisite:* 165 and either Education 145, 146 or Agricultural Education 100. Two hours. Miss Brown.

Family Living

111 CHILD DEVELOPMENT (2-2) Growth and development of the child within the family group. Opportunity for direct observation of children of pre-

school age. *Prerequisite:* Psychology 1; junior standing. Three hours. I, II. Mr. Vernon, Miss Wilson.

161 FAMILY RELATIONSHIPS An examination of the changing structure and functions of the American family; the effects of interpersonal family relationships on the behavior and personality of the developing individual; the periods of courtships, engagement and marriage are studied. *Prerequisite:* Psychology 1. Three hours. I, II. Mr. Vernon.

Clothing and Textiles

22 CLOTHING SELECTION AND CONSTRUCTION (1-4) The selection of clothing to meet individual needs in relation to design and appropriateness of dress. The development of clothing construction techniques. Three hours. Misses Newton and Caldwell.

73 PATTERN DESIGN AND ADVANCED CONSTRUCTION (0-6) Techniques of designing and altering flat patterns. Emphasis on advanced construction techniques and original design. *Prerequisite:* 22. Three hours. I, II. Miss Reid.

83 SURVEY OF TEXTILES (2-2) A survey of fibres, their properties and manufacturing processes. Identification, care and use of clothing and household fabrics. Three hours. Miss Newton.

123 TAILORING (0-6) Further development of construction techniques with emphasis on tailoring problems. *Prerequisite:* 73. Three hours. Miss Newton.

182 ADVANCED TEXTILES (1-4) A study of historical and sociological background to textiles and textile design with some emphasis on testing techniques and recent developments in the field. *Prerequisite:* 83. Three hours. Misses Newton and Reid.

221 COSTUME DESIGN AND DRAPING (1-4) Analysis of current fashion. Development of original design by draping techniques. *Prerequisite:* 73, 120, or permission of department. Three hours. Miss Caldwell.

Related Art

21 DESIGN (1-4) The theory and application of the elements and principles of design. Three hours. Misses Caldwell and Reid.

71 COSTUME DESIGN (0-4) The application of design fundamentals and principles to fashion planning. Techniques of fashion illustration. *Prerequisite:* 21. Two hours. Miss Reid.

120 HISTORY OF COSTUME (2-2) History of Costume stressing the background philosophy and events of each period as reflected in dress. Adaptation of historic design to modern fashion. *Prerequisite:* 71. Three hours. Miss Caldwell.

130 HOME FURNISHING I (1-4) The application of design fundamentals to the problems involved in furnishing the home. *Prerequisite:* 21. Three hours. Miss Reid.

230 HOME FURNISHING II (1-4) Studies in interior design with special emphasis given to period furnishing, its present use and influence upon modern furnishing. *Prerequisite:* 130. Three hours. Miss Caldwell.

Food and Nutrition

35 SURVEY OF FOOD PREPARATION (2-4) Basic principles of food preparation, with some laboratory application. Four hours. I, II. Miss Woodard.

43 BASIC CONCEPTS OF FOOD AND NUTRITION Food selection in relation to human growth and health. Three hours. I, II. Miss Elbert.

48 ELEMENTARY NUTRITION AND FOOD PREPARATION (3-2) A course in elementary nutrition and food preparation. For pre-clinical nursing students only. Not for college credit. Mrs. Jamieson.

88 NUTRITION AND FOOD PREPARATION (2-2) (Summer Session) For students in Nursing. The fundamentals of normal nutrition with laboratory experience in calculating food values, planning adequate meals; basic food preparation techniques. Three hours. Miss Williams.

89-90 DIET MODIFICATION IN DISEASE For students in Nursing. A study of the diet modification in the treatment of disease. Emphasis is placed on the important role of diet in the nursing care of the patient. Laboratory work is integrated with hospital experience. One hour. (Integrated with Nursing Education 19-20 Medical and Surgical Nursing.) Miss Williams.

135 ADVANCED FOOD PREPARATION (1-6) The scientific principles and fundamental processes underlying food preparation and preservation with practical applications. *Prerequisite:* 35, Chemistry 2. Three hours. Miss Williams.

137 MEAL MANAGEMENT (1-5) The principles involved with practice in planning, preparing and serving family meals at different cost levels. *Prerequisite:* 35, 43, 103 (may be taken concurrently). Three hours. I, II. Miss Williams.

144 APPLIED NORMAL NUTRITION (2-2) Nutrition and the individual; people's food habits and the problems involved in food selection to promote good nutrition. *Prerequisite:* 43. Three hours. Miss Williams.

236 EXPERIMENTAL FOOD PREPARATION (1-4) Methods and techniques used in experimental work in foods. Independent laboratory study of problems in food preparation. *Prerequisite:* 135; Agricultural Biochemistry 171. Three hours. Miss Elbert.

243 NUTRITION AND DIET (3-2) The principles of human nutrition; the nutritive value of foods with application in calculating food requirements and diets for children, adults and family groups. *Prerequisite:* 135; Agricultural Biochemistry 171; Zoology 52. Four hours. Miss Bailey.

244 DIET THERAPY (2-2) The adaptations of the normal diet in conditions affected by or affecting the utilization of food. *Prerequisite:* 243. Three hours. Miss Bailey.

246 READINGS IN FOODS A critical survey of the literature on the recent developments in food research. *Prerequisite:* senior standing; 135; Agricultural Biochemistry 171. Two or three hours. The staff.

248 READINGS IN NUTRITION A critical survey of the literature on recent developments in nutrition. *Prerequisite:* 243. Two or three hours. The staff.

Institutional Management

139 GENERAL INSTITUTIONAL MANAGEMENT (1-2) A brief survey of the field of institutional management. The organization and management of small units. Personnel problems, floor plans and equipment layouts are stressed. Practical applications of quantity food production are included. *Prerequisite:* 137. (Not open to Dietetic majors.) Two hours. Miss Wakefield.

186 QUANTITY FOOD PRODUCTION (1-4) Practical applications of principles, methods, and techniques used in quantity food production. *Prerequisite:* 135. Three hours. Miss Wakefield.

187 INSTITUTIONAL ADMINISTRATION A survey of the field of institutional management. Units on organization, management and personnel problems. Time and motion studies, sanitation, food cost control are included. *Prerequisite:* 186. (May be taken concurrently.) Three hours. Miss Wakefield.

288 INSTITUTIONAL MARKETING AND ACCOUNTING (3-2) Advanced course in institutional management. Units on advanced management, marketing, accounting, equipment, floor plans, layouts and related material on design and furnishing in the different types of food services. *Prerequisite:* 186, 187. Four hours. Miss Wakefield.

Home Economics Seminars and Research

1 ORIENTATION The problems of adjustment to college life; evaluation of professional opportunities in home economics. One hour. Mrs. Trotter.

151 SENIOR SEMINAR Discussions of home economics as a profession. The professional ethics and responsibilities of a home economist. Special readings and discussion of research and progress in the field. One hour. Mrs. Trotter.

197, 198 SENIOR PROBLEMS Supervised study in a field of home economics. Findings submitted in a form prescribed by the department. One to three hours. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged. The staff.

Horticulture

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Professor Blasberg (Chairman); Associate Professor Hopp; Mr. Calaban

51, 52 GENERAL HORTICULTURE (3-0) A survey of the field of horticulture. First semester: the requirements of horticultural crops for productive growth. Mr. Blasberg. Second semester: fundamentals supporting some of the horticultural practices. *Prerequisite:* Botany 1 or permission of the department, 51 for 52. Three hours. Messrs. Blasberg and Hopp.

54 SMALL FRUIT CULTURE (2-2) Some fundamental principles underlying plant growth and fruit production and the relation of these principles to practice. *Prerequisite:* Botany 1. Three hours. Mr. Blasberg.

56 PLANT PROPAGATION (1-2) The history, theory, and practice of multiplying plants by various methods. *Prerequisite:* Botany 1. Two hours. Mr. Hopp.

151 ADVANCED TREE FRUITS (2-2) A study of cultural practices and the principles involved in modern fruit production. *Prerequisite:* 52. Three hours. Mr. Calahan. (Offered in alternate years, 1958-59.)

152 PLANT BREEDING (2-2) Application of the principles of genetics to practical plant breeding. *Prerequisite:* Botany 105 or Zool. 115. Three hours. Mr. Hopp. (Offered in alternate years, 1958-59.)

153 ADVANCED VEGETABLE CULTURE (2-2) A study of the culture of the more important vegetable crops and a review of some of the recent experimental work. *Prerequisite:* 52. Three hours. Mr. Hopp. (Offered in alternate years, 1959-60.)

197, 198 SENIOR RESEARCH The student works on a research problem under the direction of a qualified staff member and submits the findings in a written form prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

201 PLANT NUTRITION (2-4) The effect of soil management, fertilizers, environmental factors and mineral deficiencies on the functioning and performance of plants. *Prerequisite:* Botany 103, Chem. 131-132 or 35, or permission of the department. Four hours. Mr. Blasberg. (Offered in alternate years, 1959-60.)

281, 282 HORTICULTURE SEMINAR Discussion of horticultural topics. Students are required to prepare and present papers on selected subjects. Open to graduate students and seniors by permission. One hour. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Mathematics

COLLEGE OF TECHNOLOGY

Professors Schoonmaker (Chairman) and Fraleigh; Associate Professors Dwork and Riggs; Assistant Professors Izzo, Nicholson, and Simond; Miss Howard, Mr. Lighthall and Miss Morrissey

1 ELEMENTARY COLLEGE ALGEBRA For students who do not intend to concentrate in science or mathematics. Recommended minimum preparation: one year each of secondary school algebra and geometry. Three hours.

2 PLANE TRIGONOMETRY For students who do not intend to concentrate in science or mathematics. *Prerequisite:* 1 or 9. Three hours.

4 MATHEMATICS OF FINANCE The mathematical theory of finance applied

to interest and investments, annuities, and life insurance. *Prerequisite:* 1 or 9. Three hours.

*5 PLANE ANALYTIC GEOMETRY AND CALCULUS For students who intend to concentrate in science or mathematics. This course consists of an introduction to analytic geometry and calculus. It prepares students for Mathematics 12. *Prerequisite:* 2, or sufficiently high scores on the algebra and trigonometry placement tests. Two hours.

7, 8 FUNDAMENTALS OF MATHEMATICS To provide an understanding of basic logical and mathematical ideas (both ancient and modern) and some of their applications to other fields of knowledge. Emphasis is on fundamental concepts and logical methods of reasoning rather than on the development of techniques. Many of the usual topics of algebra, trigonometry, and analytic geometry are considered in their relation to certain basic concepts pervading all mathematics. For students in the arts, social sciences, and others. Recommended minimum preparation: one year each of secondary school algebra and geometry. *Prerequisite:* 7 for 8. Three hours.

*9 COLLEGE ALGEBRA For students who intend to concentrate in science or mathematics, but who are not sufficiently well prepared to take Mathematics 5, 10, or 11. Recommended minimum preparation: two years of secondary school algebra and one year of secondary school geometry. Four hours.

*10 PLANE TRIGONOMETRY, ANALYTIC GEOMETRY AND CALCULUS For students who intend to concentrate in science or mathematics. A full treatment of plane trigonometry followed by an introduction to plane analytic geometry and calculus. This course prepares students for Mathematics 12, and normally follows Mathematics 9. *Prerequisite:* 9, or a sufficiently high score on the algebra placement test. Five hours.

*11 ALGEBRA, TRIGONOMETRY, ANALYTIC GEOMETRY AND CALCULUS For students who intend to concentrate in science or mathematics. A few topics from college algebra are followed by a review of plane trigonometry and an introduction to plane analytic geometry and calculus. This course prepares students for Mathematics 12. *Prerequisite:* High school trigonometry, or the equivalent, and a sufficiently high score on the algebra placement test. Five hours.

*12 PLANE ANALYTIC GEOMETRY AND CALCULUS For students who intend to concentrate in science or mathematics. A continuation of the study of analytic geometry, differential and integral calculus and their applications. *Prerequisite:* 5, 10 or 11. Five hours.

* The enrollment of students who desire eventually to take Mathematics 12 will depend on their previous record and their score on a mathematics placement test. Students not qualified to enroll in Mathematics 5, 11, or 10 will be enrolled in Mathematics 9. (The order 5, 11, 10, and 9 represents various levels of preparatory achievement from highest to lowest.) A student who takes Mathematics 9 in the fall of his freshman year and who, because of his chosen curriculum, needs to have completed Mathematics 12 prior to the beginning of his sophomore year, will need to take Mathematics 12 during the summer between his freshman and sophomore years. Those who are deficient in high school mathematics are urged to attend summer school prior to their first semester in college.

21, 22 **SOPHOMORE MATHEMATICS** For students who intend to concentrate in science or mathematics. Topics included are solid analytic geometry, partial differentiation, multiple integrals, infinite series and elementary differential equations. *Prerequisite:* 12; 21 for 22. Three hours.

32 **THEORY OF EQUATIONS** Properties of polynomials in a field, the theory of partial fractions, equations in the rational, real and complex number fields, symmetric functions, discriminants, resultants, and the solution of systems of equations of higher degree. *Prerequisite:* 12. Three hours.

181-182 **SENIOR PROBLEM** Investigation of some area or problem, new to the student, under the direction of an assigned staff member, culminating in a report. This course is available only to candidates for the Bachelor of Science degree in Mathematics. Three hours.

203 **THEORY OF DETERMINANTS AND MATRICES** A study of the basic concepts, theorems, and applications of determinants and matrices, including the theory of vector spaces and quadratic forms. *Prerequisite:* 22. Three hours. (Offered in alternate years, 1958-59.)

204 **THEORY OF MODERN COMPUTING MACHINES AND NUMERICAL ANALYSIS** A study of the mathematical theory underlying modern electronic computing machines. This course includes numerical analysis, programming and coding. *Prerequisite:* 203 or permission of instructor. Three hours. (Offered in alternate years, 1958-59.)

207-208 **ADVANCED CALCULUS** A critical study of the calculus beginning with limits, continuity, differentiation, and Riemann integrals, together with a treatment of those topics not included in the earlier course as a foundation for more advanced courses in analysis and applied mathematics. *Prerequisite:* 22. Three hours.

209, 210 **MODERN GEOMETRY** Projective geometry, differential geometry, foundations of geometry, algebraic geometry, and topology. *Prerequisite:* 22; 209 for 210. Three hours. (Offered in alternate years, 1958-59.)

211 **DIFFERENTIAL EQUATIONS** Solutions of linear ordinary differential equations, the Laplace transformation, and series solutions of differential equations. *Prerequisite:* 22. Three hours.

212 **APPLIED MATHEMATICS** Boundary-value problems, orthogonal functions, and vector analysis. *Prerequisite:* 211. Three hours.

213, 214 **APPLIED MATHEMATICS** First semester: partial differential equations, solutions of partial differential equations of mathematical physics, and functions of a complex variable. Second semester: calculus of variations, difference equations, and integral equations. *Prerequisite:* 212; 233 for 214. Three hours.

215-216 **MODERN HIGHER ALGEBRA** An introduction to the fundamental concepts of modern higher algebra—in particular: groups, rings, fields, integral domains, lattices, polynomials, matrices, and vector spaces. Special emphasis is given to Boolean algebra and its applications. *Prerequisite:* 22; 32 is desirable. Three hours. (Offered in alternate years, 1959-60.)

218 **MATHEMATICAL STATISTICS** A study of frequency distributions including the calculation of moments, standard deviations and related quantities, the theory of least squares and its application to scientific problems, the Chi-square test and Student's t-test with a discussion of the validity of statistical results. *Prerequisite:* 22. Three hours. (Offered in alternate years, 1959-60.)

220 **VECTOR ANALYSIS** An introduction to vector methods including the elements of vector algebra and vector calculus with applications to physics and mechanics. *Prerequisite:* 22. Three hours. (Offered in alternate years, 1958-59.)

231-232 **FUNCTIONS OF A COMPLEX VARIABLE** Differentiation and integration of a function of a complex variable, mapping of elementary functions, infinite series, properties of analytic functions, analytical continuation, calculus of residues, contour integration, integral functions, meromorphic functions, Riemann surfaces, and conformal representation. *Prerequisite:* 208. Three hours. (Offered in alternate years, 1958-59.)

233-234 **THEORY OF FUNCTIONS OF REAL VARIABLES** The functions of real variables, including such topics as point sets and measure, transfinite numbers, Riemann and Lebesgue integrals, and sequences of functions. Considerable outside reading is assigned. *Prerequisite:* 208. Three hours. (Offered in alternate years, 1959-60.)

391, 392, 393, 394 **MASTER'S THESIS RESEARCH** Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Medical Technology

COLLEGE OF MEDICINE

INTRODUCTION TO MEDICAL TECHNOLOGY During the first semester of the freshman year, the students are expected to attend a series of weekly, one-hour sessions which serve as an introduction to medical technology. These sessions are held in the medical technology laboratory at the College of Medicine.

101-102 **BASIC TECHNIQS** Principles, procedures, and sources of error in medical laboratory tests. Includes hematology, bacteriology, serology, parasitology, blood bank, urinalysis and basal metabolism. Lectures and laboratory sessions during last six weeks of summer preceding fall semester. Six hours. Seminars and special problems, fall semester. Two hours. Miss Maxson.

111-112 **BIOCHEMISTRY FOR MEDICAL TECHNOLOGISTS** First semester: This course includes the course in medical biochemistry as given to medical students (for description see catalogue of the College of Medicine) and includes additional work in preparation of reagents and analytical procedures. Second semester: The course includes the lectures in medical biochemistry as given to the medical students but does not include the laboratory work. Dr. Pierce and staff.

HOSPITAL ASSIGNMENTS Rotating assignments in various departments of hospital, medical college, and public health diagnostic laboratories designed to give the student actual experience in medical laboratory procedures. Spring semester and summer following graduation. Six hours.

Military Science and Tactics

ARMY ROTC

Lt. Col. White (Chairman); Major Nelson; Captains French and Detherow; 1st Lt. Davis

1-2 OUR ARMY AND HISTORY Organization of the Army and ROTC; individual weapons and marksmanship; American military history; school of the soldier and exercise of command. Two hours.

11-12 FIREPOWER Military map and aerial photograph reading; role of the army; crew-served weapons and the firepower potential; gunnery and fire control; school of the soldier and exercise of command. Two hours.

101-102 THE ARMY LEADER Leadership; military teaching methods; organization, functions, and missions of the arms and services; small unit tactics and communications; school of the soldier and exercise of command. Three hours.

111-112 COMMAND Operations; logistics; military administration and personnel management; service orientation; school of the soldier and exercise of command. Three hours.

Music

COLLEGE OF ARTS AND SCIENCES

Professors Bennett (Chairman) and Pappoutsakis; Assistant Professors Kinsey, Schultz, Start, and Weinrich

History and Theory of Music

1, 2 SURVEY OF MUSICAL LITERATURE Orchestral, chamber, choral, and operatic music for concert and radio listeners. First semester: from Palestrina to Beethoven; second semester: from Schubert to Stravinsky. Three hours. Mr. Bennett.

4 SURVEY OF OPERA The Metropolitan Opera repertory, also early and recent operas will be studied—works by Monteverdi, Purcell, Gluck, Mozart, Wagner, Verdi, Debussy, Berg, and others. Attention will be given to the sources of the texts, to national and individual styles, and to various theories concerning the union of drama with music. Three hours. Mr. Bennett. (Offered in alternate years, 1958-59.)

5-6 ELEMENTARY SIGHT-SINGING, EAR-TRAINING, AND THEORY Three hours. Mr. Pappoutsakis.

7-8 ELEMENTARY HARMONY Structure and use of chords; harmonization of melodies in various styles; simple original composition. *Prerequisite:* familiarity with scales and keys, and ability to read simple music at the piano. Three hours. Mr. Kinsey.

11-12 ADVANCED SIGHT-SINGING, EAR-TRAINING, AND THEORY *Prerequisite:* 5-6. Three hours. Mrs. Start.

201-202 ADVANCED HARMONY AND HARMONIC ANALYSIS *Prerequisite:* 7-8. Three hours. Mr. Kinsey.

205-206 COUNTERPOINT *Prerequisite:* 7-8. Three hours. Mr. Bennett.

207-208 ORCHESTRATION AND CONDUCTING The characteristics of instruments; arranging for orchestra; technique of the baton. *Prerequisite:* 7-8; 201-202 is also desirable. Three hours. Mr. Pappoutsakis. (Offered in alternate years, 1958-59.)

209-210 ADVANCED ORCHESTRATION Arranging for full orchestra, including a study of the less frequently used instruments. This course presupposes a knowledge of the range, transposition, and characteristics of the usual orchestral instruments, and the ability to arrange music of moderate difficulty for strings, woodwind and brass. *Prerequisite:* 207-208. Three hours. Mr. Pappoutsakis. (Offered in alternate years, 1959-60.)

221, 222 HISTORY OF MUSIC Changes in musical structure and style, and their relation to contemporaneous artistic, literary, religious, and social movements. First semester: the Renaissance, Bach, Mozart; second semester: Beethoven, Romanticism, Brahms, the Twentieth Century. *Prerequisite:* 1, 2 and 7-8. Three hours. Mr. Bennett.

For Music Education, see page 106.

For School Music, see Elementary Education 111-112 and 113.

Applied Music

41, 42 CHOIR Study of works by Bach, Handel, Palestrina, modern Russian composers and others. Christmas, Lenten-Easter, and other concerts; annual opera; Baccalaureate service. Three hours of rehearsal weekly, if taken for credit. *One hour. Mr. Bennett, director; Miss Marston, organist.

43, 44 ORCHESTRA Study of symphonic and other instrumental literature. The orchestra plays at concerts and the opera, alone and with the choir. Three hours of rehearsal weekly. *One hour. Mr. Pappoutsakis, conductor.

45, 46 CHAMBER MUSIC Study and performance of trios, string quartets, piano quartets and quintets of the great masters. One two-hour meeting weekly, or equivalent, for each group. Outside practice required. Students wishing to elect this course must satisfy the instructor as to their instrumental proficiency. One hour. Mrs. Start.

47, 48 PIANO Adapted to the students' purposes and needs; may include repertoire, technic, improvising accompaniments to melodies, and sight-reading. *One or two hours. Mr. Kinsey.

49, 50 ORGAN Preparation for recital and church service playing, including hymns and accompaniments. *One or two hours. Mr. Weinrich.

53, 54 VOICE Instruction in accepted natural vocal production; repertoire (in the course of four years) of old Italian songs, German lieder, modern French songs, oratorio and operatic arias. *One or two hours. Mr. Weinrich.

* All courses in applied music may be taken for several years, but no student may receive credit toward graduation totalling more than six semester hours in choir or orchestra or both together. One hour of credit per semester will be given for one private lesson in piano, organ, voice, or violin under a member of the department, and five hours practice per week, on condition that the instruction be accompanied or preceded by either Music 1, 2 or 7-8; two hours credit will be given for two private lessons and ten hours practice per week, on the same condition.

55, 56 VIOLIN Study of fundamental technic and tone production, preparing for orchestral, chamber music and solo performance. For those qualified, advanced study of artist repertoire. *One or two hours. Mrs. Start.

57, 58 VIOLIN CLASS Elementary class instruction in violin. Two meetings per week, and outside practice. Required of all music education students; elective to others. One hour. Mrs. Start.

59, 60 WIND CLASS Elementary class instruction in the woodwind and brass instruments, including a study of methods and materials for the instrumental school music program. Two meetings per week, and outside practice. Required of all music education students; elective to others. One hour. Mr. Schultz.

For the fees for instruction and use of organ, see the Index under "Fees."

Nursing

COLLEGE OF EDUCATION AND NURSING

Professor Crabbe (Chairman); Associate Professors Gjessing, Lamden, Oakley, and Schein; Assistant Professors Burroughs, Dustan, Ichter, MacDonald, Milligan, Williams, and Woodruff; Instructors Bonney, McColl, and Tagliente

1-2 INTRODUCTION TO NURSING In the first semester, the community health picture is generally surveyed, including health accomplishments, problems and resources. With this background, a beginning appreciation of the role of the nurse in nurse-patient relationships is developed. The second semester course is an introduction to the practice of nursing, primarily in meeting the patient's personal needs. Emphasis is placed on application of principles and development of social, communicative, and manual skills. Beginning experience in the hospital situation is provided. Two hours; four hours. Miss Milligan.

3 FUNDAMENTALS OF NURSING (Summer Session) The continued study of the practice of nursing, developing the ability to give patient-centered care based on the application of principles and the acquisition of skills. Learning experiences are provided in the laboratory and in the hospital with patient contact. *Prerequisite:* 1-2. Three hours. Miss Milligan, Mrs. Bonney.

5 HISTORY OF NURSING Designed to orient the student to the philosophy of professional nursing. Through a study of the heritage of modern nursing the student gains insight into attitudes and ideals upon which to examine and enrich her own philosophy. Movements in the social structure which affect nursing are studied in relation to their historical development. Two hours. Miss Crabbe.

7 HOME NURSING (0-2) Care of the family during illness. *Prerequisite:* junior standing in home economics curriculum. One hour. Miss Milligan.

9-10 CHEMISTRY (3-2) The course has a two-fold objective—to present chemistry in the culture of today; to provide a basic understanding of normal and abnormal human physiology. During the first semester there is a review of inorganic chemistry in which medical applications are stressed; this is followed by a month's consideration of organic chemistry as a basis for physiologic chemistry. The second semester is devoted to biochemistry with a consideration of the structure of important compounds, digestion, absorption, metabolism

and excretion. The laboratory is designed to familiarize students with common chemicals and their reactions. Four hours. Messrs. Schein, Lamden, and Gjessing.

12 MICROBIOLOGY (Summer Session) An orientation to the general principles of microbiology as a basis for understanding the role of microorganisms in health and disease. Emphasis is placed on microbial control, infection, and immunity. Applications to environmental sanitation are considered. Three hours. Misses Woodruff and Ichter.

15-16 HUMAN ANATOMY AND PHYSIOLOGY The fundamentals of structure and the principles of function of the normal human body are presented as a scientific foundation for study in the professional field for students of nursing and dental hygiene. Laboratory study emphasizes anatomical and physiological principles through dissection, physiological experiments and examination of histological preparations. Three hours. Misses Ichter and Woodruff.

19-20 MEDICAL AND SURGICAL NURSING A presentation of learning opportunities of the various aspects of medical and surgical nursing with the integration of pharmacology, pathology, geriatrics, communicable diseases, diet therapy, emergency nursing, operative asepsis technique, social and health aspects, rehabilitation and principles of health teaching. Clinical practice provides the opportunity for the student to apply theoretical learning. Nine hours. Mrs. Bonney and Misses McDonald, McColl, Tagliente, and Williams.

118 SURVEY OF CONTEMPORARY NURSING A study of nursing education and nursing service as conducted today. An overview of the problems confronting the professional nurse and the steps being taken toward the solution of these problems. Two hours. Miss Oakley.

123 OBSTETRIC NURSING Correlated theory and practice in the principles, dynamics, and management of health conditions incident to child-bearing. Development of nursing skills, both communicative and technical, through guided experience in the obstetric, and related out-patient services. Emphasis is placed on the expanding opportunities in maternity nursing from a primarily therapeutic role to one of family-centered care. Eight hours.

125 PEDIATRIC NURSING Instruction and field experience with both well and sick children. Students are led to an understanding, not only of disease and nursing care appropriate to pediatric conditions, but of the effect of illness on the development of the individual child. Emphasis is placed on the nurse as a functioning member of the pediatric health team. The importance of teaching the child and his parents, both by motivation and example, is stressed in all aspects of the course. Experience in the care of sick children is provided. Eight hours.

127 PSYCHIATRIC NURSING A sequence of learning experiences designed to assist the student in the development of an appropriate understanding of the mentally ill patient. The clinical experience is planned around the role of the nurse in caring for such patients and is an integral part of the total preparation of the basic professional nurse. Inter-personal relationships are explored as they influence patient care. Students participate in varied treatment programs. Six hours. Miss Burroughs.

129 **TUBERCULOSIS NURSING** An epidemiological approach to the control of communicable disease. The broad implications for prevention and rehabilitation, focusing on the care of the patient with tuberculosis. International, national and local programs for prevention and control of communicable diseases are emphasized. Guided experience in patient care is combined with clinics, conferences and individual instruction, serving to increase understanding of the patient with long-term illness as well as to gain skill in nursing care and treatment of patients with tuberculosis. Three hours.

131 **PRINCIPLES OF PUBLIC HEALTH NURSING** A study of public health nursing functions, trends, and activities, with special emphasis on the role of nurses in family health services. Two hours. Miss Dustan.

132 **PRINCIPLES OF PUBLIC HEALTH** A consideration of the organizational framework and basic services of health agencies as well as the evolution and trends in public health programs. Two hours. Dr. Aiken.

133 **PUBLIC HEALTH NURSING IN THE COMMUNITY** Supervised field instruction in public health nursing agencies: Division of Public Health Nursing, Vermont Department of Health, or the Burlington Visiting Nurse Association. Two hours. Miss Dustan.

181 **ANALYSIS OF SELECTIVE NURSING SITUATIONS** Course content is developed around three areas: comprehensive nursing care, appreciation of the head nurse's role, and concepts of guiding students' learning. Field experience is planned on an individual basis to meet students' needs. Six hours. The staff.

Philosophy and Religion

COLLEGE OF ARTS AND SCIENCES

Professor Dykhuizen (Chairman); Associate Professor Davis; Assistant Professors Hall, Kahn, Sadler, and Wessen; Miss Bullock

Philosophy

1 **INTRODUCTION TO PHILOSOPHY** A presentation of the chief problems of philosophy. *Prerequisite:* sophomore standing. Three hours. Messrs. Dykhuizen and Hall.

2 **LOGIC** The principles and conditions of correct thinking with emphasis on the detection of fallacies of thought. *Prerequisite:* sophomore standing. Three hours. Mr. Hall.

4 **ETHICS** An examination of the ideas underlying man's moral behavior. The aim is to develop an acceptable and coherent theory of conduct. *Prerequisite:* sophomore standing. Three hours. Mr. Dykhuizen.

107, 108 **HISTORY OF PHILOSOPHY** First semester: ancient and medieval philosophy; second semester: modern philosophy. *Prerequisite:* 1; junior standing. Three hours. Mr. Dykhuizen.

109 **HISTORY OF AMERICAN PHILOSOPHY** The thought of leading American philosophers from colonial times to the present. *Prerequisite:* 1; junior standing. Three hours. Mr. Dykhuizen.

202 CONTEMPORARY PHILOSOPHIC THOUGHT A study of the philosophic ideas of such men as Russell, Dewey, and Whitehead, and of such movements as pragmatism, logical empiricism and existentialism. *Prerequisite:* 1; junior standing. Three hours. Mr. Hall. (Offered in alternate years, 1957-58.)

206 SOCIAL PHILOSOPHY The meanings and values inherent in social life. *Prerequisite:* 1 or 4; junior standing. Three hours. Mr. Hall. (Offered in alternate years, 1958-59.)

214 INTELLECTUAL BACKGROUND OF MODERN LIFE Intellectual movements which have influenced the thought and life of today. *Prerequisite:* senior standing or permission of the instructor. Three hours. Mr. Dykhuizen.

For Economic Philosophy, see Economics 295 and 296; and for Political Philosophy, see Political Science 211, 212.

Religion

1, 2 HISTORY OF RELIGION Introductory course in the history and philosophy of the world religions. First semester: Confucianism, Taoism, Hinduism, Buddhism; second semester: Judaism, Christianity, Islam. *Prerequisite:* 1 for 2 and sophomore standing. Three hours. Mr. Sadler.

11 BIBLE A study of the religious thought of selected writers of the Bible. *Prerequisite:* sophomore standing. Three hours. Messrs. Kahn and Sadler. (Offered in alternate years, 1958-59.)

101 RELIGION AND SOCIETY The role of religion in society. Beginning with an analysis of religion in primitive society, this course traces the nature and function of religion in higher culture. *Prerequisite:* Religion 2 or Sociology 1 or Psychology 1, and junior standing. Three hours. Mr. Sadler.

102 PHILOSOPHY OF RELIGION A critical analysis of the basic concepts and values which have emerged from man's religious experience. *Prerequisite:* Religion 2 and junior standing. Three hours. Mr. Sadler. (Offered in alternate years, 1959-60.)

152 TRENDS IN CONTEMPORARY RELIGION A survey and evaluation of present-day religious thought and movements. *Prerequisite:* Religion 2 or one year of philosophy; junior standing. Three hours. Mr. Sadler. (Offered in alternate years, 1958-59.)

Physical Education

MEN

Associate Professors Post (Chairman), Donnelly, and Evans; Assistant Professor Strassburg; Mr. LaPointe

REQUIRED COURSES: A two-year program of general physical education, to be completed during the freshman and sophomore years, is required for graduation of all college men. Those with serious physical defects may be given restricted work or may be excused by the Director of Student Health. *The semester hours listed for physical education are in addition to the total number of hours required for a degree in a specific curriculum.*

FRESHMAN AND SOPHOMORE PHYSICAL EDUCATION A seasonal sports program with attention given to posture, body-building exercises, and the funda-

mentals and skills of various sports and physical activities. Aims to develop and improve skills, coordination and endurance; to establish regular habits of exercise; and to instill an intelligent attitude toward and interest in sports activities. Fall-winter: football, touch football, cross country, tennis, calisthenics, basketball, volleyball, wrestling, apparatus and tumbling, handball, swimming, skiing, badminton. Winter-spring: badminton, basketball, calisthenics, volleyball, wrestling, handball, apparatus and tumbling, swimming, skiing, indoor and outdoor track, softball, tennis, baseball. Two hours weekly. One hour. The staff.

Men students interested in physical education electives should see the women's physical education section for the following course descriptions: First Aid, Water Safety, Dance Technique and Analysis.

Physical Education

WOMEN

Assistant Professor Phillips (Chairman); Misses McAndrews, Nass, Peterson and Rice

REQUIRED COURSES: A two-year program of physical education, normally completed during the freshman and sophomore years, is required of all college women. Medical and physical examinations are required of all new students, and recommendations are made as to the quantity and type of activity advisable. *The semester hours listed for physical education and hygiene are in addition to the total number of hours required for a degree in a specific curriculum.*

The required uniform consists of a regulation short and shirt, white rubber soled tennis shoes, white ankle socks, a regulation black leotard and colored skirt. All uniforms must be of a regulation style and color.

1-2 FRESHMAN PHYSICAL EDUCATION Provides experience in team, individual and dual sports, modern dance, and body mechanics to stimulate the desire for optimum fitness essential for a well-integrated personality, to develop desirable attitudes and skills in responsible cooperative behavior and democratic understandings for the socially mature person, and to develop competencies for re-evaluating experiences in terms of individual needs and capacity for growth in intelligent self-direction. Two hours weekly. One hour.

11-12 SOPHOMORE PHYSICAL EDUCATION Provides opportunities for electing a variety of activities to develop competencies in special interest areas: archery, badminton, basketball, bowling, camp craft, field hockey, folk dancing, square dancing, modern dancing, social dancing, fencing, golf, lacrosse, recreational games, Red Cross Life Saving, Red Cross Water Safety Instructors' Course, riflery, sailing, softball, skiing, skating, swimming, table tennis, tennis, and volleyball. Two hours weekly. One hour.

22 FIRST AID (1-1) Includes the Standard and Advanced First Aid Courses of the American Red Cross. Red Cross certificates are given upon successful completion. Open to men and women. One hour credit in all colleges except Arts and Sciences.

26 WATER SAFETY (2-2) Includes material in the American National Red Cross Water Safety Instructors' Training Course. Upon successful completion of course the Red Cross certificate is given. *Prerequisite:* at least 18 years of age; hold an active Red Cross Senior Life Saving Certificate. Open to men and women. Two hours credit in all colleges except Arts and Sciences.

41-42 HEALTH INSTRUCTION (HYGIENE) Principles and problems in personal and community health. Required of all women students except those in the nursing curriculum. One hour weekly. One hour.

50 DANCE TECHNIQUE AND ANALYSIS (1-4) The history, technique, theory and composition elements of movement as it is found in dance and the related arts. Training through technique, improvisation, compositional problems and performance. *Prerequisite:* sophomore standing or consent of instructor. Open to men and women. Three hours.

Physics

COLLEGE OF ARTS AND SCIENCES

Professors Walbridge (Chairman) and Skapski; Associate Professors Rooney and Woodward; Assistant Professors Crowell and Howard; Mr. Depatie

Note: Full credit can be granted for not more than one of the following year courses: 1-2; 5-6; 21-22.

1-2 INTRODUCTORY PHYSICS (2-2) For students not concentrating in a science. Subjects included are mechanics, heat, sound, light, electricity, and magnetism. Demonstration lectures, presenting experimental facts and theoretical conclusions, are closely coordinated with laboratory work. *Prerequisite:* one year each of secondary school algebra and geometry. Three hours. The staff.

5-6 GENERAL PHYSICS (3-2) For students concentrating in a biological science. The first semester deals with mechanics and heat; the second with sound, light, electricity, magnetism and atomic physics. *Prerequisite:* Math. 2 or 8 or 11. (Math. 11 may be taken concurrently.) Four hours. The staff.

21-22 GENERAL PHYSICS (4-2) For engineers and students concentrating in a physical science. The first semester deals with mechanics and heat; the second with sound, light, electricity, magnetism, and atomic physics. *Prerequisite:* Math. 21 (may be taken concurrently with Physics 21). Five hours. The staff.

81-82 THE CULTURAL BACKGROUND OF THE DEVELOPMENT OF SCIENCE (3-0) The history of formation of the scientific method from the earliest beginning until the present time; the rise and fall of different scientific concepts and theories; the accumulation of information from observation and experiment and the evolution of the experimental method; the relation between science, technology and their contemporary cultural and social environment. *Prerequisite:* a one year college course in mathematics, and either physics or chemistry. Three hours. Mr. Skapski.

171, 172 MODERN PHYSICS (2-2) First semester: behavior of electrons in electric and magnetic fields, photoelectricity, thermionic emission, simple

vacuum tube circuits, particles and waves. Second semester: atomic structure, X rays and crystals, nuclear transformations, nuclear power and semi-conductors. *Prerequisite:* 22* and Math. 21 for 171; 171 or E.E. 109 for 172. Three hours. Mr. Rooney.

211, 212 MECHANICS AND WAVE MOTION (3-0) Continuation and developments of the principles and methods of mechanics with emphasis on the integration of fundamental physical principles with mathematics and with the extension of these principles to wave motion. First semester: forces and other vector quantities, work and energy; second semester: the dynamics of rigid bodies and wave motion. *Prerequisite:* 21*; Math. 211 taken concurrently; 211 for 212. Three hours. Mr. Woodward. (Offered in alternate years, 1958-59.)

241, 242 ELECTRICITY AND MAGNETISM (3-2) The fundamental principles; magnetic and electric field strengths and potentials. Resistance and energy relations in direct current circuits; capacitance and inductance; applications to transient phenomena; alternating currents. First semester: basic principles of magnetism and electrostatics, resistance and energy relations; second semester: capacitance, inductance and alternating currents. *Prerequisite:* 22* and Math. 211 taken concurrently for 241; 241 for 242. Three hours. Mr. Crowell.

261, 262 OPTICS (2-2) A geometrical theory of reflection and refraction, mirrors and lenses; the wave properties of light, interference and diffraction, polarized light. First semester: the centered optical system; second semester: physical optics and spectroscopy. *Prerequisite:* 22* for 261; Math. 21 for 262. Three hours. Mr. Woodward. (Offered in alternate years, 1959-60.)

271, 272 ADVANCED ELECTRON AND ATOMIC PHYSICS (3-0) Further consideration of some of the subject matter of 171, 172 with special attention to more advanced mathematical theory. First semester: free electrons and electromagnetic radiations, spectroscopy; second semester: special relativity, X rays, nuclear physics. *Prerequisite:* 17 or E.E. 110 or Chem. 142 and Math. 211; 271 for 272. Three hours. Mr. Howard. (Offered in alternate years, 1958-59.)

273 THERMODYNAMICS (3-0) Basic concepts of thermodynamics including the characteristic functions, and their application to determination of equilibrium conditions in homogeneous and heterogeneous systems. *Prerequisite:* 22 and Math. 22. Three hours. Mr. Skapski. (Offered in alternate years, 1959-60.)

281 INTRODUCTION TO KINETIC THEORY AND STATISTICAL MECHANICS (3-0) Fundamental concepts of statistical theories. Meaning of models and constructs. Partition functions and their application to problems. Classical and non-classical distributions. *Prerequisite:* 22 and Math. 211. Three hours. Mr. Crowell. (Offered in alternate years, 1959-60.)

304 QUANTUM MECHANICS (3-0) Development of the Schroedinger theory from DeBroglie's approach, and application of wave mechanics to simple physical systems including hydrogen atom. Characteristic features of Heisenberg matrix mechanics. Relation between wave and matrix mechanics. *Pre-*

* May be replaced by Physics 5-6 with the consent of the department.

requisite: 271, 275 or 277 and either Math. 220 or Math. 212. Three hours. Mr. Skapski. (Offered in alternate years, 1959-60.)

311 ADVANCED DYNAMICS (3-0) Classical Mechanics presented as the basis of the concepts and methods of modern physics. Variational methods. Lagrangian and Hamiltonian formulations, canonical transformations. *Prerequisite*: 212, Math. 211 and either 220 or 212. Three hours. Mr. Crowell. (Offered in alternate years, 1958-59.)

312 ELECTROMAGNETIC THEORY (3-0) Mathematical theory of electricity and magnetism. The field equations, energy and radiation. *Prerequisite*: 241, 242, Math. 211 and 220. Three hours. Mr. Crowell. (Offered in alternate years, 1958-59.)

322 SOLID STATE PHYSICS (3-0) Characteristics of main types of solids, particularly the source of cohesion energies. Surface free energy of solids and related phenomena. *Prerequisite*: 272 and either Math. 220 or Math. 212. Three hours. Mr. Skapski. (Offered in alternate years, 1958-59.)

381, 382 SEMINAR Members of the staff and graduate students meet once a week to study contemporary advances in physics and for reports on research being done in the department. One hour. The staff.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Political Science

COLLEGE OF ARTS AND SCIENCES

Professor Nuquist (Chairman); Associate Professors Babcock, Haugen, and Little; Assistant Professors Gould, Hilberg, and Steele; Messrs. Ettinger and Simon

1, 2 AMERICAN GOVERNMENT First semester: state and local governments; second semester: national government. Three hours. The staff.

11, 12 INTRODUCTION TO POLITICAL SCIENCE First semester: elements of political science; second semester: comparative governmental institutions. This course is a terminal course for those who plan no other political science courses. Students should not elect both 1, 2 and 11, 12. Three hours. Mr. Nuquist.

51, 52 INTERNATIONAL RELATIONS First semester: development and principles of international politics; second semester: international organization. *Prerequisite*: sophomore standing and 51 for 52. Three hours. Messrs. Little, Hilberg, Gould, and Simon.

54 GEOGRAPHIC BACKGROUNDS OF POLITICS *Prerequisite*: 52. Three hours.

61, 62 LOCAL GOVERNMENT First semester: government of counties, towns, and other rural units; second semester: municipal government. *Prerequisite*: sophomore standing. Three hours. Mr. Nuquist.

71 GOVERNMENT OF GREAT BRITAIN *Prerequisite*: sophomore standing. Three hours. Mr. Haugen.

72 GOVERNMENTS OF CONTINENTAL EUROPE *Prerequisite:* sophomore standing. Three hours. Mr. Haugen. (Offered in alternate years, 1958-59.)

74 GOVERNMENTS OF THE BRITISH EMPIRE AND THE COMMONWEALTH *Prerequisite:* sophomore standing. Three hours. Mr. Haugen. (Offered in alternate years, 1959-60.)

75 GOVERNMENTS OF THE FAR EAST *Prerequisite:* sophomore standing. Three hours. Mr. Little. (Offered in alternate years, 1958-59.)

76 GOVERNMENT OF LATIN AMERICA *Prerequisite:* sophomore standing. Three hours. Mr. Gould. (Offered in alternate years, 1958-59.)

191, 192 HONORS OR SPECIAL READINGS For undergraduates only. Three to six hours. The staff.

211, 212 POLITICAL THEORY First semester: development of political theory; second semester: recent political theory. *Prerequisite:* two courses. Three hours. Messrs. Babcock and Steele.

216 AMERICAN POLITICAL THOUGHT The development of American political thought from the colonial period to recent times. *Prerequisite:* 1, 2 or 11, 12 and one other course or Economics 11-12 or History 23, 24. Mr. Steele. Three hours.

221, 222 CONSTITUTIONAL LAW First semester: an historical and analytic study of judicial review, federalism, the taxing power, the commerce power, the suffrage; second semester: an historical and analytic study of the war power, the executive power, due process of law, citizenship, Bill of Rights, equal protection of the laws. *Prerequisite:* 1, 2 or 11, 12; one other course, or Economics 11-12, or History 23, 24; junior standing. Three hours. Mr. Gould.

226 ADMINISTRATIVE LAW *Prerequisite:* 241. Three hours. Mr. Nuquist. (Offered in alternate years, 1959-60.)

227 INTERNATIONAL LAW Principles and applications of public international law. *Prerequisite:* 51, 52. Three hours. Mr. Hilberg or Mr. Little. (Offered in alternate years, 1958-59.)

231 THE LEGISLATIVE PROCESS Study of congressional organization and procedure. *Prerequisite:* 11, 12 or 1, 2; one other course. Three hours. Mr. Haugen. (Offered in alternate years, 1959-60.)

232 LAWMAKING AND PUBLIC POLICY Influence of the executive and problems of congressional control. *Prerequisite:* 1, 2, or 11, 12; one other course. Three hours. Mr. Haugen. (Offered in alternate years, 1959-60.)

241 ORGANIZATION AND FUNCTION OF PUBLIC ADMINISTRATION *Prerequisite:* 1, 2 or 11, 12; one other course. Three hours. Mr. Nuquist.

242 ADMINISTRATIVE PROCEDURES *Prerequisite:* 241. Three hours. Mr. Nuquist. (Offered in alternate years, 1958-59.)

251, 252 AMERICAN FOREIGN POLICY First semester: the development of American foreign policy; second semester: the formation of American foreign policy. *Prerequisite:* any course except 1, 2; 251, History 31 or permission of the instructor for 252. Three hours. Mr. Little or Mr. Hilberg.

253-254 **WORLD POLITICS** An analysis of the foreign policies of countries other than the United States, with emphasis on selected problems in Europe, Latin America, and the Pacific Area. *Prerequisite:* 51, 52. Three hours. Mr. Little or Mr. Hilberg. (Offered in alternate years, 1959-60.)

256 **INTERNATIONAL ADMINISTRATION** Theory and practice in international agencies. *Prerequisite:* 51, 52. Three hours. Mr. Little. (Offered in alternate years, 1958-59.)

263 **STATE GOVERNMENT** Organization and administration of state government. *Prerequisite:* 1, 2 or 11, 12; one other course. Three hours. Mr. Babcock.

265, 266 **INTERGOVERNMENTAL RELATIONS** First semester: problems of the federal system; second semester: national-state-local cooperative administration of selected public functions. *Prerequisite:* 1, 2 or 11, 12; one other course or Econ. 11-12. Three hours. Mr. Haugen. (Offered in alternate years, 1958-59.)

271, 272 **POLITICAL PARTIES AND PRESSURE GROUPS** First semester: political parties; second semester: citizen participation and interest groups. *Prerequisite:* 1, 2 or 11, 12; one other course. Three hours. Mr. Steele.

281, 282 **POPULAR GOVERNMENT** Seminar for students who intend to pursue graduate study in political science, international relations, or public administration, or to enter the public service. The staff.

391, 392, 393, 394 **MASTER'S THESIS RESEARCH** Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Poultry Husbandry

COLLEGE OF AGRICULTURE AND HOME ECONOMICS

Associate Professor Henderson (Chairman); Mr. R. T. Smith

1 **GENERAL POULTRY HUSBANDRY (2-2)** The principles of poultry husbandry and their application to general farm conditions. Three hours. Messrs. Henderson and Smith.

56 **POULTRY JUDGING AND SELECTION (1-2)** A consideration of the physiological and morphological characters correlated with egg production. The judging of standard bred poultry, laboratory practice in judging both utility and exhibition poultry. *Prerequisite:* 1. Two hours. Mr. Henderson.

101 **POULTRY FEEDING (3-2)** Feeding poultry for egg production, growth and fattening. Practice in compounding rations. Experimental work and feeding problems. *Prerequisite:* junior standing and permission of department. Four hours. Mr. Henderson. (Offered in alternate years, 1959-60.)

102 **INCUBATION AND BROODING (2-4)** General biology as applied to incubation and the fundamental principles underlying incubation practices. The theory and practice of brooding chicks and other poultry. *Prerequisite:* 1; junior standing and permission of department. Four hours. Mr. Henderson.

103 PROCESSING AND PACKAGING POULTRY PRODUCTS (2-2) The principles of marketing as they apply to eggs and poultry meat. Candling, grading, and packing eggs for market. Preparation of poultry for market. A one-week inspection trip to the Boston market for which there is a charge of \$25.00. *Prerequisite:* 1; junior standing. Three hours. Mr. Henderson. (Offered in alternate years, 1958-59.)

151 POULTRY BREEDING (2-0) An analysis of the procedure and techniques of practical application of genetic principles used in the practice of poultry breeding. Trap Nesting, Selection Pressures, Heritability, Mating Systems. *Prerequisite:* Poultry 1. Two hours. Mr. Smith. (Offered in alternate years, 1959-60.)

181, 182 POULTRY SEMINAR A topical seminar designed for all students with an interest in current trends in the poultry industry. Required of Poultry Seniors. *Prerequisite:* Poultry 1. One hour. The staff.

197, 198 SENIOR RESEARCH Each student works on a research problem under the direction of a qualified staff member and submits the findings in written form as prescribed by the department. *Prerequisite:* senior standing. Three hours. The staff.

Psychology

COLLEGE OF ARTS AND SCIENCES

Professors Chaplin (Chairman) and Ansbacher; Associate Professor Murdock; Mr. Vris (first semester) and Mr. Slamecka

1 GENERAL PSYCHOLOGY An introduction to the entire field, emphasizing the normal adult human being. *Prerequisite:* sophomore standing. Three hours. The staff.

109-110 STATISTICAL AND EXPERIMENTAL METHODS (2-4) The course is designed to provide the student with a knowledge of the standard descriptive and inferential statistics, and also to give a general knowledge and appreciation of the scientific method as it is used in psychology. The student will design, conduct, and interpret the results of experiments in a number of different areas of psychology. *Prerequisite:* 1; junior standing; Math. 1 or the equivalent. Four hours. Messrs. Murdock and Vris.

201 SOCIAL PSYCHOLOGY Principles, problems and research techniques of social psychology; beliefs and attitudes; groups, morale, leadership. *Prerequisite:* 1; junior standing. Three hours. Mr. Ansbacher.

205 CHILD PSYCHOLOGY The development of the human mind from birth to maturity. *Prerequisite:* 1; junior standing. Three hours. Mr. Murdock.

206 CHARACTER AND PERSONALITY A survey of approaches used and results obtained in the study of the nature of the mature individual. *Prerequisite:* 1; junior standing. Three hours. Mr. Ansbacher.

208 ABNORMAL PSYCHOLOGY The more unusual mental processes, the methods of observing and interpreting them, and their bearing on our understanding of the normal mind. *Prerequisite:* 1; junior standing. Three hours. Mr. Slamecka.

222 **PHYSIOLOGICAL PSYCHOLOGY (2-2)** Relationships between psychological processes and the functions of the nervous system and endocrine glands. *Prerequisite:* 1; junior standing. Three hours. Mr. Chaplin.

223 **SYSTEMATIC PSYCHOLOGY** A comparative study of the leading contemporary schools of psychological thought. *Prerequisite:* 1; junior standing. Three hours. Mr. Chaplin.

225-226 **PSYCHOLOGICAL TESTS (2-2)** A survey with emphasis on the most important clinical tests of ability and personality; and training in the administration of individual intelligence tests. *Prerequisite:* 110. Three hours. Mr. Ansbacher.

281-282 **SEMINAR** Review and discussion of current psychological research. Required of graduate students and seniors concentrating in Psychology. *Prerequisite:* 110, 223. One hour. The staff.

381-382 **ADVANCED READINGS** Readings, with conferences, to provide those working for the M.A. degree with the background for, and specialized knowledge relating to, their research. Credit as arranged. The staff.

391, 392, 393, 394 **MASTER'S THESIS RESEARCH** Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Romance Languages

COLLEGE OF ARTS AND SCIENCES

Professors Daggett (Chairman) and Johnston; Associate Professor Doane; Assistant Professors Hubbell, Julow, Parker, and Towne; Mr. Pollock

French

1-2 **ELEMENTARY FRENCH** Grammar, pronunciation, composition, translation, dictations, and use of the spoken language, for those who present less than two years of preparatory French. *Credit is given only if Intermediate French is also completed.* Four hours. Mr. Julow and others.

11-12 **INTERMEDIATE FRENCH** Grammar, composition, translation, and conversation. The class work is conducted, as much as possible, in French. *Prerequisite:* 1-2 or two years of preparatory French. Three hours. Mr. Parker and others.

101-102 **INTRODUCTION TO FRENCH LITERATURE** Recitations, lectures, outside reading, and reports. Selected texts of outstanding French authors from medieval times to the present are the basis of study. *Prerequisite:* 11-12. Three hours. Messrs. Daggett and Johnston.

121-122 **COMPOSITION AND CONVERSATION** Composition, conversation, and phonetics. Required of those who wish to be recommended to teach French. *Prerequisite:* good standing in 11-12. Three hours. Mr. Julow.

207, 208 **FRENCH LITERATURE: 19TH CENTURY** Recitations, lectures, outside reading, and reports. A careful study of the outstanding authors of the

romantic, realistic, and naturalistic schools. *Prerequisite:* 101-102, 207 for 208. Three hours. Mr. Daggett.

211 FRENCH LITERATURE: 18TH CENTURY Selected readings, lectures on the main currents of the literature of the century with emphasis on Montesquieu, Diderot, Voltaire, and Rousseau. Lesage, Marivaux, and Beaumarchais will be studied in the drama. *Prerequisite:* 101-102. Three hours. Mr. Johnston. (Offered in alternate years, 1959-60.)

212 FRENCH LITERATURE: 20TH CENTURY Readings, reports, lectures on the principal literary movements in this period based on a careful study of selected work of outstanding authors. *Prerequisite:* 101-102. Three hours. Mr. Johnston. (Offered in alternate years, 1959-60.)

213, 214 FRENCH LITERATURE: 17TH CENTURY Readings, reports, discussion. Intensive study of Corneille, Racine, Molière and other writers of the century, with emphasis on the distinctive features of the French classic aesthetic. *Prerequisite:* 101-102; 213 for 214. Three hours. Mr. Daggett. (Offered in alternate years, 1958-59.)

223-224 ADVANCED COMPOSITION AND CONVERSATION Translation into French of difficult English prose, free composition and discussion of questions of style. Practice in advanced conversation. Required of those who wish to be recommended to teach French. *Prerequisite:* 121-122. Three hours. Mr. Doane.

281-282 SENIOR SEMINAR Special readings and research. Required of all senior concentrators. One hour.

381, 382 GRADUATE SEMINAR Offered for resident candidates for the Master of Arts degree; further opportunities for independent work are provided. Three hours.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Italian

1-2 ELEMENTARY ITALIAN Grammar, composition, translation, and practice in the spoken language. *Prerequisite:* permission of the department. Three hours. Mr. Johnston.

11-12 INTERMEDIATE ITALIAN Grammar, composition, translation, and conversation. *Prerequisite:* 1-2 or its equivalent. Three hours. Mr. Johnston.

Spanish

1-2 ELEMENTARY SPANISH Grammar, composition, and translation, with frequent practice in pronunciation and use of the spoken language. For those who present less than two years of preparatory Spanish. *Credit is given only if Intermediate Spanish is also completed.* Four hours. Mr. Pollock and others.

11-12 INTERMEDIATE SPANISH Readings from selected authors. Composition, grammar, and practice in conversation. Spanish is spoken to a considerable extent in class. *Prerequisite:* 1-2 or two years of preparatory Spanish. Three hours. Mr. Towne and others.

101-102 INTRODUCTION TO SPANISH LITERATURE Recitations, lectures, outside reading, and reports. Selections from the outstanding works of Spanish literature from the medieval period to the present are studied. *Prerequisite:* 11-12. Three hours. Mr. Hubbell.

121-122 CONVERSATION AND COMPOSITION Composition, conversation, and phonetics. Required of those who wish to be recommended to teach Spanish. *Prerequisite:* good standing in 11-12. Three hours. Mr. Pollock.

205 INTRODUCTION TO SPANISH-AMERICAN LITERATURE Recitations, lectures, outside readings, and reports. Selections from outstanding authors from the colonial period to *modernismo* with emphasis on Garcilaso de la Vega, Sor Juana, Juan Montalvo, Ricardo Palma, Sarmiento, and José Hernández. Three hours. *Prerequisite:* 101-102. Mr. Hubbell. (Offered in alternate years, 1958-59.)

206 CONTEMPORARY SPANISH-AMERICAN LITERATURE Lectures, recitations, outside readings, and reports. Selections from outstanding authors of the 20th century with emphasis on Rubén Darío, Gabriela Mistral, Pablo Neruda, Ricardo Guiraldes, and Eduardo Barrios. Three hours. *Prerequisite:* 101-102. Mr. Hubbell. (Offered in alternate years, 1958-59.)

207 SPANISH LITERATURE: 19TH CENTURY The principal literary currents of the 19th century, from Romanticism to the "Generation of 1898." Representative readings from the poetry, drama, and novel of the period. *Prerequisite:* 101-102. Three hours. Mr. Hubbell. (Offered in alternate years, 1959-60.)

208 SPANISH LITERATURE: 20TH CENTURY The origins and main aspects of the intellectual conflicts in modern Spain, as reflected in the literary works from the "Generation of 1898" to the present. *Prerequisite:* 207. Three hours. Mr. Hubbell. (Offered in alternate years, 1959-60.)

213, 214 SPANISH LITERATURE: GOLDEN AGE Selected readings from the novel, poetry, drama of the 16th and 17th centuries with special attention to Cervantes and the dramatists. *Prerequisite:* 101-102, 213 for 214. Three hours. (Not offered in 1958-59.)

281-282 SENIOR SEMINAR Special readings and research. Required of all senior concentrators. One hour.

381, 382 GRADUATE SEMINAR Offered for resident candidates for the Master of Arts degree; further opportunities for independent work are provided. Three hours.

391, 392, 393, 394 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Russian

COLLEGE OF ARTS AND SCIENCES

1-2 ELEMENTARY RUSSIAN Grammar, translation, extensive practice in the spoken and written language. *Prerequisite:* sophomore standing. Three hours.

11-12 INTERMEDIATE RUSSIAN Systematic review of grammar; composition; extensive oral practice. Readings from Pushkin, Lermontov, Gogol, Tolstoy, and others. *Prerequisite:* 1-2, or its equivalent. Three hours. (Not offered 1958-59.)

Sociology

COLLEGE OF ARTS AND SCIENCES

1 INTRODUCTORY SOCIOLOGY Social structure and processes in groups and societies, primitive and modern. *Prerequisite:* sophomore standing. Three hours. I, II. Messrs. Davis and Hall.

3 MARRIAGE AND THE FAMILY Kinship and marital institutions in various societies, industrial and pre-industrial; recent trends and problems. *Prerequisite:* junior standing. Three hours. Mr. Davis. (Offered in alternate years, 1958-59.)

4 AMERICAN SOCIETY Major structures, tensions and processes in American social organization. *Prerequisite:* sophomore standing, Sociology 1. Three hours. Mr. Davis.

72 INTRODUCTION TO SOCIAL WORK History, philosophy, fields, and objectives of social work; process of social case work through discussion of cases. *Prerequisite:* Soc. 1, Psy. 1; junior standing or consent of the instructor. Three hours. Miss Bullock.

102 SOCIAL PROBLEMS Conflicts and problems in modern industrial society. *Prerequisite:* 1 or consent of the instructor; junior standing. Three hours. Mr. Davis.

104 CULTURAL ANTHROPOLOGY Social organization, culture, and personality in preliterate societies. *Prerequisite:* junior standing; 1 or comparable work in other social sciences. Three hours. I. Mr. Davis.

111 SOCIAL ASPECTS OF HEALTH AND MEDICINE *Prerequisite:* 1 or Psychology 1 or consent of the instructor. Three hours. Mr. Wessen.

112 COMMUNITY ORGANIZATION Ecology and social organization of communities, urban and rural; historical development of communities; main institutions and other groupings; contemporary social welfare agencies and practices; field trips to local and State agencies and institutions. *Prerequisite:* 1-2 or Psychology 1 or consent of the instructor. Three hours. Mr. Wessen.

120 MINORITY GROUPS Patterns of ethnic, religious, and other minority-group organization and relations in modern industrial societies; culture contacts between industrial and pre-industrial societies. *Prerequisite:* junior standing and six hours in sociology or psychology. Three hours. Mr. Davis. (Offered in alternate years, 1959-60.)

150 SOCIOLOGICAL THEORIES Social theories in relation to their societies; examples from nonliterate communities, the city-state, feudalism, industrialism; emphasis on the development of modern sociological thought. *Prerequisite:* junior standing and 12 hours in social studies. Three hours. Mr. Davis. (Offered in alternate years, 1959-60.)

201 COMPARATIVE SOCIAL INSTITUTIONS AND SOCIAL EVOLUTION Evolution of basic types of human societies; comparison of kinship, economic, political, class, and expressive institutions, in terms of preliterate communities, feudal China and India, modern industrial societies (USA, USSR). *Prerequisite:* at least one full year course in sociology or anthropology, or 12 hours comparable work in history, economics, or political science. Three hours. II. Mr. Davis. (Offered in alternate years, 1958-59.)

Speech

COLLEGE OF ARTS AND SCIENCES

Professors Huber (Chairman) and Luse; Associate Professor Falls; Assistant Professor Lewis; Messrs. Albrecht, Oppfelt, Parker, and Vanderslice

1 BASIC SPEECH The elements of speech and their practical application to the individual. Assignments designed to improve communication through vocal and bodily control. Three hours. I, II. The staff.

3 PARLIAMENTARY PROCEDURE Study and practice in the fundamentals of conducting a meeting. The class meets twice a week with one hour of outside preparation. *Prerequisite:* sophomore standing. One hour. Mr. Huber.

11 PUBLIC SPEAKING Preliminary analysis, gathering material, organization and delivery of speeches with special attention on the use of visual aids and the speech to inform. Two thirds of the time is devoted to student performance. Three hours. I, II. The staff.

12 ARGUMENTATION Inductive, deductive, causal, and reasoning from analogy as applied to the speaking situation; designed to develop through performance skill in logical expression of thought. *Prerequisite:* 11. Three hours. I, II. Mr. Huber.

14 GROUP DISCUSSION The basic methods of procedure in committees, round table discussions, lecture forums, symposiums, panels, and other types of discussion; designed to develop through performance skill in the thought processes involved in discussion leadership. *Prerequisite:* 11. Three hours. Messrs. Albrecht and Parker.

31 ORAL INTERPRETATION OF LITERATURE The basic principles and techniques of oral interpretation of literature. Emphasis is placed on the analysis and appreciation of poetry, prose and drama through the development of ability in communicating the logical, emotional and aesthetic values of literature to an audience. *Prerequisite:* 1 or permission of instructor. Three hours. I, II. Mr. Falls, Miss Luse, and Mr. Vanderslice.

41 ACTING A beginning course in the fundamentals of acting, including improvisation, character analysis, and styles of acting. Performance in short classroom acting projects is required through the semester. *Prerequisite:* 1 or permission of the instructor. Three hours. I, II. Mr. Falls.

71 VOICE SCIENCE The physical, anatomical, physiological, and phonetic factors of speech. *Prerequisite:* 1; sophomore standing. Three hours. I. Miss Luse. (Offered in alternate years, 1958-59.)

74 INTRODUCTION TO SPEECH CORRECTION An introduction to the causes, symptoms and treatment of speech disorders. One third of the course devoted to articulatory problems of children. Observation of children's therapy in the Speech Clinic. *Prerequisite*: 1; sophomore standing. Three hours. I. Miss Luse.

111 PERSUASION Human motivation, attitudes and how to change them; emotion, stereotypes, attention, and audience psychology; training in their use through student performance. *Prerequisite*: six hours, including 11. Three hours. Mr. Huber.

116 SPEECH COMPOSITION A study of speech style and rhetorical criticism by analysis of great speeches and by writing longer speeches. *Prerequisite*: six hours, including 11. Three hours. Mr. Huber. (Offered in alternate years, 1958-59.)

140 PLAY PRODUCTION An intensive lecture and laboratory course in the physical elements of play production, including scene design, lighting, construction of sets and properties, and stage management. *Prerequisite*: six hours of speech or permission of the instructor. Three hours. I. Mr. Vanderslice. (Offered in alternate years, 1959-60.)

142 PLAY DIRECTING An intensive lecture-laboratory course in the problems and techniques of directing plays: staging, script analysis, production techniques, and rehearsal techniques. *Prerequisite*: six hours including 41 or permission of the instructor.

145, 146 DEVELOPMENT OF WESTERN THEATRE A survey of the history of the theatre and drama in western civilizations from earliest rituals to the contemporary theatre. Plays from all major periods are read and discussed. *Prerequisite*: junior standing; English 25, 26 or 27, 28. Three hours. Mr. Falls. (Offered in alternate years, 1958-59.)

161 ELEMENTS OF RADIO AND TELEVISION BROADCASTING The social, psychological, historical, educational, and technical aspects of radio and television together with laboratory work in announcing, interviewing, and production of various types of programs. *Prerequisite*: six hours, including 1. Three hours. Mr. Lewis.

162 WRITING FOR RADIO AND TELEVISION The fundamental principles and techniques of writing for radio and television, with emphasis on adaptations, documentaries, and dramatic scripts. *Prerequisite*: 161 or permission of the instructor. Three hours. Mr. Lewis.

171, 172 SPEECH CORRECTION The etiology, symptoms and treatment of voice disorders; the problems of stuttering and organic disorders of speech. The etiology, symptoms and rehabilitation of various auditory disorders. *Prerequisite*: 74. Three hours. Miss Luse and Mr. Oppfelt.

World Problems

COLLEGE OF ARTS AND SCIENCES

101, 102 WORLD PROBLEMS Each semester a different major issue of particular importance to men and women in the modern world will be presented

by various instructors from the humanities, the sciences, and the applied arts. The topic for the spring semester, 1958, is "Education: Ends and Means." Lectures, weekly seminars, readings, and written reports. This course does not count toward concentration requirements. *Prerequisite*: senior standing or permission of the director. Three hours. Mr. McArthur and others.

Zoology

COLLEGE OF ARTS AND SCIENCES

Professors Moody (Chairman) and Lochhead; Associate Professor Rowell; Assistant Professors Bond, Potash, and Torch; Messrs. Bell and Gifford and Miss Youngs

1 INTRODUCTION TO ZOOLOGY (3-3) Study of the fundamental life processes of animals, particularly at the cellular level; designed to give the general student an appreciation of these processes, and the science student a background for further study in Zoology. *Prerequisite*: a course in high school chemistry is strongly recommended. Four hours. Mr. Torch and staff. I and II.

2 PRINCIPLES OF EVOLUTION (3-2) Survey of biological principles connected with the development of life on the earth; evidences that evolution occurs. *Prerequisite*: 1, or permission of the instructor. Four hours. Mr. Bell and staff.

21 ORGANIC EVOLUTION A non-laboratory course for students interested in the theory of evolution. For material covered see description of 2. A student may not receive credit for both 2 and 21. *Prerequisite*: sophomore standing. Three hours. Mr. Moody.

31 GENERAL ENTOMOLOGY (2-4) Introduction to the study of insects, with emphasis on morphology, physiology, and evolution. *Prerequisite*: 1. Four hours. Mr. Potash.

41 VERTEBRATE ZOOLOGY (2-4) Survey of Phylum Chordata; structure and biology of vertebrate animals; dissection of typical submammalian vertebrates. *Prerequisite*: 1. Four hours. Mr. Bond.

52 PHYSIOLOGY Introduction to some chemical and mechanical fundamentals of animal physiology, with special reference to man. *Prerequisite*: 1, junior standing; some knowledge of chemistry. Three hours. Mr. Lochhead.

102 COMPARATIVE ANATOMY (2-4) Study of the evolution of the organ systems of vertebrates, accompanied by the dissection of a mammal. *Prerequisite*: 41. Four hours. Mr. Bond.

104 ANIMAL ECOLOGY (2-4) Relationships between animals and their environments; dynamics of animal populations; aspects of wildlife conservation. *Prerequisite*: one year of zoology; a course in inorganic chemistry. Four hours. Mr. Potash. (Offered in alternate years, 1959-60.)

111 EMBRYOLOGY (2-4) General principles of development; exemplified by typical invertebrate and vertebrate embryos. *Prerequisite*: 41, junior standing. Four hours. Miss Youngs.

112 COMPARATIVE HISTOLOGY (2-4) Microscopic anatomy of invertebrate and vertebrate tissues. Basic tissue similarities and specializations in relation to function. *Prerequisite:* 41, 111 or Botany 102. Four hours. Miss Youngs.

115 HEREDITY Principles of inheritance and their physical basis. (No student may receive credit both for this course and for Botany 105.) *Prerequisite:* junior standing and two semesters of courses selected from botany, psychology, and zoology. Three hours. Mr. Moody.

150 INVERTEBRATE ZOOLOGY (2-4) Anatomy, physiology, and life histories of selected representatives of the more important invertebrate phyla. Required of all students concentrating in zoology. *Prerequisite:* 1, and 41 or 31; junior standing. Four hours. Mr. Lochhead.

202 PRIMATE ANATOMY (0-8) Detailed dissection of the monkey. *Prerequisite:* 102; senior standing. Four hours. Mr. Bond.

216 HUMAN GENETICS Principles of human inheritance; population genetics; interaction of heredity and environment; application of principles of heredity to human problems on both individual and social levels. *Prerequisite:* 115 or Botany 105. Three hours. Mr. Moody.

220 PROTOZOOLOGY (2-4) Introduction to study of the Protozoa, with emphasis on the recognition, morphology, reproduction and physiology of the more important taxonomic groups. *Prerequisite:* 150, and at least one year of chemistry or consent of the instructor. Four hours. Mr. Torch. (Offered in alternate years, 1958-59.)

236 FRESH-WATER BIOLOGY (2-4) Organisms of lakes, ponds and streams; their adaptations to varying physical, chemical and biotic conditions. *Prerequisite:* a course in invertebrate zoology, or entomology, or ecology, and a course in inorganic chemistry. Four hours. Mr. Potash. (Offered in alternate years, 1958-59.)

270 MODERN EVOLUTIONARY THEORY Contributions of modern research in genetics, systematics, distribution, experimental embryology, serology, and related fields to problems of the means and methods of evolutionary change. *Prerequisite:* a course in evolution and one in heredity or genetics. Three hours. Mr. Moody.

281-282 SEMINAR Review and discussion of current zoological research. Required of graduate students and seniors concentrating in zoology; open to others by special permission only. One hour. The staff.

381, 382 ADVANCED READINGS Readings, with conferences, intended to contribute to the programs of graduate students advanced study in phases of zoology in which formal courses are not available. *Prerequisite:* graduate standing; an undergraduate major in zoology. Credit as arranged.

391, 392 MASTER'S THESIS RESEARCH Investigation of a research topic under the direction of an assigned staff member, culminating in an acceptable thesis. Credit as arranged.

Personnel

The Board of Trustees

CARL WILLIAMS BORGMANN, Ph.D., LL.D.	President	} <i>Ex-Officio</i>
JOSEPH BLAINE JOHNSON, B.S.	Governor	

March, 1953—March, 1959

CHARLES HENRY BROWN, B.S.	<i>Brandon, Vt.</i>
OLIN DOW GAY, M.A.	<i>Springfield, Vt.</i>
CORNELIUS O. GRANAI, LL.B.	<i>Barre, Vt.</i>
BENJAMIN FRANK MYOTT (From Apr. 28, 1955)	<i>Enosburg Falls, Vt.</i>

March, 1954—March, 1960

DONALD ALBERT GANNON, B.S.	<i>Wellesley, Mass.</i>
ALBERT LOVEJOY GUTTERSON, B.S.	<i>Springfield, Vt.</i>
ROBERT THAYER HOLDEN, B.S.	<i>Bennington, Vt.</i>

March, 1955—March, 1961

MERRITT SANFORD HEWITT	<i>Shaftsbury, Vt.</i>
MRS. LUCIA THORINGTON LADD, B.S.	<i>Worcester, Vt.</i>
BASIL BARRY WALSH, B.S.	<i>Gosben, Vt.</i>
GEORGE DUNHAM MASON, B.A. (From Apr. 28, 1955)	<i>Brattleboro, Vt.</i>

March, 1956—March, 1962

HARRY BARKER, D.Eng.	<i>New York, N. Y.</i>
CHESTER BARSTOW EATON, B.S.	<i>Rutland, Vt.</i>
CHARLES PLYMPTON SMITH	<i>Burlington, Vt.</i>

March, 1957—March, 1963

JOSEPH G. DAVIDSON, Ph.D.	<i>Manchester, Vt.</i>
CLIFTON COOLEY STAFFORD, B.S.	<i>Stowe, Vt.</i>
LEROY DWIGHT WARE, B.S.	<i>Richmond, Vt.</i>
DERICK VANDERBILT WEBB, B.A.	<i>Shelburne, Vt.</i>

March, 1958—March, 1964

GEORGE LORENZO BEST, B.S.	<i>Rockville Center, N. Y.</i>
NEIL TOLMAN, LL.B.	<i>Washington, D. C.</i>
EDWARD MILTON WINANT, M.D.	<i>Bronxville, N. Y.</i>

Secretary of the Board—CHESTER B. EATON, B.S.

Assistant Secretary—ANNA C. SMITH, Ph.B.

Officers of Administration

CARL WILLIAMS BORGMANN, Ph.D., LL.D.	<i>President of the University</i>
ANNA CAROLINE SMITH, Ph.B.	<i>Executive Secretary</i>
JOHN THEODORE FEY, D.J.S.	<i>President-elect</i>
PAUL ROBERT MILLER, M.S.	<i>Dean, College of Agriculture</i>
ROBERT POWERS DAVISON, M.Ed.	<i>Director, Agricultural Extension Service</i>
THOMAS WHITFIELD DOWE, Ph.D.	<i>Director, Agricultural Experiment Station</i>
JACK ERNEST LITTLE, Ph.D.	<i>Director of Resident Instruction</i>
EDMUND MORTON ROOT, B.S.	<i>Director of Short Courses and Educational Conferences</i>
EDD RUTHVEN McKEE, M.S., E.E.	<i>Dean, College of Technology</i>
GEORGE VINCENT KIDDER, Ph.D.	<i>Dean, College of Arts and Sciences</i>
THOMAS CLAIR KING, Ed.D.	<i>Dean, College of Education and Nursing</i>
GEORGE ANTHONY WOLF, JR., M.D.	<i>Dean, College of Medicine</i>
JAMES HENRY BATES, M.Ed.	<i>Executive Assistant for Research, Post Graduate Education and Public Relations</i>
JOHN HARVEY KENT, Ph.D.	<i>Dean, Graduate College</i>
WADI I. SAWABINI, D.D.S.	<i>Director, School of Dental Hygiene</i>
EARL ARQU KOILE, Ed.D.	<i>Director, Summer Session and Adult Education</i>
LEVI RAY KELLEY	<i>Treasurer and Business Manager</i>
EDWIN BARTLETT ABBOTT	<i>Chief Accountant</i>
DAVID DANIEL DEMSKY	<i>Superintendent of Buildings and Grounds</i>
GEORGE NAY CLERKIN	<i>Assistant Treasurer</i>
A. GRANT KENNEDY	<i>Associate Accountant</i>
LYMAN SMITH ROWELL, M.S.	<i>Dean of Administration</i>
EARLE WINCHESTER CLIFFORD, JR., M.S.	<i>Dean of Men</i>
ANNA RANKIN HARRIS, M.A.	<i>Dean of Women</i>
HAROLD CAMPBELL COLLINS, B.S.	<i>Director of Admissions and Records</i>
JOHN CHARLES HUDEN, Ph.D.	<i>Director of Testing</i>
HORACE BYRON ELDRED	<i>Director of Audio-Visual Services and Vermont Film Library</i>
MRS. NANCY K. FLYNN	<i>Director of Women's Residence Halls</i>
WALTER SMALAKIS, M.A.	<i>Coordinator of Student Activities</i>
ALBERT WILLIAM SADLER, M.A.	<i>Consultant on Religious Programs</i>
MARGARET MARY WING, M.A.	<i>Assistant Dean of Women</i>
BRYAN JAMES MOSHER, M.S., Ed.M.	<i>Assistant Dean of Men</i>
THOMAS PAUL CLAIRMONT, M.Ed.	<i>Assistant Director of Admissions and Records</i>
RICHARD WALKER AMIDON, M.D.	<i>Director of Student Health</i>
CHARLES WATTLES STEPHENSON, M.D.	<i>Psychiatric Consultant</i>
CLARE KENT MARSHALL (MRS. E. R.), M.D.	<i>Psychiatric Consultant</i>
JOHN FRYE BELL, M.D.	<i>Orthopedic Consultant</i>
JAMES BISHOP MCGILL, M.D.	<i>Assistant Physician</i>
JOHN R. FITZGERALD, M.D.	<i>Assistant Physician</i>
JOHN Y. SHORT, M.D.	<i>Assistant Physician</i>
KARL PRESCOTT LIPSOHN, A.B.	<i>Assistant to the President, External Affairs</i>
LAWRENCE E. VAN BENTHUYSEN, B.A.	<i>Director of Public Relations</i>
ARTHUR HARRY CHENEY, SR., B.S.	<i>Alumni Field Secretary</i>
ISABELLE YOUNG GALLUP	<i>Secretary of Alumni Council</i>
LAWRENCE FINDLEY KILLICK	<i>Director of Alumni Relations</i>
MORRISON CHANDLER HAVILAND, M.A.	<i>Director of the Library</i>
THOMAS JULIAN McCORMICK, M.F.A.	<i>Director of Museum</i>
JOHN EDWARD DONNELLY, M.A.	<i>Director of Athletics</i>
JAMES ALBERT ROOT, M.C.E.	<i>Director of Land Records</i>
JOSEPH F. LECHNYR, D.Mus.	<i>Director of University Band</i>
ANDREW EDGERTON NUQUIST, Ph.D.	<i>Director of Government Clearing House</i>

Officers of the University

Emeriti

BENJAMIN DYER ADAMS, M.D.	Assistant Professor of Surgery
LYMAN ALLEN, M.D.	Professor of Surgery
FLORENCE EMILY BAILEY, M.S.	Professor of Home Economics
MARY RUSSELL BATES, Ph.B.	Associate Librarian
CLARENCE HENRY BEECHER, M.D.	Professor of Medicine
MRS. ELIZABETH BRADISH	Instructor in Music
THOMAS STEPHEN BROWN, M.D.	Professor of Anatomy
WILLIAM EUSTIS BROWN, M.D.	
	<i>Dean, College of Medicine and Professor of Preventive Medicine</i>
ROY ORVILLE BUCHANAN, B.S.	Associate Professor of Electrical Engineering
MARY OLIVE BOYNTON, Ph.B.	Librarian, Medical Library
JAMES ATKINS BULLARD, Ph.D.	Professor of Mechanics and Mathematics
FRED DONALD CARPENTER, Ph.D., L.H.D.	Professor of German
JOSEPH EDWARD CARRIGAN, A.M., LL.D.	
	<i>Dean, College of Agriculture and Home Economics</i>
DANIEL BERNARD CARROLL, Ph.D.	Professor of Political Science
ELEANOR STENSON CUMMINGS, A.B.	
	<i>Associate Professor of Physical Education for Women</i>
†CHARLES FRANCIS DALTON, M.D.	Professor of Public Health
LEON W. DEAN, A.B.	Associate Professor of English
JOHN BELLOW'S DEFOREST, Ph.D.	Professor of Romance Languages
BENNETT COOPER DOUGLASS, Ph.D.	
	<i>Dean, College of Education and Professor of Education</i>
OLIVER NEWELL EASTMAN, M.D.	Professor of Gynecology
HOWARD BOWMAN ELLENBERGER, Ph.D.	Professor of Animal and Dairy Husbandry
PAUL DEMUND EVANS, Ph.D.	Professor of History
GLADYS FLINT, A.B.	Librarian, Wilbur Library
WILLIAM LAWRENCE GARDNER, B.S.	Associate Professor of Physical Education for Men
ASA RUSSELL GIFFORD, A.M.	Professor of Intellectual and Moral Philosophy
RAYMOND AVERY HALL, A.M.	Associate Professor of Religion
‡SARA MOULTHROP HOLBROOK, A.M.	Assistant Professor of Education
RALPH MAYNARD HOLMES, Ph.D.	Professor of Physics
FRED KINNEY JACKSON, M.D.	Professor of Physiology
§ELBRIDGE CHURCHILL JACOBS, S.B., A.M.	Professor of Geology and Mineralogy
CHARLES KIMBALL JOHNSON, M.D.	Professor of Pediatrics
HOVEY JORDAN, M.S., A.M.	Professor of Histology and Embryology
FORREST WILKINS KEHOE, B.S.	
	<i>Superintendent of Buildings and Grounds, and Associate Registrar</i>
WILLIAM SCRIBNER KIMBALL, Ph.D.	Associate Professor of Mathematics
FLORANCE BEESON KING, Ph.D.	Professor of Home Economics
ELIZABETH KUNDERT, M.D.	Assistant Professor of Clinical Psychiatry
JULIAN IRA LINDSAY, A.M., L.H.D.	Professor of English
LAURA LOUDON	Assistant in Public Relations
MIRIAM NATILEE MARSTON, A.M.	Assistant Professor of Music
DAVID MARVIN, M.D.	Professor of Pharmacology
JOHN TRUMBULL METCALF, Ph.D.	Professor of Psychology
HOWARD GUY MILLINGTON, C.E.	Assistant Professor of Mathematics
HENRY LEE MILLS, D.V.M.	Instructor in Public Health
CHARLES PERKINS MOAT, B.S.	Assistant Professor of Public Health
ARTHUR BECKWITH MYRICK, Ph.D.	Professor of Romance Languages and Literatures
JOHN ALVIN NEWLANDER, Ph.D.	Professor of Animal and Dairy Husbandry

† Deceased November 16, 1957.

‡ Deceased February 13, 1958

§ Deceased December 12, 1957

CATHERINE FRANCES NULTY, Ed.M.	Associate Professor of Economics
WALFORD TUPPER REES, M.D.	Professor of Clinical Surgery
VIOLA RUSSELL, M.D.	Instructor in Public Health
GEORGE MILLAR SABIN, M.D.	Professor of Clinical Surgery
HELEN BARNES SHATTUCK, A.B.	Librarian, Billings Library
MARY JEAN SIMPSON, Ph.B.	Dean of Women
†ELIJAH SWIFT, Ph.D.	Dean, College of Arts and Sciences, and Professor of Mathematics
BERTHA MAY TERRILL, A.M., Sc.D.	Professor of Home Economics
EMMUS GEORGE TWITCHELL, M.D.	Professor of Ophthalmology, Otolaryngology and Rhinology
CHARLES FLAGG WHITNEY, M.D.	Professor of Biochemistry and Toxicology
MYRON ELLIS WITHAM, C.E.	Assistant Professor of Mathematics

†Deceased July 21, 1957.

Officers of Instruction

Dates after names represent the year of original appointment.

Asterisk indicates member of Graduate Faculty.

JOHN ABAJIAN, JR. M.D. (1940-42; 1945)	Professor of Anesthesia
NELLE ALEXANDER ADAMS (MRS. W. R.), A.M. (1926)	Assistant Professor of Education
*THURSTON MADISON ADAMS, Ph.D. (1943)	Professor of Agricultural Economics
*WILLIAM RITCHIE ADAMS, Ph.D. (1926)	Professor of Forestry
ROBERT BASCOM AIKEN, M.D. (1941)	Associate Professor of Preventive Medicine
ALFRED JAMES ALBRECHT, M.S. (1957)	Instructor in Speech
FREDERICK CECIL ALDRICH, B.Ed., Captain U. S. Air Force (1954)	Assistant Professor of Air Science and Tactics
GORDON JAMES ALLEN, B.S., Captain U. S. Air Force (1956)	Assistant Professor of Air Science and Tactics
SINCLAIR TOUSEY ALLEN, JR., M.D. (1948)	Associate Professor of Medicine
ELLSWORTH LYMAN AMIDON, M.D. (1933)	Professor of Medicine
RICHARD WALKER AMIDON, M.D. (1949)	Instructor in Clinical Medicine
*HEINZ LUDWIG ANSBACHER, Ph.D. (1946)	Professor of Psychology
EARL LEE ARNOLD, Ph.D. (1953)	Associate Professor of Agricultural Engineering
*HENRY VERNON ATHERTON, Ph.D. (1949-51; 1953)	Assistant Professor of Dairy Manufacturing
*ROBERT SHILLINGFORD BABCOCK, Ph.D. (1946)	Associate Professor of Political Science
DONALD JAMES BALCH, M.S. (1952-56; 1957)	Assistant Professor of Animal and Dairy Husbandry
*BETTY BANDEL, Ph.D. (1947)	Associate Professor of English
RALPH JOHN BANNISTER (1950)	Instructor in X-Ray Technique
JAMES HENRY BANNON, M.D. (1955)	Assistant Professor of Clinical Medicine
BERNARD BENJAMIN BARNEY, M.D. (1955)	Instructor in Clinical Surgery
JOHN FRYE BELL, M.D. (1947)	Associate Professor of Orthopedic Surgery
ROSS TAYLOR BELL, Ph.D. (1955)	Instructor in Zoology
HAROLD CAHILL BELYEA, M.F. (1956)	Professor of Forestry
*HOWARD GORDON BENNETT, A.M. (1925)	Professor of Music
DANIEL WILLIAM BENNINGHOFF, M.D. (1956)	Instructor in Pathology
KATHERINE ISABEL BLACK, Ph.D. (1957)	Associate Professor of Education
JOHN HARDESTY BLAND, M.D. (1949)	Associate Professor of Clinical Medicine
*CHARLES HUGO BLASBERG, Ph.D. (1944)	Professor of Horticulture
JOHN DOUGLAS BOARDMAN, M.D. (1955)	Instructor in Clinical Obstetrics and Gynecology
CLEO ANN BOEHRINGER (MRS. W. E.) (1957)	Instructor in Dental Hygiene
*SAMUEL NATHANIEL BOGORAD, Ph.D. (1946)	Professor of English
*WESSON DUDLEY BOLTON, D.V.M. (1950)	Professor of Animal Pathology
CHARLES FARRINGTON BOND, Ph.D. (1950-55; 1957)	Assistant Professor in Zoology
ANN LORD BONNEY (MRS. J. H.), B.S. (1956)	Instructor in Nursing
DAVID MARSH BOSWORTH, M.D. (1922-25; 1942)	Consultant in Orthopedic Surgery

- RICHARD EMILE BOUCHARD, M.D. (1955) *Instructor in Medicine*
 *ALEC BRADFIELD, M.S. (1947) *Professor of Dairy Manufacturing*
 *CHARLES ERNEST BRAUN, Ph.D. (1928) *Pomeroy Professor of Chemistry*
 EDWARD HOBART BRAZEL, JR., M.D. (1956) *Instructor in Clinical Anesthesia*
 MARY EVELYN BREEN, B.S. (1957) *Instructor in Medical Technology (Pathology)*
 LELAND LAWRENCE BRIGGS, M.B.A. (1927) *Professor of Economics*
 GEORGE WILSON BROOKS, M.D. (1953) *Assistant Professor of Clinical Psychiatry*
 CONSTANCE LORRAINE BROWN, M.S. (1928) *Assistant Professor of Chemistry*
 MARION HUNTINGTON BROWN, M.S. (1942) *Assistant Professor of Home Economics*
 JACK RYAN BROWNFIELD, M.A. (1954) *Instructor in English*
 JEAN BULLOCK, M.S. (1956) *Assistant Professor of Medical Social Service*
 HARRIETT NOVITA BURROUGHS, M.S. (1957) *Assistant Professor of Nursing*
 ROY VEDDER BUTTLES, M.D. (1950) *Assistant Professor of Pathology*
 ROBERT NOLAN CAIN, M.D. (Jan. 1953) *Instructor in Clinical Surgery*
 CHARLES LYMAN CALAHAN, M.S. (1948) *Lecturer in Horticulture*
 MARTHA MARIE CALDWELL, M.S. (1954) *Associate Professor of Home Economics*
 THOMAS WRIGHT MOIR CAMERON, Ph.D., D.Sc. (1942) *Visiting Professor of Tropical Medicine*
 MARTIN JOHN CANNON, M.D. (1953) *Instructor in Clinical Obstetrics and Gynecology*
 MAURICE RAYMOND CARON, M.D. (1953) *Instructor in Clinical Psychiatry*
 HOWARD JULIAN CARPENTER, M.S. (1947) *Assistant Professor of Mechanical Engineering*
 *ALFRED HAYES CHAMBERS, Ph.D. (1948) *Associate Professor of Physiology and Biophysics*
 WILBERT FRANKLIN CHAMBERS, Ph.D. (1955) *Assistant Professor of Anatomy*
 *JAMES PATRICK CHAPLIN, Ph.D. (1947) *Professor of Psychology*
 HSU CHEN, Ph.D. (Feb. 1, 1958) *Assistant Professor of Electrical Engineering*
 RUPERT ADDISON CHITTICK, M.D. (1944) *Professor of Psychiatry*
 BENJAMIN FRANKLIN CLARK, M.D. (1952) *Assistant Professor of Clinical Obstetrics and Gynecology*
 PAUL DENNISON CLARK, M.D. (1930) *Associate Professor of Clinical Pediatrics*
 ROBERT WILLARD COCHRAN, Ph.D. (1954) *Instructor in English*
 JULIUS GEORGE COHEN, M.D. (1950) *Instructor in Clinical Psychiatry*
 FRANCIS PEABODY COLBURN, Ph.B. (1942) *Professor of Art*
 RICHARD KISTLER CONKLIN, D.D.S. (1950) *Instructor in Dental Hygiene*
 *CLINTON DANA COOK, Ph.D. (1952) *Associate Professor of Chemistry*
 *ROBERT WILLIAM COON, M.D. (1955) *Professor of Pathology*
 FAYE CRABBE, A.M. (1943) *Professor of Nursing*
 ALBERT JAMES CRANDALL, M.D. (1939) *Instructor in Clinical Surgery*
 GEORGE CHAPMAN CROOKS, Ph.D. (1930) *Associate Professor of Chemistry*
 *ALBERT DARY CROWELL, Ph.D. (1955) *Assistant Professor of Physics*
 LEONARD VINCENT CROWLEY, M.D. (1956) *Assistant Professor of Pathology*
 JOHN CHARLES CUNNINGHAM, M.D. (1946) *Shipman Professor of Ophthalmology*
 *MALCOLM DANIEL DAGGETT, Ph.D. (1945) *Professor of Romance Languages*
 JOHN FIDLAR DALY, M.D. (1949) *Professor of Dermatology*
 ARTHUR KENT DAVIS, Ph.D. (1955) *Associate Professor of Sociology*
 GRAHAM CORKRAN DAVIS, A.B., 1st Lt. U. S. Army (1956) *Assistant Professor of Military Science and Tactics*
 JEAN MARGARET DAVISON, Ph.D. (1955) *Assistant Professor of Classical Languages and History*
 ALFRED MILLS DECKER, JR., M.D. (1956) *Assistant Professor of Clinical Surgery*
 LUBOMIR ATANASOV DELINESCEFF DELLIN, M.A., J.S.V. (1957) *Assistant Professor of Economics*
 GINO ALDO DENTE, M.D. (1950) *Instructor in Clinical Anesthesia*
 DAVID ALLEN DEPATIE, A.B. (1957) *Instructor in Physics*
 RALPH HOYT DETHEROW, B.S., Captain U. S. Army (1957) *Assistant Professor of Military Science and Tactics*
 GLENN HANCOCK DEWEY, B.S. (1957) *Instructor in Engineering Graphics*
 ROLAND FREEMAN DOANE, D.U. (1925) *Associate Professor of Romance Languages*
 LOUIS SMITH DODD, B.S.E.E. (1957) *Assistant Professor of Civil Engineering*

- *CHARLES GEORGE DOLL, Ph.D. (1927) *Professor of Geology and Mineralogy*
 RAYMOND MADIFORD PEARDON DONAGHY, M.D. (1946) *Professor of Neurosurgery*
- JOHN EDWARD DONNELLY, M.A. (1952) *Associate Professor of Physical Education for Men*
 ROBERT KINGSLAND DOTEN, Ph.D. (1951) *Associate Professor of Geology*
 HOWARD DUCHACEK, M.S.A.E. (1949) *Associate Professor of Mechanical Engineering*
 WILFRID G. DUDEVOIR, M.S. (Feb., 1958) *Instructor in Electrical Engineering*
 *FRED WILLIAMS DUNIHUE, Ph.D. (1936) *Professor of Anatomy*
 HERBERT ASHLEY DURFEE, JR., M.D. (1957) *Instructor in Clinical Obstetrics and Gynecology*
- *WINFIELD BOOTH DURRELL, D.V.M. (1949) *Associate Professor of Animal Pathology*
 LAURA CORBIN DUSTAN, M.N. (1954) *Assistant Professor of Nursing*
 JULIUS SOLOMON DWORK, Ph.D. (1954) *Associate Professor of Mathematics*
 *GEORGE DYKHUIZEN, Ph.D. (1926) *Marsh Professor of Intellectual and Moral Philosophy*
 OLIVER ROLFE EASTMAN, M.D. (1948) *Associate Professor of Clinical Obstetrics and Gynecology*
- ROBERT WEBSTER EASTMAN, LL.B. (1953) *Instructor in Political Science*
 *ARTHUR RAYMOND ECKELS, D.Eng. (1956) *Professor of Electrical Engineering*
 ELIZABETH M. ELBERT, Ph.D. (Jan., 1957) *Assistant Professor of Home Economics*
 DONALD MERRITT ELDRED, M.A. (1949) *Instructor in Clinical Psychology*
 RODNEY WALTER ELDRIDGE, B.A. (1957) *Instructor in Economics*
 LOUIS WILLIAM ESPOSITO, M.D. (1954) *Instructor in Clinical Urology*
 ALBERT CHURCHILL ETTINGER, M.A. (1955) *Instructor in Political Science*
 JOHN CLIFFORD EVANS, B.S. (1937) *Associate Professor of Physical Education for Men*
 WILLIAM THOMAS FAGAN, JR., M.D. (1953) *Assistant Professor of Clinical Urology*
 DAVID S. FAIGEL, D.D.S. (1954) *Instructor in Dental Hygiene*
 FRANK JAMES FALCK, Ph.D. (1957) *Assistant Professor of Preventive Medicine*
 GREGORY ALEXANDER FALLS, Ph.D. (1952) *Associate Professor of Speech*
 DOUGLAS PATTEN FAY, M.S. (1953) *Assistant Professor of Civil Engineering*
 JEREMY POLLARD FELT, M.S. (1957) *Instructor in History*
 CHARLES CARROLL FISHBURNE, M.A., Lt. Col. U. S. Air Force (1957) *Professor of Air Science and Tactics*
- ROBERT FITZSIMMONS, M.S. (1949) *Assistant Professor of Animal and Dairy Husbandry*
 THEODORE ROSS FLANAGAN, Ph.D. (1953) *Assistant Professor of Agronomy*
 WILLARD ALLEN FLETCHER, Ph.D. (1955) *Assistant Professor of History*
 ARTHUR HOWARD FLOWER, JR., M.D. (1950) *Assistant Professor of Clinical Dermatology*
- JOSEPH CLAYTON FOLEY, M.D. (1954) *Assistant Professor of Clinical Radiology*
 *MURRAY WILBUR FOOTE, Ph.D. (1947-51; 1953) *Assistant Professor of Biochemistry (Agr.)*
- JOHN LOUIS PHILIPPE FOREST, M.D. (1942) *Instructor in Clinical Psychiatry*
 *PERCY AUSTIN FRALEIGH, Ph.D. (1927) *Flint Professor of Mathematics*
 ALDO GINO FRANCESCHI, M.D. (1946) *Instructor in Clinical Urology*
 PAUL KENDRICK FRENCH, M.D. (1924) *Professor of Clinical Medicine*
 SEWARD FREDERICK FRENCH, B.S., Captain U. S. Army (1957) *Assistant Professor of Military Science and Tactics*
- MINORU FUKUDA, M.D. (1956) *Instructor in Clinical Anesthesia*
 *FRED WILLIAM GALLAGHER, Ph.D. (1944) *Professor of Bacteriology*
 *ALEXANDER GERSHOY, Ph.D. (1923) *Professor of Botany*
 CHARLES ALFRED GIFFORD, M.S. (1957) *Instructor in Zoology*
 BRADY BLACKFORD GILLELAND, Ph.D. (1957) *Associate Professor of Classical Languages*
- JOE RAY GINGRICH, Ph.D. (1955) *Assistant Professor of Agronomy*
 *ERLAND CHENEY GJESSING, Ph.D. (1954) *Associate Professor of Biochemistry*
 ARTHUR GLADSTONE, M.D. (1936) *Associate Professor of Clinical Surgery*
 LYMAN JAY GOULD, M.A. (1953) *Assistant Professor of Political Science*
 *DONALD CROWTHER GREGG, Ph.D. (1946) *Professor of Chemistry*
 EDWIN CHARLES GREIF, M.S. (1950) *Associate Professor of Economics*
 HOWARD THEODORE GUARE, M.D. (1952) *Assistant Professor of Clinical Radiology*

- PIERRE GUIET, M.A. (1954) *Instructor in English*
 CARLETON RAYMOND HAINES, M.D. (1950-52; 1954) *Instructor in Surgery (Oncology)*
- ROBERT WILLIAM HALL, Ph.D. (1957) *Assistant Professor of Philosophy and Religion*
 CALVIN HANNA, Ph.D. (1955) *Assistant Professor of Pharmacology*
 JANE YARD HARSBERGER, M.A. (1954) *Associate Professor of Public Health Nursing*
 ROLF NORDAHL BRUN HAUGEN, Ph.D. (1947) *Associate Professor of Political Science*
 PAUL LEHMANN HEININGER, D.D.S. (1950) *Instructor in Dental Hygiene*
 MARY CATHERINE HEININGER (MRS. P. L.), R.N. (1951) *Instructor in Dental Hygiene*
- JOHN WILBUR HEISSE, JR., M.D. (1956) *Instructor in Clinical Ophthalmology and Otolaryngology*
 DONALD CEDRIC HENDERSON, M.S. (1944) *Associate Professor of Poultry Husbandry*
 RAUL HILBERG, Ph.D. (Feb., 1956) *Assistant Professor of Political Science*
 CHARLES WILLIAM HOILMAN, M.S. (1949) *Associate Professor of Electrical Engineering*
 *RICHARD JOHN HOPP, M.S. (1947) *Associate Professor of Horticulture*
 HARRIET HOWARD, M.A. (1956) *Instructor in Mathematics*
 RICHARD JOHN HOWARD, M.S. (1957) *Assistant Professor of Physics*
 JOHN LORENZO HUBBELL, M.A. (1957) *Assistant Professor of Romance Languages*
 ROBERT BRUCE HUBER, Ph.D. (1946) *Professor of Speech*
 *JOHN CHARLES HUDEN, Ph.D. (1950) *Professor of Education*
 *MURIEL JOY HUGHES, Ph.D. (1942-44; 1945) *Professor of English*
 A. M. Md. MOAZZAMUL HUQ, Ph.D. (1956) *Assistant Professor of Economics*
 JEAN ELOISE ICHTER, M.S. (1948-52; 1953) *Assistant Professor of Nursing*
 *RICHARD GUY INSKEEP, Ph.D. (1953) *Associate Professor of Chemistry*
 WILLIAM LLOYD IRVINE, Ph.D. (1957) *Associate Professor of Education*
 JOSEPH ANTHONY IZZO, JR., Ph.D. (1956) *Assistant Professor of Mathematics*
 WILLIAM JAMESON, M.A. (1957) *Instructor in English*
 THOMAS HARRY JOHNS, B.S., Captain, U. S. Air Force (1956) *Assistant Professor of Air Science*
 ELBRIDGE EUGENE JOHNSTON, M.D. (1951) *Assistant Professor of Clinical Medicine*
 *STUART LYNDE JOHNSTON, Ph.D. (1940-44; 1946) *Professor of Romance Languages*
 WILLIAM HERBERT JOHNSTON, M.D. (1952) *Instructor in Clinical Radiology*
 *DONALD BOYES JOHNSTONE, Ph.D. (1948) *Associate Professor of Microbiology*
 *LEONIDAS MONROE JONES, Ph.D. (1951) *Assistant Professor of English*
 ROY GEORGE JULOW, Ph.D. (1957) *Assistant Professor of Romance Languages*
 EARLE ERVIN JULSON, Ph.D. (Feb., 1957) *Assistant Professor of Agricultural Education*
 HARRY HELMUTH KAHN, M.A. (1950-53; 1954) *Assistant Professor of German*
 JAY EDGAR KELLER, M.D. (1950) *Instructor in Clinical Surgery*
 *JOHN HARVEY KENT, Ph.D. (1950) *Roberts Professor of Classical Languages and Literature*
- GEORGE VINCENT KIDDER, Ph.D. (1922) *Professor of Classical Languages and Literature*
 THOMAS CLAIR KING, Ed.D. (1951) *Professor of Education*
 DAVID LESLIE KINSEY, M.A. (1950) *Assistant Professor of Music*
 FRIEDRICH WILHELM KLEMPERER, M.D. (1955) *Assistant Professor of Clinical Medicine*
- STEPHEN CECIL KNIGHT, JR., M.S. (1952) *Associate Professor of Civil Engineering*
 ESTHER LUCILE KNOWLES, M.S. (1945) *Associate Professor of Home Economics*
 EARL ARQU KOILE, Ed.D. (1956) *Professor of Education*
 ROY KORSON, M.D. (1951-52; 1954) *Associate Professor of Pathology*
 DWIGHT JEROME KRESGE, M.D. (Jan., 1958) *Instructor in Preventive Medicine (General Practice)*
- RAYMOND FRANK KUHLMAN, M.D. (1951) *Assistant Professor of Clinical Orthopedic Surgery*
 ARTHUR SAUL KUNIN, M.D. (1957) *Instructor in Medicine and Clinical Biochemistry*
 ANNETTE IZOLA LACHANCE, B.S. (Jan., 1957) *Instructor in Education*
 MORRIS WILLIAMS LAMBIE, M.D. (1955) *Assistant Professor of Clinical Medicine*
 *MERTON PHILIP LAMDEN, Ph.D. (1947) *Associate Professor of Biochemistry*
 JOHN CLIFFORD LANTMAN, M.D. (1957) *Instructor in Preventive Medicine*
 RALPH ROBERT LAPOINTE, M.S. (1951) *Instructor in Physical Education for Men*

- KATHERINE BAKER LAUGHTON, M.S. (1957) *Assistant Professor of Biostatistics*
 PETER PAUL LAWLOR, M.D. (1939) *Assistant Professor of Clinical Otolaryngology*
 EUGENE LEPESCHKIN, M.D. (1947) *Associate Professor of Experimental Medicine*
 DAVID ALLEN LESOURD, Ph.D. (1952) *Assistant Professor of Economics*
 LOWELL STERN LEVIN, Ed.D. (Jan., 1957) *Assistant Professor of Health Education*
 WILLIAM J. LEWIS, Ph.D. (1954) *Assistant Professor of Speech*
 LEON ROBERT LEZER, M.D. (1954) *Associate Professor of Preventive Medicine*
 HARRY LIGHTHALL, JR., M.S. (1955) *Instructor in Mathematics*
 *GEORGE THOMAS LITTLE, Ph.D. (1950) *Associate Professor of Political Science*
 *JACK ERNEST LITTLE, Ph.D. (1945) *Professor of Biochemistry (Agr.)*
 FRANK HOWARD LIVAK, M.S. (1957) *Instructor in Economics*
 *JOHN HUTCHISON LOCHHEAD, Ph.D. (1942) *Professor of Zoology*
 *PHILIPP HANS LOHMAN, Ph.D. (1945) *Converse Professor of Commerce and Economics*
 *LITTLETON LONG, Ph.D. (1949) *Assistant Professor of English*
 CHAUNCEY CHESTER LOOMIS, JR., M.A. (1955) *Instructor in English*
 CARL LUCARINI, A.M. (1928) *Assistant Professor of Chemistry*
 JEROLD FRANCIS LUCEY, M.D. (1956) *Assistant Professor of Pediatrics*
 ELEANOR MERRIFIELD LUSE, Ph.D. (1947) *Professor of Speech*
 JOHN FREDERICK LYNCH, M.D. (1939) *Instructor in Clinical (Industrial) Surgery*
 IONA JEAN McANDREWS, B.A. (1957) *Instructor in Physical Education for Women*
 *HERBERT CHRISTIAN McARTHUR, Ph.D. (1950) *Assistant Professor of English*
 ANNE CAROLYN MCCOLL, B.S. (1957) *Instructor in Nursing*
 THOMAS JULIAN McCORMICK, JR., M.F.A. (1956) *Assistant Professor of Art*
 VERNE LIONEL McDONALD, JR., M.Ed. (1956) *Instructor in Education*
 KATHERINE MacDONALD, M.S. (Feb., 1958) *Assistant Professor of Public Health Nursing*
 RUTH ANNE MacDONALD, M.S. (1957) *Assistant Professor of Nursing*
 JAMES BISHOP MCGILL, M.D. (1952) *Instructor in Clinical Surgery*
 ROBERT JAMES McKAY, JR., M.D. (1950) *Professor of Pediatrics*
 EDD RUTHVEN McKEE, M.S., E.E. (1934) *Professor of Electrical Engineering*
 MAY McMILLAN, M.S. (Jan., 1957) *Assistant Professor of Nutrition*
 MARGUERITE DOW McNEIL, M.Ed. (1955) *Assistant Professor of Education*
 EDWARD DOUGLAS McSWEENEY, M.D. (1923) *Assistant Professor of Gynecology*
 ALBERT GEORGE MACKAY, M.D. (1933) *Professor of Surgery*
 *WILLIAM HOOPER MACMILLAN, Ph.D. (1954) *Assistant Professor of Pharmacology*
 JOHN VAN SICKLEN MAECK, M.D. (1948) *Professor of Obstetrics and Gynecology*
 †*GEORGE ALBERT MALE, Ph.D. (1952) *Associate Professor of Education*
 J. EDWARD MARCEAU, D.D.S. (1950-52; 1954) *Instructor in Dental Hygiene*
 CLARE KENT MARSHALL (MRS. E. R.), M.D. (1955) *Instructor in Clinical Psychiatry and in Clinical Neurology*
 GILBERT ADAMS MARSHALL, M.S. (1947) *Associate Professor of Mechanical Engineering*
 *FREDERIC CARVER MARSTON, JR., Ph.D. (1948) *Professor of English*
 ‡HERBERT LLOYD MARTIN, M.D. (1954) *Assistant Professor of Clinical Neurology*
 *JAMES WALLACE MARVIN, Ph.D. (1939) *Professor of Botany*
 INA MAXSON, M.S. (1947) *Assistant Professor of Medical Technology and Assistant in Clinical Pathology*
 MRS. SALLY BERRY MAYBURY, Ed.D. (1944) *Associate Professor of Economics*
 HAROLD EDWARD MEDIVETSKY, M.D. (1937) *Assistant Professor of Clinical Medicine*
 *ALVIN REES MIDGLEY, Ph.D. (1951) *Professor of Agronomy*
 *REGINALD VENN MILBANK, M.S. (1946-48; 1949) *Professor of Civil Engineering*
 DONALD BARKER MILLER, M.D. (1951) *Associate Professor of Clinical Surgery (Thoracic)*
 JEAN BEATTIE MILLIGAN, M.A. (1953) *Assistant Professor of Nursing*
 ERNEST LEE MILLS, M.D. (1955) *Instructor in Clinical Anesthesia*
 ISABEL CLARK MILLS (MRS. C. H.), A.M. (1932) *Assistant Professor of Art*

† On leave 1957-58.

‡ On leave first semester.

- HENRY DAVIS MINOT, JR., M.D. (1956)
Instructor in Clinical Thoracic and Cardiac Surgery
- JAMES LEO MONAHAN, B.S., Major U. S. Air Force (1955)
Assistant Professor of Air Science and Tactics
- *PAUL AMOS MOODY, Ph.D. (1927) *Howard Professor of Natural History and Zoology*
 GRACE ELIZABETH MORRISSEY, M.A. (1953) *Instructor in Mathematics*
 DOROTHY JACKSON MORROW, M.D. (1952) *Instructor in Clinical Pediatrics*
 RUFUS CLEGG MORROW, JR., M.D. (1951) *Associate Professor of Otolaryngology*
 *BENNETT BRONSON MURDOCK, JR., Ph.D. (1951) *Associate Professor of Psychology*
 *MILTON JOSEPH NADWORNY, Ph.D. (1952) *Associate Professor of Economics*
 MARILYN JANE NASS, M.S. (1957) *Instructor in Physical Education for Women*
 CLIFFORD ALBERT NAULT, JR., M.A. (1957) *Instructor in English*
 GEORGE DELNO NELSON, JR., B.S., Major U. S. Army (1954)
Assistant Professor of Military Science and Tactics
- CHESTER ALBERT NEWHALL, M.D. (1929) *Thayer Professor of Anatomy*
 AUDREY EVELYN NEWTON, M.S. (1955) *Assistant Professor of Home Economics*
 GEORGE HUBERT NICHOLSON, A.M. (1923) *Assistant Professor of Mathematics*
 *ANDREW EDGERTON NUQUIST, Ph.D. (1938) *McCullough Professor of Political Science*
- ELBERT AUSTIN NYQUIST, M.S., C.P.A. (1953) *Assistant Professor of Economics*
 LENA RAUB OAKLEY, M.A. (1947) *Associate Professor of Nursing*
 ROBERT EMMETT O'BRIEN, M.D. (1955) *Instructor in Clinical Medicine*
 CHARLES HENRY OKEY, Ph.D. (1950) *Assistant Professor of Bacteriology*
 DONALD AUSTIN OLEWINE, Ph.D. (1957) *Instructor in Physiology*
 GLENN RICHARD OPPFELT, M.A. (1954) *Instructor in Speech*
 *JOHN OGDEN OUTWATER, JR., Sc.D. (1956) *Professor of Mechanical Engineering*
 HENRI LOUIS CACHE, M.D. (1951) *Instructor in Clinical Surgery*
 HAROLD GORDON PAGE, M.D. (1954) *Instructor in Surgery*
 †EUGENE MORTON PALMER, B.S. (1957) *Instructor in Electrical Engineering*
- *IPPOCRATES PAPPOUTSAKIS, Mus.M. (1940) *Professor of Music*
 VICTOR H. PAQUET, B.S. (1949) *Assistant Professor of Graphics*
 MALCOLM SKEELS PARKER, M.A. (1953) *Assistant Professor of Romance Languages*
 MARLYN JACK PARKER, M.S. (1955) *Instructor in Speech*
 EDWIN MATTSON PAXSON, M.D. (1957) *Instructor in Clinical Pediatrics*
 HERBERT DEAN PEARL, A.M. (1941-45; 1947) *Professor of Education*
 OSCAR SYLVANDER PETERSON, JR., M.D. (1944) *Associate Professor of Clinical Radiology and Associate in Biophysics*
- PATRICIA MARIE PETERSON, M.S. (1955) *Instructor in Physical Education for Women*
 FRED A. PHILLIPS, M.S. (1954) *Assistant Professor of Physical Education for Women*
 *HAROLD BARNARD PIERCE, Ph.D. (1937) *Professor of Biochemistry*
 WINTHROP WALKER PIPER, M.A. (1955) *Instructor in English*
 STEPHEN CLAY PLUMB, B.S. (1957) *Instructor in Electrical Engineering*
 SEYMOUR POLLOCK, A.M. (1956) *Instructor in Romance Languages*
 JAMES EUGENE POOLEY, A.M. (1928) *Associate Professor of Classical Languages and History*
- †*WILLARD BISSELL POPE, Ph.D. (1934) *Frederick Corse Professor of English Language and Literature*
- ARCHIBALD THOMPSON POST, Ed.M. (1929) *Associate Professor of Physical Education for Men*
- *MILTON POTASH, Ph.D. (1951) *Assistant Professor of Zoology*
 PLATT RUGAR POWELL, M.D. (1949) *Associate Professor of Clinical Urology*
 HENRY LEWIS PRATT, M.D. (1952) *Instructor in Clinical Obstetrics and Gynecology*
 MARY LOUISE PRATT, M.Ed. (1955) *Assistant Professor of Economics*
 WILLIAM ARTHUR PRATT, M.D. (1950) *Instructor in Clinical Medicine*
 *HERBERT EVERETT PUTNAM, Ph.D. (1931) *Associate Professor of History*
 PHYLLIS MELVILLE PUTNBY, B.S. (1949) *Assistant Professor of Dental Hygiene*
 †*WILHELM RAAB, M.D. (1939) *Professor of Experimental Medicine*

† Fall semester.

† On leave 1957-58.

- JAMES JOSEPH WALSH RALEIGH, M.D. (1955) Assistant Professor of Clinical Medicine
 *LOUISE ADELE RAYNOR, Ph.D. (1946) Associate Professor of Botany
 ELMER MCCREADY REED, M.D. (1948) Assistant Professor of Otolaryngology
 HELEN JOAN REID, M.A. (1956) Assistant Professor of Home Economics
 EDWARD K. REIMAN, D.D.S. (1951) Instructor in Dental Hygiene
 DIANNE RICE, B.S. (1957) Instructor in Physical Education for Women
 *WILLIAM HUGH RIDDELL, Ph.D. (1948) Professor of Animal and Dairy Husbandry
 HEATH KENYON RIGGS, Ph.D. (1953) Assistant Professor of Mathematics
 *WILLIAM VAN BOGAERT ROBERTSON, Ph.D. (1945) Professor of Biochemistry and Associate Professor of Experimental Medicine
 SPAULDING ROGERS, Ph.D. (Feb., 1958, second semester only) Visiting Professor of Psychology
 ALBAN BENNETT ROONEY, M.S. (1922) Associate Professor of Physics
 JAMES ALBERT ROOT, M.C.E. (1948) Associate Professor of Civil Engineering
 JOSEPH ROSENSTEIN, M.D. (1955) Assistant Professor of Clinical Radiology
 DIGHTON FRANCIS ROWAN, Ph.D. (1957) Assistant Professor of Bacteriology
 LYMAN SMITH ROWELL, M.S. (1925) Associate Professor of Zoology
 CHARLES BRUSH RUST, M.D. (1948) Assistant Professor of Clinical Orthopedic Surgery
 ARTHUR FRANK SABOSKI, B.S. (1957) Lecturer in Commerce and Economics
 ALBERT WILLIAM SADLER, M.A. (1956) Assistant Professor of Philosophy and Religion
 WADI I. SAWABINI, D.D.S. (1950) Instructor in Dental Hygiene
 ROBERT NEWTON SAXBY, M.D. (1950) Instructor in Clinical Radiology
 *ARNOLD HAROLD SCHEIN, Ph.D. (1947) Associate Professor of Biochemistry
 EDWIN CALVIN SCHNEIDER, M.S. (1946) Associate Professor of Agricultural Engineering
 *NORMAN JAMES SCHOONMAKER, Ph.D. (1956) Professor of Mathematics
 *HAROLD SSESSEL SCHULTZ, Ph.D. (1946) Professor of History
 HERBERT LOUIS SCHULTZ, M.A. (1957) Assistant Professor of Music
 GEORGE ADAM SCHUMACHER, M.D. (1950) Professor of Neurology
 MALCOLM FLOYD SEVERANCE, M.A. (1951-52; 1953) Assistant Professor of Economics
 WILLIAM IRELAND SHEA, M.D. (1952) Instructor in Clinical Surgery
 LAURENCE FOREST SHOREY, M.S. (1926) Associate Professor of Electrical Engineering
 *FERDINAND JACOB MORRIS SICHEL, Ph.D. (1937) Professor of Physiology and Biophysics
 MORRIS LEON SIMON, M.A. (1954) Instructor in Political Science
 RUTH GERTRUDE SIMOND, Ph.D. (1948) Assistant Professor of Mathematics
 JAMES EDWIN SIMPSON, M.D. (1953) Instructor in Clinical Orthopedic Surgery
 ETHAN ALLEN HITCHCOCK SIMS, M.D. (1950) Associate Professor of Clinical Biochemistry and Medicine
 ROBERT ORVILLE SINCLAIR, M.S. (1953-55; 1956) Assistant Professor of Agricultural Economics
 †ADAM STANISLAS SKAPSKI, Ph.D. (1953) Professor of Physics
 HOWARD DARELL SLACK, D.D.S. (1950) Instructor in Dental Hygiene
 NORMAN JOSEPH SLAMECKA, Ph.D. (1957) Instructor in Psychology
 WILLIAM JOSEPH SLAVIN, JR., M.D. (1942) Associate Professor of Obstetrics and Gynecology
 ALBERT MATTHEWS SMITH, Ph.D. (1957) Assistant Professor of Animal and Dairy Husbandry
 *DURWOOD JAMES SMITH, M.D. (Jan., 1953) Professor of Pharmacology
 †HOWARD MARSHALL SMITH, JR., M.S. (1947) Professor of Electrical Engineering
 KENNETH MORTON SMITH, M.S. (1957) Assistant Professor of Medical Social Service
 ROBERT PEASE SMITH, M.D. (1951-54; 1956) Instructor in Medicine
 ROBERT TRAFTON SMITH, M.S. (1956) Instructor in Poultry Husbandry
 LAWRENCE RICHARD SNOWMAN, B.S. (1957) Instructor in Electrical Engineering
 ARTHUR BRADLEY SOULE, JR., M.D. (1928) Professor of Radiology
 THOMAS JOHN SPINNER, JR., M.A. (1957) Instructor in History

† On leave second semester.

‡ On leave 1957-58.

- *THOMAS SPROSTON, JR., Ph.D. (1946) *Professor of Botany*
 ERNEST STARK, M.D. (1945) *Associate Professor of Pathology*
 SADAH SHUCHARI START (MRS. W. P.) (1946-48; 1949) *Assistant Professor of Music*
 MRS. GERTRUDE BLATCHFORD STEARNS, D.Ed. (1957) *Assistant Professor of Education*
 EDWARD WILLIAM STEELE, JR., Ph.D. (1951-53; 1955) *Assistant Professor of Political Science*
 DAVID EDWIN STENQUIST, 1st Lieutenant U. S. Air Force (1957) *Assistant Professor of Air Science and Tactics*
 CHARLES WATTLES STEPHENSON, M.D. (1948) *Associate Professor of Clinical Neurology and Assistant Professor of Clinical Psychiatry*
 §GEORGE ROBERT STIBITZ, Ph.D. (1957) *Visiting Professor of Electrical Engineering*
 NORMAN KENNETH STRASSBURG, M.Ed. (1946) *Assistant Professor of Physical Education for Men*
 WALTER ALVA STULTZ, Ph.D. (1937) *Professor of Anatomy*
 BORYS SURAWICZ, M.D. (1955) *Assistant Professor of Experimental Medicine and Instructor in Clinical Medicine*
 RALPH DANIEL SUSSMAN, M.D. (1946) *Associate Professor of Clinical Pediatrics*
 BURTON SAMUEL TABAKIN, M.D. (1954) *Assistant Professor of Medicine*
 DAVID LATHAM TABER, M.D. (1953) *Instructor in Clinical Obstetrics and Gynecology*
 CHARLES IVES TAGGART, D.M.D. (1942) *Assistant Professor of Oral Hygiene and Dental Medicine*
 MARY SAVINA TAGLIENTE, B.S. (1957) *Instructor in Nursing*
 *FRED HERBERT TAYLOR, Ph.D. (1943) *Professor of Botany*
 CHRISTOPHER MARLOWE TERRIEN, M.D. (1939) *Associate Professor of Clinical Medicine*
 LOUIS GEORGE THABAULT, M.D. (1939) *Instructor in Clinical Surgery*
 WILFRID THABAULT, M.D. (Jan., 1958) *Instructor in Clinical Obstetrics and Gynecology*
 ENOCH HAROLD TOMPKINS, M.S. (1955) *Instructor in Agricultural Economics*
 REUBEN TORCH, Ph.D. (1953) *Assistant Professor of Zoology*
 RANDOLPH SHEPARDSON TOWNE, A.M. (1928) *Assistant Professor of Romance Languages*
 *RAYMOND HERMAN TREMBLAY, Ph.D. (1953) *Associate Professor of Agricultural Economics*
 *JACK TREVITHICK, Ph.D. (1946) *Professor of English*
 VIRGINIA YAPP TROTTER, M.S. (1955) *Associate Professor of Home Economics*
 KEITH FRANK TRUAX, M.D. (1932) *Associate Professor of Clinical Surgery*
 ARTHUR FREDERICK TUTHILL, M.S. (1946) *Associate Professor of Mechanical Engineering*
 MARSHALL COLEMAN TWITCHELL, JR., M.D. (1942) *Assistant Professor of Ophthalmology*
 CHARLES WARREN UNDERHILL, A.M. (Feb., 1958, second semester only) *Assistant Professor of Mathematics*
 HIRAM EUGENE UPTON, M.D. (1930) *Associate Professor of Clinical Medicine*
 FREDERICK WILLIAM VAN BUSKIRK, M.D. (1946) *Associate Professor of Clinical Radiology*
 RALPH LESLIE VANDERSLICE, JR., B.A. (1955) *Instructor in Speech*
 DOROTHY BENDON VAN GHENT, Ph.D. (1952-54; 1955) *Assistant Professor of English*
 KENNETH EVERSON VARNEY, M.S. (1946) *Assistant Professor of Agronomy*
 WILLIAM HENRY DALTON VERNON, Ph.D. (1957) *Associate Professor of Home Economics*
 HUBERT WALTER VOGELMANN, Ph.D. (1955) *Instructor in Botany*
 THOMAS VRIS, Ph.D. (1955) *Assistant Professor of Psychology*
 BENJAMIN BOOTH WAINWRIGHT, A.M. (1925) *Associate Professor of English*
 LUCILLE WAKEFIELD, M.S. (Jan., 1957) *Assistant Professor of Home Economics*
 *NELSON LEE WALBRIDGE, Ph.D. (1924) *Professor of Physics*
 LESTER JULIAN WALLMAN, M.D. (1948) *Associate Professor of Neurosurgery*

§ Fall semester.

FRED CLARENCE WEBSTER, Ph.D. (1951-53; 1956)	<i>Assistant Professor of Agricultural Economics</i>
TRUMAN MARION WEBSTER, A.B. (1945)	<i>Assistant Professor of German</i>
BENJAMIN FRANCIS WEEMS, III, M.A. (1956)	<i>Instructor in English</i>
FRANCIS ALEXANDER WEINRICH, M.A. (1950)	<i>Assistant Professor of Music</i>
GEORGE WILLIAM WELSH, 3rd, M.D. (1956)	<i>Instructor in Medicine</i>
ALBERT FOBERG WESSEN, Ph.D. (1956)	<i>Assistant Professor of Medical Sociology</i>
WENDELL JENNISON WHITCHER, Ph.D. (1952)	<i>Associate Professor of Chemistry</i>
ESTON TROUT WHITE, M.A., Lieutenant Colonel U. S. Army (1957)	<i>Professor of Military Science and Tactics</i>
JAMES FELLOWS WHITE, Ph.D. (1955)	<i>Associate Professor of German</i>
HILTON ADDISON WICK, LL.B. (1949)	<i>Instructor in Economics</i>
BLAIR WILLIAMS, M.S. (1949-50; 1951)	<i>Assistant Professor of Home Economics</i>
JANET BROWNELL WILSON, M.A. (1957)	<i>Instructor in Home Economics</i>
†*WALTER LeROY WILSON, Ph.D. (1949)	<i>Assistant Professor of Physiology and Biophysics</i>
GEORGE ANTHONY WOLF, JR., M.D. (1952)	<i>Professor of Clinical Medicine</i>
*GLEN MEREDITH WOOD, Ph.D. (1950)	<i>Associate Professor of Agronomy</i>
FLORENCE MAY WOODARD, Ph.D. (1923)	<i>Associate Professor of Economics</i>
JANICE EMELIE WOODARD, M.S. (1956)	<i>Instructor in Home Economics</i>
NORMA LOWYN WOODRUFF, M.A. (1952)	<i>Assistant Professor of Nursing</i>
RICHARD S. WOODRUFF, M.D. (1950)	<i>Assistant Professor of Pathology</i>
LLOYD ABRAHAM WOODWARD, M.S. (1920)	<i>Associate Professor of Physics</i>
ALBERT W. WURTHMANN, M.A. (1947)	<i>Assistant Professor of German</i>
WILLIAM GREENHILL YOUNG, M.D. (1949)	<i>Assistant Professor of Clinical Psychiatry</i>
LILLIAN MARGOT YOUNGS, Ph.D. (1957)	<i>Instructor in Zoology</i>

Associates

FRANCIS ARNOLD CACCAVO, M.D.	<i>Clinical Associate in Surgery</i>
HARRY LIVINGSTON COLOMBO, M.D.	<i>Clinical Associate in Medicine</i>
JOHN PATRICK CORLEY, M.D.	<i>Clinical Associate in Medicine</i>
WILLIAM NELSON DEANE, Ph.D.	<i>Research Associate in Medical Sociology</i>
WINSTON MILO EDDY, M.D.	<i>Clinical Associate in Medicine</i>
HENRY CHARLES FORRESTER, M.D.	<i>Research Associate in Pharmacology</i>
EDWARD ESAU FRIEDMAN, M.D.	<i>Clinical Associate in Medicine</i>
MARY T. GREENE, M.S.	<i>Research Associate in Botany</i>
WILLIAM H. HEININGER, M.D.	<i>Clinical Associate in Medicine</i>
HERMAN C. HERRLICH, Ph.D.	<i>Research Associate in Experimental Medicine</i>
WILLIAM E. KING, M.D.	<i>Teaching Associate in Pathology</i>
FREDERICK M. LAING, M.S.	<i>Research Associate in Botany</i>
MURDO G. MacDONALD, M.D.	<i>Clinical Associate in Medicine</i>
ALLEN WRAY MATHIES, JR., Ph.D.	<i>Research Associate in Pathology (Parasitology)</i>
JOHN H. McCREA, M.D.	<i>Clinical Associate in Medicine</i>
JOHN LOUIS SAIA, M.D.	<i>Clinical Associate in Medicine</i>
†WILFRID THABAULT, M.D.	<i>Clinical Associate in Obstetrics and Gynecology</i>
JOHN B. TOMPKINS, M.D.	<i>Clinical Associate in Psychiatry</i>
LOUIS J. WAINER, M.D.	<i>Clinical Associate in Medicine</i>
MAURICE J. WALSH, M.D.	<i>Clinical Associate in Medicine</i>
LELON ASHLEY WEAVER, JR., Ph.D.	<i>Research Associate in Experimental Psychology</i>
JAMES G. UTTERBACK, M.D.	<i>Teaching Associate in Pathology</i>

Assistants

Teaching and Research Assistants

HAROLD ERNEST ADAMS, M/Sgt.	<i>Assistant in Military Science</i>
OSCAR R. ATKINSON, JR.	<i>Teaching Assistant in Botany</i>
MARGARET KARIN BERG, B.A.	<i>Research Assistant in Medicine</i>

† On leave second semester.

† First semester.

HOWARD R. BERRIMAN, M/Sgt.	Assistant in Military Science
MRS. LEONA W. BESSEE, R.N.	Research Assistant, Cardiopulmonary Laboratory
MRS. HELEN LOUISE BRINKMAN, A.B.	Research Assistant in Biochemistry
KATHLEEN LORAIN COLMAN	Research Assistant in Pharmacology
JAMES P. CURTIN, SFC.	Assistant in Military Science
MRS. PATRICIA H. DURGIN, B.S.	Research Assistant in Home Economics
MRS. IRMA GAIL FIEDLER, B.A.	Research Assistant in Biochemistry
WILDA ROMAYNE GIGEE, A.B.	Research Assistant in Experimental Medicine
RICHARD GREIST	Research Assistant in Anatomy
JOHN W. HOLTON, JR., M/Sgt.	Assistant in Air Science
MRS. ELEANOR JAMIESON, B.S.	Teaching Assistant in Home Economics
ROBERT J. JENSEN, S/Sgt.	Assistant in Air Science
MRS. LORRAINE BAGDON KORSON, M.S.	Research Assistant in Experimental Medicine
BETTY MAY LAGRANGE, B.S.	Teaching Assistant in Biochemistry
JANICE ELOISE LARRABEE, B.A.	Research Assistant in Physiology and Biophysics
ARNOLD L. MAKELA, S/Sgt.	Assistant in Air Science
MRS. LEWIS A. MATHIES, B.S.	Research Assistant in Pathology
MRS. PATRICIA BIXBY McHUGO	Research Assistant in Pharmacology
MRS. BEVERLY J. McKINLEY, B.S.	Research Assistant in Home Economics
EDWARD FREDERICK MERRILL, B.S.	Teaching Assistant in Biochemistry
MRS. BRENDA MORRISON, B.S.	Teaching Assistant in Biochemistry
MAUREEN O'CONNELL, B.S.	Research Assistant in Medicine
JOSEPH PREVITERA, SFC.	Assistant in Military Science
ELIZABETH REILLY, B.S.	Teaching Assistant in Medical Technology (Pathology)
JEAN MARGARET RYAN, B.S.	Research Assistant in Experimental Medicine
MRS. FLORENCE SCHEIN, M.S.	Research Assistant in Pharmacology
YVONNE K. STARCHESKA	Research Assistant in Experimental Medicine
SHIRLEY JANE STRONG, B.A.	Research Assistant in Pharmacology (Documentation)
PAUL B. STRUYS, S/Sgt.	Assistant in Air Science
ERNEST H. SYLVAIN, S/Sgt.	Assistant in Air Science
WING M. WOON	Research Assistant in Pathology (Photography)

Graduate Assistants

- | | |
|--|---|
| CHARLES L. ABRAMSON, A.B.
(Agricultural Biochemistry) | ANNE-MARIE DEVAL, Lic.Litt.Ang.
(Romance Languages) |
| GRACE ALELE, B.A.
(Mathematics) | FRANK E. DICKSON, B.S.
(Chemistry) |
| HOWARD M. ALLEN, B.S.
(Animal and Dairy Husbandry) | NILES D. GILMOUR, B.S.
(Chemistry) |
| CHADWICK C. ARMS, B.S.
(Animal and Dairy Husbandry) | MARY LOU GOVER, B.S.
(Chemistry) |
| JAMES W. BARNARD, A.B.
(Psychology) | ALUN JONES, B.S.
(Botany) |
| JOYCE R. BELL, B.S.
(Zoology) | KENNETH A. MacDONALD, B.A.
(Mathematics) |
| HUGH R. BEMIS, B.S.
(Horticulture) | DOROTHY MANFREDI, B.S.
(Chemistry) |
| ELWOOD D. BICKFORD, B.S.
(Botany) | ROBERT N. MULLEN, B.S.
(Animal and Dairy Husbandry) |
| GORDON C. BLANCHARD, B.S.
(Agricultural Biochemistry) | DAVID NASJLETI, P.S. di I.
(Romance Languages) |
| JOHN E. BORGES, B.S.
(Chemistry) | JEAN B. OBREITER, B.A.
(Botany) |
| BERTIE R. BOYCE, B.S.
(Horticulture) | GARY S. RESNICK, B.A.
(Zoology) |
| JOHN J. BRINK, B.Sc.
(Biochemistry) | SILVIA A. RISOLIA, P.N. en I.
(Romance Languages) |
| NORMAN F. BRUCE, B.S.
(Chemistry) | FRANCIS J. RUSSO, B.S.
(Agricultural Economics) |
| ROBERT W. CARR, B.S.
(Chemistry) | DAVID E. SOBREVILLA, M.V.
(Animal and Dairy Husbandry) |
| PHILIP D. CHIARAVALLE, B.A.
(Botany) | RICHARD F. STOCKEL, B.S.
(Chemistry) |
| PHILIP W. COOK, B.S.
(Botany) | REGINA M. SULLIVAN, A.B.
(Bacteriology) |
| CORRINE B. DEPATIE, B.S.
(Chemistry) | JOSEPH R. VALENTA, B.S.
(Botany) |

Graduate Fellows

- | | |
|--|--|
| RICHARD L. BROWN, A.B.
(Classics) | ROBERT C. PARKER, A.B.
(Pharmacology) |
| HENRY E. CURLEY, A.B.
(Pathology) | PHILIP G. WHITNEY, B.A.
(Pathology) |
| *JOAN E. McGRANE, A.B.
(English) | †TZAY-YUAN YOUNG
(Electrical Engineering) |
| MARGARET E. MONTA, B.S.
(Economics) | |

Officers of the Library

- | | |
|---|---|
| MORRISON CHANDLER HAVILAND, M.A. | <i>Director of the Library</i> |
| HARRISON ALLEN BRANN, B.D., M.S.L.S. | <i>Agriculture and Documents Librarian</i> |
| MARY BROMER FELL, M.S. | <i>Cataloger, Medical Library</i> |
| SVEN OLAF KARELL, B.A. | <i>Cataloger, Billings Library</i> |
| MRS. HELEN OUSTINOFF, B.A. | <i>Assistant Director and Technical Services Librarian</i> |
| MARION REILLY | <i>Curator of the Collections and Circulation Librarian</i> |
| MRS. REBECCA CAMP SKILLIN, B.S. in L.S. | |
| BETTY ANN WITHROW, B.S. in L.S. | <i>Reference Librarian, Billings Library and Acting Librarian, Wilbur Library</i> |

* First semester.

† Second semester.

ASSISTANTS

Assistants in Administration

Assistants in Library Administration

MRS. JANET-MARIE EMMONS, B.A.
MRS. JOYCE FURREY McLAUGHLIN
MRS. ELIZABETH VAUGHN MYERS, B.A.
MRS. JANET MILLER RICHER, B.A.
ERROL C. SLACK, M.S. in L.S.

Assistant Circulation Librarian
Interlibrary Loan Librarian
Acquisitions Librarian
Assistant Reference Librarian
Cataloger, Wilbur Library

Assistants in Museum Administration

MRS. MARGIT HOLZINGER
MRS. JOAN O'BRIEN

*Curator of Art
Administrative Assistant to Director*

Head Residents

MRS. KATHERINE ARKIN
Phi Sigma Delta
MRS. RUTH BARTLETT
Alpha Chi Omega
MRS. EMILY BILLHARDT
Grassmount
MRS. GLADYS DEAN
Hamilton Hall
MRS. ESTHER DUDLEY
Acacia
MRS. KATHLEEN DUKE
Delta Delta Delta
MRS. LOU M. EDDY
Kappa Alpha Theta
MRS. LESLIE ELGOOD
Sanders Hall
MRS. ETHEL FIFIELD
Alpha Epsilon Phi
MRS. RUTH GORDON
Sigma Nu
MRS. CHRISTIE HOLLISTER
Mason Hall
MRS. LENA HOWARD
Sigma Phi Epsilon
MRS. CORA KIMBALL
Allen House
MRS. GRETA NOYES
Phi Delta Theta

MRS. JESSIE J. PEARL
 Assistant Head Resident
 MISS CARRIE POWER
 Slade Hall
 MRS. CONSTANCE REEVE
 Gamma Phi Beta
 MISS SHIRLEY REID
 Alpha Delta Pi
 MR. AND MRS. MALCOLM SEVERANCE
 Converse Hall
 MRS. ROSANNA SHEPPARD
 Pi Beta Phi
 MRS. LUCY STAPLES
 Englesby House
 MRS. VIVA B. STODDARD
 Coolidge Hall
 MRS. RUTH TAYLOR
 Simpson Hall
 MRS. MARY TOLLERTON
 Robinson Hall
 MRS. HELEN WHITMAN
 Lambda Iota
 MISS JANICE WOODARD
 Home Management House
 MRS. JULIA WORTHIE
 Redstone Hall

Assistants in Infirmary Administration

ELIZABETH WILSON, R.N.
MRS. ANN ARNO, R.N.
IDA BOGUE, R.N.
MRS. MARIE CADORET, R.N.
PATRICIA CRUSE, R.N.
IRENE HALLOCK, R.N.
BETH HILL, R.N.
MARGARET LEVINE, R.N.

[illegible]

Administrative Assistants

IRENE E. ALLEN, Ph.B.	Assistant, Public Relations
KARL A. ANDREN, B.S.	Assistant, Public Relations
JOSEPH J. AYERS	Administrative Assistant, Pharmacology
ANNIS O. BARNEY, Ph.B.	Manager of University Store
N. EDWARD BARTLETT	Administrative Assistant, Physical Education and Athletics
CORNELIA J. BAYLIES, A.B.	Administrative Assistant, Dean's Office, College of Medicine
MRS. ALICE D. BEAMAN	Administrative Assistant, Summer Session and Adult Education
FLORENCE K. BRODIE	Administrative Assistant, Buildings and Grounds and Purchasing
MRS. MADELINE J. COOK, B.S.	Administrative Assistant, Dean of Administration
LYMAN COTE	Trainer and Assistant, Physical Education and Athletics
ELIZABETH N. DOWNER, Ph.B.	Administrative Assistant, Dean's Office, College of Agriculture
RUDOLPH J. FISCHER	Assistant Superintendent, Buildings and Grounds
HELEN E. FRENCH	Cashier
MRS. EDITH V. HILL	Administrative Assistant, Vermont Rehabilitation Center
LEONE JACKSON	Staff Artist, College of Agriculture
MYRON H. JORDON	Administrative Assistant, Accounting
FRANK C. MALLORY	Director of Medical Photography
DOROTHY PEARSON, B.S.	Recorder
GEORGE SAUNDERS, B.S.	Assistant Accountant
MRS. ALLACE C. SCHALK	Administrative Assistant, Preventive Medicine
MRS. PAULA DAME	Film Librarian
MRS. JEANNE S. STEARN, A.B.	Social Worker, Mental Health Clinic
CARL H. VON LAUTZ	Administrative Clerk, College of Agriculture
ARLINE M. WATKINS, A.B.	Assistant Manager, University Store
MARCIA WEBBER, B.S.	Physical Therapist
MRS. JOAN K. WINGATE, B.A.	Assistant, Public Relations

FOOD SERVICE ADMINISTRATION

JOHN MOAK	Manager, Saga Food Service, Waterman
LUCILLE M. WAKEFIELD	Manager, Simpson

Senior Technicians

JOHN C. BOLDOSSER	Pathology
DALLAS BOUSHEY	Anatomy
BERTRAND M. MUZZY	Forestry
JOHN H. PORTER, B.A.	Regulatory Service
AGNES RICHARDSON	Animal Pathology
JAMES W. SLADE, JR., B.S.	Animal Pathology
EARL H. STONE	Agricultural Engineering

University Committees

Effective July 1, 1957

<i>Academic Calendar:</i>	D. B. Johnstone (Chairman), W. B. Durrell, E. C. Greif, L. S. Rowell, W. J. Witcher.
<i>Admissions:</i>	M. J. Nadworny (Chairman), H. C. Collins, A. R. Eckels, Jr., J. E. Little, Jean Milligan, H. B. Pierce, F. H. Taylor, J. F. White, the Deans.
<i>Adult Education:</i>	E. Koile (Chairman), L. J. Gould, H. C. McArthur, Marguerite McNeil, H. K. Riggs, L. S. Rowell, Virginia Trotter.
<i>Athletic Council:</i>	S. N. Bogorad, J. E. Pooley, A. F. Tuthill. (Council will elect its chairman in the fall.)
<i>Buildings and Grounds:</i>	C. E. Braun (Chairman), F. P. Colburn, D. D. Demsky, J. M. Marvin, J. A. Root, L. S. Rowell, A. B. Soule, E. C. Schneider, G. M. Wood.
<i>Ceremonies:</i>	A. E. Nuquist (Chairman), E. L. Arnold, Martha Caldwell, H. J. Carpenter, Muriel Hughes, D. A. Kinsey, J. O. Outwater, A. W. Sadler, W. A. Stultz.

Curriculum: G. T. Little (Chairman), W. R. Adams, F. W. Dunihue, L. Long, Lena Oakley, N. J. Schoonmaker.

Library: L. Long (Chairman), C. D. Cook, M. C. Haviland, S. L. Johnston, Helen Oustinoff, H. D. Pearl, Louise Raynor, F. J. M. Sichel, E. W. Steele, Jr.

Museum: Betty Bandel (Chairman), G. C. Crooks, C. G. Doll, T. J. McCormick, Jr., Isabel Mills, M. Potash, H. E. Putnam, E. Lepeschkin.

Personnel Policy: L. S. Rowell (Chairman), M. C. Haviland, L. R. Kelley, P. R. Miller, G. A. Wolf.

Policy: P. H. Lohman (Chairman), S. N. Bogorad, Faye Crabbe, R. M. P. Donaghy, Esther Knowles, A. E. Nuquist.

Public Relations: R. S. Babcock (Chairman), Laura Dustan, E. C. Greif, W. J. Lewis, K. P. Lipsohn, J. V. Maeck, J. W. Spaven, L. E. Van Benthuyssen, the Deans.

Radiological Safety: O. S. Peterson, Jr. (Chairman), J. Abajian, Jr., E. L. Amidon, P. K. French, D. B. Johnstone, F. J. M. Sichel, A. J. Rooney, A. H. Schein, D. J. Smith, A. B. Soule.

Religious Life: T. M. Adams (Chairman), Constance Brown, H. M. Kahn, S. C. Knight, G. A. Marshall, Dorothy Morrow, A. W. Sadler, R. H. Tremblay.

Residence: H. C. Collins (Chairman), L. R. Kelley, L. D. Latham, C. A. Newhall, H. D. Pearl, E. M. Root.

Student Advisory: H. V. Atherton (Chairman), A. H. Chambers, E. Clifford, D. P. Fay, M. C. Haviland, L. M. Jones, A. G. Kennedy, Eleanor Luse, Audrey Newton, L. S. Rowell, W. Smalakis, Margaret Wing, Norma Woodruff.

Student Aid: H. C. Collins (Chairman), Nelle Adams, G. N. Clerkin, Mary Pratt, N. K. Strassburg, B. J. Mosher, Margaret Wing, the Deans.

Student Health: Elizabeth Wilson (Chairman), R. W. Amidon, E. Clifford, Faye Crabbe, Rankin Harris, J. B. McGill, Freda Phillips, A. T. Post, Phyllis Quinby, C. W. Stephenson.

Student Personnel: Jean Ichter (Chairman), T. Clairmont, A. D. Crowell, H. Duchacek, F. C. Marston, T. M. Webster, the Deans.

Agricultural Experiment Station Staff

The Agricultural Experiment Station has as its essential functions to conduct research in agricultural and home economics, to administer certain regulatory statutes, and to publish the results of such work.

PAUL ROBERT MILLER, M.S.	Dean
THOMAS WHITFIELD DOWE, Ph.D.	Director
THURSTON MADISON ADAMS, Ph.D.	Agricultural Economist
WILLIAM RITCHIE ADAMS, JR., Ph.D.	Forester
EARL LEE ARNOLD, Ph.D.	Associate Agricultural Engineer
HENRY VERNON ATHERTON, Ph.D.	Assistant, Dairy Manufacturing
DONALD JAMES BALCH, M.S.	Assistant Animal Husbandman
HAROLD CAHILL BELYEA, M.F.	Forester
MALCOLM IRVING BEVINS, M.S.	Assistant Agricultural Economist
CHARLES HUGO BLASBERG, Ph. D.	Horticulturist
WESSON DUDLEY BOLTON, D.V.M., M.S.	Animal Pathologist
ALEC BRADFIELD, M.S.	Associate, Dairy Manufacturing
MARY MORRIS CLAYTON, Ph.B.	Assistant Biochemist
WINFIELD BOOTH DURRELL, D.V.M., M.S.	Associate Animal Pathologist
ELIZABETH MARY ELBERT, Ph.B.	Assistant Nutritionist
ROBERT FITZSIMMONS, M.S.	Assistant Dairy Husbandman
THEODORE ROSS FLANAGAN, Ph.D.	Assistant Agronomist
MURRAY WILBUR FOOTE, Ph.D.	Assistant Biochemist
ALEXANDER GERSHOY, Ph.D.	Geneticist
JOE RAY GINGRICH, Ph.D.	Assistant Agronomist
GLEN WAYNE GOSS, B.A.	Assistant Editor
DONALD CEDRIC HENDERSON, M.S.	Poultryman
RICHARD JOHN HOPP, M.S.	Associate Horticulturist
VERLE RANDALL HOUGHABOOM, M.S.	Agricultural Economist
DONALD BOYES JOHNSTONE, Ph.D.	Microbiologist

MRS. KARIN KRISTIANSSON, M.A.
 GEORGE BUTTERICK MacCOLLOM, Ph.D.
 BEVERLEY JONES MCKINLEY, B.S.
 JAMES WALLACE MARVIN, Ph.D.
 SUSAN BREWSTER MERROW, M.Ed.
 ALVIN REES MIDGLEY, Ph.D.
 WILLIAM FRANKLIN MILLER, JR., M.F.
 ROGER WALTER MURRAY, D.V.M.
 MARIANNE MUSE, M.S.
 JOHN ALVIN NEWLANDER, Ph.D.
 WILLIAM HUGH RIDDELL, Ph.D.
 EDWIN CALVIN SCHNEIDER, M.S.
 CRISTINA ELIZABETH SCHWEIKER, M.S.
 ROBERT ORVILLE SINCLAIR, M.S.
 ALBERT MATTHEWS SMITH, Ph.D.
 ROBERT TRAFTON SMITH, M.S.
 JOHN WALLACE SPAVEN, B.S.
 THOMAS SPROSTON, JR., Ph.D.
 GORDON GLENDON SYKES, M.S.
 FRED HERBERT TAYLOR, Ph.D.
 ENOCH HAROLD TOMPKINS, M.S.
 RAYMOND HERMAN TREMBLAY, Ph.D.
 VIRGINIA YAPP TROTTER, M.S.
 KENNETH EVERSON VARNEY, M.S.
 JAMES ROGER WADSWORTH, V.M.D., M.S.
 KATHLEEN BEAVINGTON WEBB, B.S.
 FRED CLARENCE WEBSTER, Ph.D.
 GLEN MEREDITH WOOD, Ph.D.

Assistant Editor
Assistant Entomologist
Research Assistant
Plant Physiologist
Assistant Nutritionist
Agronomist
Assistant Forester
Assistant Animal Pathologist
Home Economist
Associate Animal Husbandman
Animal and Dairy Husbandman
Agricultural Engineer
Assistant Biochemist
Agricultural Economist
Assistant Animal Husbandman
Assistant Poultryman
Editor
Plant Pathologist
Assistant Agricultural Economist
Plant Morphologist
Assistant Agricultural Economist
Agricultural Economist
Home Economist
Associate Agronomist
Extension Animal Pathologist
Associate Editor
Agricultural Economist
Associate Agronomist

Engineering Experiment Station Staff

EDD RUTHVEN McKEE, M.S., E.E.
 REGINALD V. MILBANK, M.S.
 ARTHUR R. ECKELS, M.S., D.Eng.
 JOHN O. OUTWATER, JR., M.A., Sc.D.

Director
Civil Engineer
Electrical Engineer
Mechanical Engineer

Agricultural Extension Service Staff

The Vermont Agricultural Extension Service is a cooperative undertaking of the State of Vermont, the College of Agriculture, the United States Department of Agriculture, and the several counties of the State. It has a State staff, with headquarters at the University, and a staff of county extension agents in each county. Its purpose is "to aid in diffusing among the people . . . useful and practical information on subjects relating to agriculture and home economics, and to encourage the application of the same." It works primarily with the rural people of the State, including both adults and children.

PAUL ROBERT MILLER, M.S.
 ROBERT POWERS DAVISON, M.Ed.
 EDMUND MORTON ROOT, B.S.
 THURSTON MADISON ADAMS, Ph.D.
 DONALD JAMES BALCH, M.S.
 CHARLES HUGO BLASBERG, Ph.D.
 WESSON DUDLEY BOLTON, D.V.M., M.S.
 CHARLES LYMAN CALAHAN, M.S.
 WARREN ALBERT DODGE, B.S.
 DWIGHT KIMBALL EDDY, B.S.

Dean
Director
Assistant County Agent Leader
Agricultural Economist
Assistant Animal Husbandman
Horticulturist
Animal Pathologist
Horticulturist
Dairyman
Assistant Agricultural Economist

ROBERT FITZSIMMONS, M.S.	Dairyman, Breeding
RAYMOND THOMAS FOULDS, JR., M.F.	Forester
GLENN WAYNE GOSS, B.S.	Assistant Editor
DONALD CEDRIC HENDERSON, M.S.	Poultryman
VERLE RANDALL HOUGHABOOM, M.S.	Agricultural Economist
MRS. KARIN KRISTIANSSON, M.A.	Assistant Editor
WILLIAM PATRICK LEAMY, B.S.	Assistant Dairyman
MARJORIE ELLINWOOD LUCE, B.S.	State Home Demonstration Leader
GEORGE BUTTERICK MacCOLLUM, Ph.D.	Entomologist
JOHN DOTY MERCHANT, B.S.	State 4-H Club Leader
LEONARD SMITH MERCIA, M.S.	Poultryman
MARY PAULINE ROWE, B.S.	Associate State 4-H Club Leader
ROBERT TRAFTON SMITH, M.S.	Assistant Poultryman
MRS. LOIS ALGER SOULE, B.S.	Clothing Specialist
JOHN WALLACE SPAVEN, B.S.	Editor
ANDREW TESSMANN, B.S.	Agricultural Engineer
WILLIAM HENRY DALTON VERNON, Ph.D.	Specialist in Human Relations
JAMES ROGER WADSWORTH, V.M.D., M.S.	Animal Pathologist
WINSTON ARTHUR WAY, M.S.	Agronomist
KATHLEEN BEAVINGTON WEBB, B.S.	Associate Editor
ANNA MARION WILSON, M.S.	Nutritionist

County Agricultural Agents

Addison County

Agricultural: LUCIEN DEMERS PAQUETTE, B.S.	Middlebury
JOHN FRANKLIN STEPHENSON, B.S. (Assistant)	Middlebury
ERDEN WELLS BAILEY, B.S. (Assistant)	Middlebury
Home Demonstration: MRS. LEONA WARREN THOMPSON, B.S.	Middlebury
Club: HARRIET ELLICE PROCTOR, B.S.	Middlebury

Bennington County

Agricultural: JOHN CALVIN PAGE, M.S.	Bennington
Home Demonstration: MRS. MARION STONE HARRIS, B.S.	Bennington
Club: JAMES ALBERT EDGERTON, B.S.	Bennington

Caledonia County

Agricultural: PHILIP KAIR GRIME, B.S.	St. Johnsbury
Home Demonstration: MRS. ALICE JOHNSON BLAIR, B.S.	St. Johnsbury
Club: MRS. MARGARET TOWER BECK, B.S.	St. Johnsbury

Chittenden County

Agricultural: ROBERT LACKIE CARLSON, B.S.	Essex Junction
KENNETH STEWART GIBSON, M.S. (Assistant)	Essex Junction
Home Demonstration: MRS. JENNIE SWETT SMITH, B.S.	Essex Junction
Club: FRANK WATSON WAY, B.S.	Essex Junction

Essex County

Agricultural: EARLE DRAKE CLARK, B.S.	Guildhall
Home Demonstration: ELNA ROSE SENECAL, B.S.	Guildhall

Franklin County

Agricultural: RALPH CALDWELL McWILLIAMS, B.S.	St. Albans
WALTER GENE ROCKWOOD, B.S. (Assistant)	St. Albans
Home Demonstration: RHODA ALETHA HYDE, A.M.	St. Albans
Club: LILLIAN ANDREWS, B.S.	St. Albans

Grand Isle County

Agricultural: ROBERT ELLIS WHITE, B.S.	North Hero
Club: MRS. LOIS HOGUE ARONSON, B.S.	North Hero

Lamoille County

<i>Agricultural:</i> SILAS HAMILTON JEWETT, B.S.	Morrisville
<i>Home Demonstration:</i> MRS. ELIZABETH EMMONS ROBINS, B.S.	Morrisville
<i>Club:</i> HUGH ALFRED DORAIN, JR., B.S.	Morrisville

Orange County

<i>Agricultural:</i> GORDON VOLNEY FARR, B.S.	Chelsea
<i>Home Demonstration:</i> MARY ANNA BURBANK, B.S.	Chelsea
<i>Club:</i> MRS. EDNA BARMBY JORDAN, B.S.	Chelsea

Orleans County

<i>Agricultural:</i> ROGER DAVIS WHITCOMB, B.S.	Newport
JOHN ROBERT PRICE, B.S. (Assistant)	Newport
<i>Home Demonstration:</i> MRS. MARION McIVER BUCKLAND, B.S.	Newport
<i>Club:</i> MRS. MARION SKINNER MORIARTY, B.S.	Newport

Rutland County

<i>Agricultural:</i> WILLIAM MICHAEL COREY, M.S.	Rutland
DAVID PAUL NEWTON, B.S. (Assistant)	Rutland
<i>Home Demonstration:</i> ANN LUCILLE BURROUGHS, M.A.	Rutland
<i>Club:</i> CHESLEY PECK HORTON, M.Ed.	Rutland

Washington County

<i>Agricultural:</i> GORDON EARL BUTLER, B.S.	Montpelier
<i>Home Demonstration:</i> MRS. HAZEL C. BROWN, M.S.	Montpelier
<i>Club:</i> ERMA JOSEPHINE HARD, B.S.	Montpelier

Windham County

<i>Agricultural:</i> RAYMOND IRVING PESTLE, JR., M.S.	Brattleboro
<i>Home Demonstration:</i> MRS. RUTH DENSMORE HERTZBERG, B.S.	Brattleboro
<i>Club:</i> GEORGE JOHN BROADWELL, B.S.	Brattleboro

Windsor County

<i>Agricultural:</i> WILLIAM WILLARD STONE, B.S.	Woodstock
JOYCE WILLIAM SUMNER, B.S. (Assistant)	Woodstock
<i>Home Demonstration:</i> MRS. JENNIE ARMSTRONG HALL, B.S.	Woodstock
<i>Club:</i> RUTH ALICE MORSE, B.S.	Woodstock

Related Services Staff

The Related Services Division renders various services in the fields of agriculture and home economics, such as inspection of feed, seeds, and fertilizer; analysis of soils, milk, and other agricultural products on request; diagnosis of diseases of plants, poultry, and other livestock; and conduct of short courses and educational conferences.

PAUL ROBERT MILLER, M.S.	Director
EDMUND MORTON ROOT, B.S.	Assistant to the Director and Farm Superintendent
WESSON DUDLEY BOLTON, D.V.M., M.S.	Animal Pathologist
ALEC BRADFIELD, M.S.	Associate, Dairy Manufacturing
HOLLIS BUCKLAND, B.S.	Seed Analyst
WINFIELD BOOTH DURRELL, D.V.M., M.S.	Associate Animal Pathologist
RICHARD JOHN HOPP, M.S.	Associate Horticulturist
LUCIEN DEMERS PAQUETTE, B.S.	Superintendent, Morgan Horse Farm
HARRY LEONARD SAWYER, JR., B.S.	Assistant Chemist
THOMAS SPROSTON, JR., Ph.D.	Plant Pathologist
JOHN FRANKLIN STEPHENSON, B.S.	Assistant Superintendent, Morgan Horse Farm
JAMES ROGER WADSWORTH, V.M.D., M.S.	Animal Pathologist
ROBERT THOMAS WETHERBEE, M.S.	Chemist

The Alumni Council

Organized in 1920, the objectives of the Alumni Council are to advance the interests and influence of the University; to strengthen the relations between the alumni and the University; to encourage sufficient class organization; to aid and assist in the establishment of alumni associations and promote their interest and effectiveness; to report from time to time to the Board of Trustees any facts and recommendations by the Council deemed material or for the interests of the University; to act as a medium that may make known the ideas of the alumni to the University, and the wishes of the University to the alumni; to keep in touch with the undergraduate activities; and to act in an advisory capacity through the Executive Committee and office of Alumni Council to such of the undergraduates as may desire to consult it in reference to their occupation after graduation.

The present Alumni Council is composed of one member from each of the fifty classes last graduated, one member from each active alumni club, and twenty members at large, one half of such members being women. Under an alumni reorganization plan approved at the June, 1957, meeting of the Council, membership in the Council which will go into office immediately following the June, 1958, Council meeting will be composed of: President and past president of a formally organized Alumni Association; one member elected from each of 17 geographic regions; two members each from associations of Class Chairmen, Class Secretaries, Class Agents, Alumni Club Presidents, Secretaries, Chairmen of Development Fund Committees and, in the case of Vermont Alumni Clubs, Chairmen of Legislative Committees; and approximately 20 members at large.

President: Neil Tolman, '26, 1625 Eye St., N.W., Washington, D. C.

Secretary: Isabelle Y. Gallup, 530 North St., Burlington, Vt.

Alumni Editor: Karl A. Andren, 55 Bilodeau Ct., Burlington, Vt.

Chairman of Finance Committee: David W. Webster, 31 Cliff St., Burlington, Vt.

Co-Chairmen of Commencement: Torrey C. Carpenter, '48, 237 Maple St., Burlington, Vt., and Dudley H. Davis, '43, 233 Crescent Rd., Burlington, Vt.

Chairman of Scholarship Committee: Orson W. Jay, '32, 441 S. Union St., Burlington, Vt.

Ex-Officio: William M. Lockwood, '27, 283 S. Prospect St., Burlington, Vt.; Lawrence F. Killick, '22, 34 Woodcrest Lane, Burlington, Vt.; Harold C. Collins, '28, 127 Mansfield Ave., Burlington, Vt.; and Chester B. Eaton, '34, 10 Harvard St., Rutland, Vt.

Athletic Council: John W. Goss, '10; Loren E. Palmer, '29; Robert P. Davison, '35 and William Gilbertson, '50.

Honorary Members:

President Carl W. Borgmann, 25 Colchester Ave., Burlington, Vt.

Dr. Clarence H. Beecher, '00, 151 Robinson Pkwy., Burlington, Vt.

Class Representatives

1909 William L. Gardner, 17 Overlake Park, Burlington, Vt.

1910 Albert Valentine Kieslich, 32 Village Green, Burlington, Vt.

1911 Ray R. Allen, South Hero, Vt.

1912 Albert L. Gutterson, 49 Cherry Hill, Springfield, Vt.

- 1913 George N. Harman, Rutland, Vt.
- 1914 Harold F. Johnson, 60 Hopkins Pl., Longmeadow, Mass.
- 1915 Gov. Joseph B. Johnson, 1 Hillcrest Rd., Springfield, Vt.
- 1916 Morris R. Wilcox, 152 Lyman Ave., Burlington, Vt.
- 1917 F. Raymond Churchill, Middlebury, Vt.
- 1918 George C. Stanley, 72 Fairmount St., Burlington, Vt.
- 1919 Herbert D. Pearl, 58 DeForest Rd., Burlington, Vt.
- 1920 Mrs. Elizabeth Howe Putney, 955 Shelburne Rd., Burlington, Vt.
- 1921 Leon B. Fuller, 7 Lincoln St., Springfield, Vt.
- 1922 Lawrence F. Killick, 34 Woodcrest Lane, Burlington, Vt.
- 1923 Wesley W. Smith, Jr., Middlebury, Vt.
- 1924 Daniel B. Dyer, St. Johnsbury, Vt.
- 1925 Leon D. Latham, Jr., 112 Bradley Rd., Burlington, Vt.
- 1926 Olney W. Hill, 539 St. Paul St., Burlington, Vt.
- 1927 N. Dean Rowe, Johnson, Vt.
- 1928 Charles H. Stevens, 144 Ledge Rd., Burlington, Vt.
- 1929 Constans M. Holden, 257 S. Union St., Burlington, Vt.
- 1930 Mrs. Evelyn Wright Court, 524 S. Willard St., Burlington, Vt.
- 1931 John A. Bradish, Williston, Vt.
- 1932 James W. Marvin, South Burlington, Vt.
- 1933 Mrs. C. Antoinette Hubbard Loudon, 17 Ledgemere St., Burlington, Vt.
- 1934 John C. Arnold, Jr., 125 Ledge Rd., Burlington, Vt.
- 1935 Donald C. Gregg, 199 Howard St., Burlington, Vt.
- 1936 Mrs. Gladys Sussdorf Keelty, Shelburne, Vt.
- 1937 Feno H. Truax, Box 22, Vergennes, Vt.
- 1938 Albert C. Spaulding, III, 27 Kingsland Ter., Burlington, Vt.
- 1939 Mrs. Martha Douglass Peterson, 142 N. Church St., Rutland, Vt.
- 1940
- 1941 Kenneth W. Johnson, University of Massachusetts, Amherst, Mass.
- 1942 Hazen F. Wood, 31 Mansfield Ave., Essex Junction, Vt.
- 1943 Paul N. Sutton, 16 Brewer Pkwy., Burlington, Vt.
- 1944 Robert R. Pond, Spear St., Burlington, Vt.
- 1945 Mrs. Harriet Pearl Grant, 59 Alder Lane, Burlington, Vt.
- 1946 Charles A. Plumley, Box 93, Rutland, Vt.
- 1947 Houghton D. Pearl, Box 41, South Boston 27, Mass.
- 1948 Edwin H. Blakeley, 48 Colchester Ave., Burlington, Vt.
- 1949 Mitchell J. Hunt, 3 S. Brandywine St., Westchester, Pa.
- 1950 Franklin M. Peabody, 19 Ogden St., Glens Falls, N. Y.
- 1951 Edward F. Streeter, Wilmington, Vt.
- 1952 Charles F. Black, Stowe, Vt.
- 1953 Rodney S. Belden, Hq. 100-2 Middlesex Rd., Waltham 54, Mass.
- 1954 Martha J. Edson, 82 Davis St., Rutland, Vt.
- 1955 Clinton H. Thompson, 3210 West 100th St., Cleveland, Ohio.
- 1956 Kenneth T. Savelle, Stowe, Vt.
- 1957 Edward N. Walker, 218 Marlborough Rd., Brooklyn 26, N. Y.

Members-at-Large

Term Expires 1958

- Dr. W. A. R. Chapin, '15, 40 Riverside Ter., Springfield, Mass.
- Mrs. Natalie Noyes Viets, '20, P. O. Box 7, Hyde Park, Vt.
- Mrs. Ethel Southwick Eastman, '09, Appletree Point, Burlington, Vt.
- Raymond A. Briggs, '18, Overlake Park, Burlington, Vt.

Term Expires 1959

- Alice Dean Parker, Randolph, Vt.
- Mrs. Laura P. Meredith, '17, Montpelier, Vt.
- Col. Dana G. McBride, '18, Burlington, Vt.
- Jesse E. Sunderland, '24, St. Albans, Vt.

Term Expires 1960

David W. Howe, '14, 385 S. Prospect St., Burlington, Vt.
 Mary Jean Simpson, '13, East Craftsbury, Vt.
 Mrs. Lilian Cohen Samuelson, '30, 165 Crescent Rd., Burlington, Vt.
 Robert L. Carlson, '42, 37 S. Summit St., Essex Junction, Vt.

Term Expires 1961

Lawrence H. Marvin, '28, Essex Junction, Vt.
 Thomas J. Mulcare, Jr., '09, 414 Mt. Auburn St., Cambridge, Mass.
 John J. Spasyk, '42, Stowe, Vt.
 Dr. Edward M. Winant, '36, 20 Park Ave., Bronxville, N. Y.

Term Expires 1962

Leon W. Dean, '15, Waterman Bldg., UVM.
 H. Marian Way, '23, 115 Summit St., Burlington, Vt.
 Clifton Stafford, '27, Stowe, Vt.
 Chas. H. Stevens, '29, 36 Hillcrest Rd., Burlington, Vt.

Club Representatives

Out-of-State

Boston, Mass.—Rodney S. Belden, 100-2 Middlesex Rd., Waltham 54, Mass.
 Buffalo (Western N. Y.)—Chas. F. Blair, '99, 942-44 Elliot Sq., Buffalo, N. Y.
 California—Mrs. Lilla M. Armstrong, 501 N. Citrus Ave., Los Angeles, Calif.
 Chicago, Ill.—Elias Lyman, Jr., 125 Ninth St., Wilmette, Ill.
 Cleveland, Ohio—
 Detroit, Mich.—Edward D. Trowbridge, '26, 1340 Bishop Rd., Grosse Pointe 30, Mich.
 Hartford, Conn., Alumnae—Mrs. Lucy Eaton Ellis, 263 Brimfield St., Wethersfield, Conn.
 Hartford, Conn., Alumni—Robert O. Fowler, 38 Riggs Ave., West Hartford, Conn.
 Maine Club—Joyce E. Byington, '45, 62 State St., Portland, Me.
 New York Alumni—Benjamin F. Butterfield, 751 Harding St., Westfield, N. J.
 New York Medical Alumni—Dr. Allen M. Margold, '25, 148 East Ave., Norwalk, Conn.
 New York Capital District—Dr. Arthur Q. Penta, '25, 1301 Union St., Schenectady 8, N. Y.
 Philadelphia, Pa.—Harry Dorion, 425 Sagamore Rd., Havertown, Pa.
 Pittsburgh, Pa.—Harold E. Hazen, '24, 435 Avenue D, Pittsburgh 21, Pa.
 Rochester, N. Y.—Arthur B. Corey, 155 Summit St., Rochester, N. Y.
 South Connecticut—Paul Walgren, Jr., '44, Route 2, Westville, Conn.
 South New Hampshire—Charles G. Tobias, '50, 15 Leighton St., Manchester, N. H.
 Springfield, Mass.—Raymond G. Kinsler, 409 Trafton Rd., Springfield, Mass.
 Washington, D. C.—Neil Tolman, '26, 1625 Eye St., N.W., Washington, D. C.
 Worcester, Mass.—G. Stanley Flagg, '32, 4 Robert Ave., Auburn, Mass.

Vermont

Addison County—Samuel W. Fishman, '34, Vergennes, Vt.
 Burlington Alumni—Albert C. Spaulding, Burlington, Vt.
 Burlington Alumnae—Mrs. Ursula Kimball Jordan, '20, 449 S. Prospect St., Burlington, Vt.
 U. V. M. Medical—Dr. Peter P. Lawlor, 65 Pine St., Burlington, Vt.
 Caledonia County—Jean True, Lyndon Center, Vt.
 Bennington County—Dr. John C. Armstrong, '25, North Bennington, Vt.
 Franklin and Grand Isle Counties—Jesse E. Sunderland, 16 Upper Welden St., St. Albans, Vt.
 Lamoille County—Edward C. Glysson, '22, Hyde Park, Vt.
 Orleans and Essex Counties—Dr. Deane F. Mosher, '41, c/o Newport Clinic, Newport, Vt.
 Rutland County—Raymond E. Holway, '25, Box 347, Rutland, Vt.
 Washington County (Orange, Williamstown and Washington)—Chester B. Eaton, 10 Harvard St., Rutland, Vt.
 Windham County—Mrs. Harriett P. Bolles, '33, 23 Williams Ter., Bellows Falls, Vt.
 Windsor County—Robert C. Bishop, '51, 135 Union St., Springfield, Vt.

Enrollment Statistics

Summary of Resident Enrollment

Fall Semester, 1957-58

The Undergraduate Colleges:	Men	Women	Total
Arts and Sciences	697	334	1031
Technology	760	80	840
Education and Nursing	67	423	490
Agriculture and Home Economics	222	136	358
Total	1746	973	2719
College of Medicine	162	14	176
Graduate College	73	27	100
Unclassified	56	25	81*
School of Dental Hygiene	.....	34	34
Total	2037	1073	3110

* 20 Unclassified students are enrolled in a full program.

Undergraduate Colleges by Classes:	Men	Women	Total
Class of 1958	292	170	462
Class of 1959	416	223	639
Class of 1960	479	266	745
Class of 1961	559	314	873
Total	1746	973	2719

	<i>In-State</i>			<i>Out-of-State</i>			<i>Total</i>
	<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>	
Arts and Sciences	276	132	408	421	202	623	1031
Technology	510	35	545	250	45	295	840
Education and Nursing	57	215	272	10	208	218	490
Agriculture and Home Economics	155	68	223	67	68	135	358
Graduate	47	12	59	26	15	41	100
Medicine	63	7	70	99	7	106	176
Unclassified	31	24	55	25	1	26	81
Dental Hygiene	.....	25	25	.....	9	9	34
Total	1139	518	1657	898	555	1453	3110

In addition to the above regularly enrolled students are the following:

Pre-Clinic Nurses 54
Grand Total—Fall Semester 1957—3164

	<i>Arts</i>	<i>Tech</i>	<i>EN</i>	<i>AG</i>	<i>In-State</i>	<i>Out-of-State</i>	<i>Total</i>
Class of 1958	167	118	99	78	226 (48.9%)	236 (51.1%)	462
Class of 1959	242	202	118	77	340 (53.2%)	299 (46.8%)	639
Class of 1960	301	236	120	88	388 (52.1%)	357 (47.9%)	745
Class of 1961	321	284	153	115	494 (56.7%)	379 (43.3%)	873
Total	1031	840	490	358	1448 (53.3%)	1271 (46.7%)	2719

Enrollment by Divisions

I. College of Arts and Sciences							
	In-State			Out-of-State			In & Out
	M	F	T	M	F	T	Total
Class of 1958	44	17	61	70	36	106	167
Class of 1959	59	36	95	112	35	147	242
Class of 1960	78	36	114	122	65	187	301
Class of 1961	95	43	138	117	66	183	321
Total	276	132	408	421	202	623	1031
By Curricula:				Men	Women		Total
General Liberal Arts				519	320		839
Pre-Dental				35	0		35
Pre-Medical				143	14		157
Total				697	334		1031
II. College of Technology							
	In-State			Out-of-State			In & Out
	M	F	T	M	F	T	Total
Class of 1958	55	3	58	55	5	60	118
Class of 1959	114	10	124	62	16	78	202
Class of 1960	147	13	160	65	11	76	236
Class of 1961	194	9	203	68	13	81	284
Total	510	35	545	250	45	295	840
By Curricula:				Men	Women		Total
Engineering—undecided				30	2		32
Civil Engineering				107	1		108
Electrical Engineering				142	1		143
Management Engineering				32	0		32
Mathematics				1	0		1
Mechanical Engineering				109	1		110
Commerce and Economics				316	23		339
Secretarial				0	3		3
Professional Chemistry				22	6		28
Medical Technology				1	43		44
Total				760	80		840
III. College of Education and Nursing							
	In-State			Out-of-State			In & Out
	M	F	T	M	F	T	Total
Class of 1958	14	47	61	3	35	38	99
Class of 1959	18	53	71	2	45	47	118
Class of 1960	14	48	62	2	56	58	120
Class of 1961	11	67	78	3	72	75	153
Total	57	215	272	10	208	218	490
By Curricula:				Men	Women		Total
Elementary				1	196		196
Junior High				18	15		33
Secondary				43	44		87
Business				3	20		23
Music				2	6		8
Nursing				0	132		132
Total				67	413		480

IV. College of Agriculture and Home Economics

	<i>In-State</i>			<i>Out-of-State</i>			<i>In & Out</i>
	<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>	<i>Total</i>
Class of 1958	36	10	46	15	17	32	78
Class of 1959	36	14	50	13	14	27	77
Class of 1960	32	20	52	19	17	36	88
Class of 1961	51	24	75	20	20	40	115
Total	155	68	223	67	68	135	358

By Curricula:

	<i>Men</i>	<i>Women</i>	<i>Total</i>
Agriculture (General)	160	6	166
Agricultural Engineering	24	0	24
Pre-Forestry	26	1	27
Pre-Veterinary	12	1	13
Home Economics	0	128	128
Total	222	136	358

V. Graduate College

	<i>Men</i>	<i>Women</i>	<i>Total</i>
In-State	47	12	59
Out-of-State	26	15	41
Total	73	27	100

VI. College of Medicine

	<i>In-State</i>			<i>Out-of-State</i>			<i>In & Out</i>
	<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>	<i>Total</i>
Class of 1958	17	1	18	19	1	20	38
Class of 1959	12	2	14	24	2	26	40
Class of 1960	18	0	18	27	3	30	48
Class of 1961	16	4	20	29	1	30	50
Total	63	7	70	99	7	106	176

VII. Unclassified Division (Special Students)

	<i>In-State</i>			<i>Out-of-State</i>			<i>In & Out</i>
	<i>M</i>	<i>F</i>	<i>T</i>	<i>M</i>	<i>F</i>	<i>T</i>	<i>Total</i>
Arts and Sciences	17	11	28	15	1	16	44
Technology	13	3	16	8	0	8	24
Agriculture and Home Ec	0	0	0	1	0	1	1
Education and Nursing	0	10	10	1	0	1	11
Medicine	1	0	1	0	0	0	1
Total	31	24	55	25	1	26	81*

* 20 Unclassified students are enrolled in a full program.

VIII. School of Dental Hygiene

	<i>In-State</i>	<i>Out-of-State</i>	<i>Total</i>
Second Year	11	3	14
First Year	14	6	20
Total	25	9	34

Degrees and Prizes

Commencement—Sunday, June 16, 1957

School of Dental Hygiene

Abiah Ann Briggs, Grand Isle
Sally Ann Carr, Cheshire, Conn.
Rona Mary Cox, Rutland
Beverly Cameron Hicks, Chatham, N. J.
Joanne Elizabeth Kelty, Winooski

Mary Lee Morrill, Morrisville
Patricia Ann Philpitt, Miami, Fla.
Anne Marie Quinn, Poultney
Lynette Leigh Scott, Burlington
Joyce Mae Whitty, East Middlebury

College of Education and Nursing

Bachelor of Science in Nursing

Sally Ann Davis Adams, Nashua, N. H.
†Jean Nixeen Anderson, Portland, Me.
†Betty Phillips Blodgett, Burlington
†Sigrid Albrecht Burns, Springfield, Pa.
Caroline Jane Casey, Maplewood, N. J.
Marcia Helen Cooke, White Plains, N. Y.
†Martha Anne Doane, South Burlington
†Jessica Doe, Wilbraham, Mass.
†Susan Jane Duerfeldt, Patuxant River, Md.
Mary Ann Ernest, Amsterdam, N. Y.
Carolyn Knapp Foster, East Rockaway, N. Y.
†Lois Madlyn Franco, Barre
†Jean Janet Fregosi, Proctor
†Muriel Haydee Garcia, Hicksville, N. Y.
Janice Marilyn Gilpin, Northfield
†Dorothy Ann Green, Stockbridge
†Helen May Haltermann, Tenaflly, N. J.
†Joan Pilling Howe, Bloomfield, N. J.
†Frances Sue Howes, Wilbraham, Mass.
Virginia Ann Ireland, Burlington
†Margaret Ruth Killary, Burlington
†Elizabeth Dinsmoor King, Glen Ridge, N. J.
†Joan Marie Kirchheim, Burlington
Joyce Marie LaClair, South Shaftsbury
†Claudia Josephine Marcou, Exeter, N. H.

Anne Carolyn McColl, Delmar, N. Y.
†Caroline Louise McGrath, Albany, N. Y.
Mary Phyllis Mehuron, Rutland
†Helen Catherine Merlino, Providence, R. I.
†Mary Loretta Nash, Bennington
Eleanor Christine O'Connell, Syosset, N. Y.
Helen Louise O'Connor, Beverly, Mass.
Sandra Overmire, Yonkers, N. Y.
†Mary Louise Palmer, East Middlebury
†Mary Parsons, Ipswich, Mass.
Marilyn Royal Rossier, Lansdowne, Pa.
Romaine Frances Ruggles, Bend, Ore.
Elinor Tucker Scotland, Fitchburg, Mass.
Carol Victoria Stenberg, Hartford, Conn.
Gerritje Ann Ten Eyck, Altamont, N. Y.
†Rachel Irene Thompson, South Ryegate
†Irma Ruth Waldman, Brookline, Mass.
†Judith Amasa Walker, Washington, Conn.
Janice Mae Ward, Burlington
†Dolores Ethel Wettach, Putney
†Carolyn Smith Wilcox, South Londonderry
†Carole Louise Williams, Pelham Manor, N. Y.
Mary Brown Williams, Charlotte
Mary Ann Louise Wondolowski, Middletown, N. Y.

Bachelor of Science in Business Education

Katherine Oram Burkhardt, Benson
Brian Foster King, Island Pond

Audrey Lucille Spooner, Barre

Bachelor of Science in Music Education

Patricia Cheney Trepanier, Rutland

Bachelor of Science in Education

Mary Ann Aitchison, Barre
Florence Alexander, West Rutland
Beverly Olive Barker, Post Mills
Ruth Emma Beals, Westminster Station
†Edwin Beck, Jr., Burlington

Janet Cady Bevins, Brookfield
Marilyn Maidene Bolton, Cabot
Donna Davison Borofsky, Brattleboro
Janice Elsie Braman, Norwich
Cornelia Ann Brown, Morrisville

† As of February 23, 1957.

*Myron Ben Brown, Burlington
 Sylvia May Canales, Barre
 Susan Deans Connelly, White Plains, N. Y.
 Marilyn Agnes Cooper, West Orange, N. J.
 Judith Ann Corcoran, Rutland
 Elizabeth Maude Curtis, Winchester, Mass.
 George Allan Dacey, St. Albans
 Gardena Davison, Hanover, N. H.
 Theodore Wesley Day, Williamstown
 Silvio Laerte D'Orazio, Burlington
 Jean Mae Dunbar, Swanton
 Melvin Lewis Dunphy, Waterbury
 Lynn Suzanne Eger, Bala-Cynwyd, Pa.
 Rodney Carroll Facteau, Wilder
 Martha Anne Farrell, Rutland
 Marion Elizabeth Fassett, Alburg
 Jessica Schildhaus Fischer, Washington, D. C.
 Madeleine Marie-Paule Fournier, Burlington
 Marion Swan Franklin, Jericho
 Anne Estella Griffiths, Oriente, Cuba
 Carol Blackwell Harris, Garden City Park,
 N. Y.
 *Lillian Jay Hier, Pittsford
 Eve Maria Holm, Great Neck, N. Y.
 Dorothy Herrlinger Holt, White Plains,
 N. Y.
 Patricia Pauline Horvath, Proctor
 *Helena Purinton Jackman, Essex Junction
 Jean Helen Johnson, Burlington

Richard Arnold Lafreniere, East Barre
 Anne Marie Lockwood, Larchmont, N. Y.
 Jean Frances Mackenzie, Burlington
 Jean Rebecca Magoon, Colchester
 Lea Mae Manor, Jericho
 Lois Mabel Mansur, Weston
 Ellen Patricia Markel, Great Neck, N. Y.
 Stephen Lawrence Maroney, Island Pond
 Mary Gertrude McGinn, St. Albans Bay
 Linda Ann McKerley, Rutland
 Alan Curtis McLam, Burlington
 Phyllis Jean McMahon, St. Albans
 Nancy Bush Ocorr, Hingham, Mass.
 Rebecca June Orvis, Bristol
 Lorraine Watt Potter, Burlington
 Rhoda Beverly Rosenberg, Burlington
 Margaret Elizabeth Rotanelli, Pelham Manor,
 N. Y.
 Gordon Charles Smith, Lyndonville
 Phyllis Elsie Smith, Orwell
 Sheila Ruth Smith, *cum laude*, Burlington
 Ellen Louise Stone, South Burlington
 Mary Ann Tabor, Hinesburg
 Marion Ward Terwilliger, Cleveland, Ohio
 *Janet Marie Van Horn, Bound Brook, N. J.
 Laura Alice Walsh, Bellows Falls
 Sandra Anne Waugh, Scotia, N. Y.
 *Coralyn Whiting, Winchester, Mass.

College of Technology

Bachelor of Science in Chemistry

Norman Flynn Bruce, Rutland
 Mary Lou Gover, Burlington
 Philip Leo Levine, Gardner, Mass.

Helen Kathryn McKuskie, Nashua, N. H.
 Elizabeth Katherine Osborn, Belmar, N. J.

Bachelor of Science in Commerce and Economics

Aubrey Walter Akin, Newport
 Margaret Katherine Arnold, Bay Shore, N. Y.
 Ann Carolyn Barton, Brant Lake, N. Y.
 James Barry Baughman, Wellesley Hills, Mass.
 William Andrews Beebe, Burlington
 Stanley Borofsky, Brattleboro
 Howard Emerson Bouchard, Jr., Burlington
 Frederick Smith Briggs, North Troy
 Arthur William Burkhardt, Jr., Rutherford,
 N. J.
 John Clement Cardwell, Proctorsville
 Sarah Jean Carter, Woodstock
 Michael Travis Chumblee, Rutherford, N. J.
 †Russell Walter Colvin, North Bennington
 Allan William Corcoran, White Plains, N. Y.
 Henry Andrew Dahlgren, Jr., Rutland
 Jerome Thomas Duffy, Tuckahoe, N. Y.
 John Ryan Duffy, Bryn Mawr, Pa.
 David Hover Dunbar, Stratford, Conn.
 Mario Anthony Ellero, Williamstown

Janice Elise Fayen, New Rochelle, N. Y.
 Katherine Laura Fernald, Verona, N. J.
 Carole Jean Foss, Latham, N. Y.
 John Kurt Geisler, North Plainfield, N. J.
 Robert Jay Ginsburg, Brooklyn, N. Y.
 Bertram Goodman, Brooklyn, N. Y.
 Donald Charles Greenhouse, Mt. Vernon,
 N. Y.
 Peter Greenwald, Bronx, N. Y.
 Ronald Grossman, Great Neck, N. Y.
 George Franklin Isaacson, Jr., Tenafly, N. J.
 Stuart Edward Jacobs, White River Junction
 William Francis Keeshan, Jr., Stamford, Conn.
 †James Andrew Kendall, Newport
 James Arnold Laraway, Morrisville
 Richard Henry Martin, Bellows Falls
 †Merwin Bertram Meridy, Hartford, Conn.
 *John Henry O'Connor, Jr., Warrensburg,
 N. Y.
 Barbara Grace Papae, Brooklyn, N. Y.

* As of October 20, 1956.

† As of February 23, 1957.

Ronald Lindsay Peaker, Naugatuck, Conn.
 David Lee Pierce, Elmira, N. Y.
 Lewis Stephen Reische, Woodmere, N. Y.
 Fred Joseph Rex, Little Falls, N. Y.
 Gerald Jarvis Rice, Windsor
 Gary Parker Richardson, Springfield
 Herbert George Russell, Jr., Rutland
 Vernon Leo Sawyer, Burlington
 Stanley John Shannon, Ticonderoga, N. Y.
 Robert Murray Shapiro, Springfield, Mass.

Donald Barton Shoob, Lynbrook, N. Y.
 James Allen Soper, Salem, Mass.
 *Howard Douglas Spalding, Mt. Vernon, N. Y.
 Robert Arthur Spence, Springfield
 Robert Clinton Stafford, Rye, N. Y.
 Jacquelyn Isabella Strub, Philadelphia, Pa.
 Thomas Colwell Thomas, Jr., Delray, Fla.
 Robert James Wolfe, New Haven, Conn.
 Jacob Zwynenburg, Dumont, N. J.

Bachelor of Science in Civil Engineering

Robert Frank Dawson, Essex Junction
 *Murray John Guy, St. Johnsbury
 Francis Harte Madden, Wilmington, N. Y.
 Joseph Arthur McCullough, Stratford, Conn.

Robert Arthur McEwing, Essex Junction
 Robert Austin Ouellette, West Halifax
 Alan Hale Smalley, Johnson

Bachelor of Science in Electrical Engineering

John Basil Cameron, Jr., Burlington
 Frederick Seymour Cramer, Tenaflly, N. J.
 Ernest Arthur Granger, Winooski
 Ronald Arthur Hill, Burlington
 Oliver Joseph LeBlanc, Jr., Williamstown
 Robert Earl Newcomb, Brattleboro

Edward Renwick Nugent, Baldwin, N. Y.
 Stephen Clay Plumb, Brattleboro
 Robert C. Royce, Townshend
 Hugh William Sullivan, Jr., Bellows Falls
 Roger Alan Van Kirk, Trenton, N. J.

Bachelor of Science in Management Engineering

Kenneth Henry Brunjes, New York, N. Y.
 Robert Nelson Fuller, Jr., Springfield, Mass.

James Harland Thompson, Saratoga Springs,
 N. Y.

Bachelor of Science in Mechanical Engineering

George Rudolph Charron, Lyndonville
 Richard Milo Davis, Essex Junction
 Glenn Hancock Dewey, *cum laude*, Wards-
 boro
 †Victor Francis Dzewaltowski, Springfield
 †Richard Gordon Everett, Norway, Me.
 Armand Simeon Garand, Montpelier
 John Art Gay, Brandon
 Ralph Kent Hanks, Jr., Waterbury
 †Leonard Raymond Horton, Hadley, Mass.
 Donald Clyde Howland, Belmont

Warren Ronald Kirkendall, Naugatuck, Conn.
 Neal Charles Kopp, Forest Hills, N. Y.
 Albert William Lindholm, Jr., Upper Mont-
 clair, N. J.
 Francis Charles Pane, Jr., Danbury, Conn.
 Raymond Emil Plankey, Vergennes
 Louis George Plouffe, St. Johnsbury
 Ernest Gray Sartelle, Barre
 Robert Henry Saunders, St. Albans

Bachelor of Science in Medical Technology

Nancy Chapin, Pleasantville, N. Y.
 Nancy Jean Gifford, Bayshore, N. Y.

Mary Teresa Walasewicz, Cavendish
 Dorothy Jane Ward, Wethersfield, Conn.

College of Agriculture and Home Economics

Bachelor of Science in Agriculture

Ronald Lewis Albrecht, Londonderry
 Alan Henry Anderson, Castleton
 Wendall Keith Austin, Moretown

Charles Herbert Bailey, Newbury
 †Frank Loriston Barker, Post Mills
 Hugh Raymond Bemis, Clyde, N. Y.

* As of October 20, 1956.

† As of February 23, 1957.

Elwood Dale Bickford, Newport
 Roland Arthur Burroughs, Newbury
 Laurant Peter Cadieux, North Troy
 Richard Bradley Chapman, West Rutland
 Clifford George Cole, North Troy
 Philip William Cook, *cum laude*, Underhill
 †Reuben Hall Cooley, Lake Worth, Fla.
 Robert Barrie Corshen, Brooklyn, N. Y.
 *Joseph Costello, Byram, Conn.
 David Curwen, Ridgewood, N. J.
 Ralph Roland DesLaurier, South Burlington
 †Bruce Kemp Dunbar, Swanton
 Elizabeth Jean Farrington, Montpelier
 Thomas Patrick Fitzgerald, Winooski
 Paul Haskell Goldstein, Brooklyn, N. Y.
 Everett Wayne Harris, Wolcott
 George William Hartke, Maplewood, N. J.
 Theodore Richard Horelick, Providence, R. I.
 †George Richard Howe, Brattleboro
 *Alun Jones, Middlebury
 Donald Albert Klein, Stratford, Conn.
 William George Lee, Highland Falls, N. Y.
 Lauren Hubbard Long, Burlington
 Donald Sanders Luce, East Calais

Bruce Karl MacAlister, Montpelier
 Peter Burnam Manning, Bethel
 Charles Roblee Mason, Pawlet
 *Peter John Maynard, Wilmington
 Dare Martin McCuin, Richford
 Norman Harry McIntyre, Castleton
 Peter Lee Minotti, Burlington
 Robert Norman Mullen, Richford
 Edward Walter Newell, Woodbury, Conn.
 Lloyd Judson Porter, Port Washington, N. Y.
 John Kenneth Prushko, St. Albans
 †Carlos Enrique Reyes A., Barranquilla, Col., S. A.
 Berkeley Rogerson Richardson, Richford
 Donald Keith Sherwood, Massena, N. Y.
 Nelson Hosking Slack, Burlington
 Martin Peter Sorensen, Brooklyn, N. Y.
 Raymond John Tafrate, Burlington
 Laurence Samson Taylor, Spencer, Mass.
 Richard James Urie, Craftsbury Common
 John Jay Vanderwende, Jr., Rutherford, N. J.
 David Urban Walker, Morrisville
 William Henry White, Jr., Middlebury
 Roger Myron Wilder, Middlebury

Bachelor of Science in Agricultural Engineering

Gerald Edward Baril, Lyndonville
 †Gerald Allan Beebe, Cutchogue, N. Y.
 Stuart Ayers Hadwen, Bennington

Philip Leland Manley, Milton
 George Harry Rowell, West Glover
 Norman Bruce White, Bradford

Bachelor of Science in Home Economics

Lois Hogue Aronson, New Rochelle, N. Y.
 Carolyn Mae Barton, Glen Ridge, N. J.
 Carleen Greta Bates, Newport
 Shirley Ann Campbell, Barre
 Susan Crane, Loudonville, N. Y.
 Gladys Jane Gregory, Essex Junction
 Anne Harman, White Plains, N. Y.
 Joy Frances Hayes, Brattleboro
 †Louise Haug Ireland, Nashua, N. H.
 Beverly Ann Jones, Verbank, N. Y.
 Lois Nancy Jones, Waitsfield
 Judith Lamson, Randolph
 Phyllis Irene Lewis, Jamaica, N. Y.
 Claire E. Lissner, Little Neck, N. Y.

Helen-Mary Lull, Shelburne
 Joan Viola Meier, Lynbrook, N. Y.
 Nancy Jean Moul, Buffalo, N. Y.
 Marlene Phyllis Patrick, Jamaica
 Mary Jane Pollard, North Ferrisburg
 Shirley Rowe Rogers, Johnson
 Ruth Lillian Sherlock, Montpelier
 June Squiers Sherwin, Arlington
 Cornelia Anne Suhr, Greenville, Dela.
 Sally Ann Tobin, Underhill
 Myra Jane Van Deusen, South Royalton
 Katherine Warren, Chatham, N. J.
 Jane Bohlinger Yago, Trenton, N. J.

College of Arts and Sciences

Bachelor of Arts

*William Arnold Ackerman, Jackson Heights, N. Y.
 Arthur Kearns Adamo, Flushing, N. Y.
 Francis Hunter Adamo, Flushing, N. Y.
 Jean Marian Alexander, Irasburg
 Constance Verna Allen, Castine, Me.
 Simon Daniel Allen, Burlington

Peter Francis Allendorf, Walpole, Mass.
 Gail MacIntosh Angotti, South Orange, N. J.
 Max George Ansbacher, Burlington
 *Ronald East Apman, Cooperstown, N. Y.
 †Arthur Crane Arms, Springfield
 Joan Armstrong, Harrison, N. Y.
 Peter Mark Armstrong, Westfield, Mass.

* As of October 20, 1956.

† As of February 23, 1957.

- Janice Christie Bailey, Hanover, N. H.
 Geraldine Feyer Baker, Chatham, N. J.
 Roberta Lois Baker, Flushing, N. Y.
 Dolores June Barea, Pittsfield, Mass.
 Richard Sachs Barry, Milwaukee, Wis.
 Madeleine Joyce Baumgarten, New York, N. Y.
- *Randall Gordon Bell, Burlington
 Mark Bernstein, Brooklyn, N. Y.
 Edwin Leon Bevins, North Bennington
 Donald Skinner Bicknell, McIndoes Falls
 Lawrence Morton Birnbaum, Brooklyn, N. Y.
- †William Broderick Blakeman, Bethel
 Elizabeth Ann Bowen, Springfield
 Richard Frederic Bregstein, Brooklyn, N. Y.
 William Merle Bresnahan, Gilman
 Aimee Juliann Brown, Alexandria, Va.
 Herbert Michael Brown, Long Beach, N. Y.
 Robert Keith Brown, Enosburg Falls
 John All Burgess, Old Bennington
 James Douglas Burke, Rutland
 Henry Scott Carson, Wethersfield, Conn.
 Ada Pratt Chase, Newfane
 Kenneth Putnam Clayton, Bennington
 Sandra Lee Collison, Delmar, N. Y.
 Denis King Copeland, New York, N. Y.
 Mary Jean Towne Cronin, Morrisville
 Raymond Peter Daley, Lowell, Mass.
 Martin Alan Danoff, Brooklyn, N. Y.
 Lorna W. Dean, Burlington
 Inese Bebris deMontigny, Bennington
 Richard Allen Dennis, Summit, N. J.
 Victor Henry Densmore, Hardwick
 Henrietta Lee Donnally, *magna cum laude*,
 West Newbury
- *Thomas James Egan, Castleton
 Barry Alexander Eitelberg, Brooklyn, N. Y.
 Donald Thomas Evans, Rutland
 Catherine Mary Evanson, Swanton
- †Jean Burch Falls, *cum laude*, Burlington
 William Henry Farwell, Rutland
 Marcia Fink, Pittsfield, Mass.
 Hal Richard Fishbein, Bronx, N. Y.
 Judith Anne Fletcher, Ithaca, N. Y.
 Janice Susanne Frazier, Meriden, Conn.
- †Edward Earle Frost, Jr., Utica, N. Y.
 John Francis Galascione, Montclair, N. J.
 Morris Joseph George, Burlington
 Gordon St. Jean Gilman, Ludlow
 Valerie Joan Gluskin, Beverly Hills, Calif.
 Arnold Harvey Goldman, Albany, N. Y.
 Susan Goldstein, Great Neck, N. Y.
- †Gerald Groden, Belmont, Mass.
- *Joan Friedman Gruener, Burlington
 Donald Lee Guilmette, Rochester
 Hussein Mousa Hamdan, Ramallah, Jordan
 Paul Peter Harasimowicz, Gardner, Mass.
 Nancy Lou Hawkins, New Rochelle, N. Y.
- Charles Vaughan Hicks, Granville, N. Y.
 William Stephen Infeld, New York, N. Y.
 Suzanne Irons, Burlington
 Teresa Caroline Jacob, Philadelphia, Pa.
 William Orson Jay, Burlington
 William Eugene Johnson, Burlington
 James Lewis Kantor, Beechhurst, N. Y.
 Jerome Paul Kaplan, Scranton, Pa.
 Martin Philip Kaufman, Brooklyn, N. Y.
- †David Alden Kendall, Old Greenwich, Conn.
 John Orville Kenney, St. Johnsbury
 Robert Bruce Kezer, Glen Ridge, N. J.
 Donald Allan Kidder, Lansdowne, Pa.
 Joan Gertrude Kienast, River Edge, N. J.
 Anne Merlyn King, Fort Edward, N. Y.
 Franklin Corbinianus Kraft, Schenectady, N. Y.
- Arnold Lachs, Brooklyn, N. Y.
 Panayiotis Lallo, Fort Lee, N. J.
 Marvin Bernard Levy, Roslyn Heights, N. Y.
 Dorothy Brace Lilley, Burlington
 Arthur Lewis Lömker, East Orange, N. J.
 John Baldwin Lounsbury, Vergennes
 John Murdock MacAulay, Granitville
 Alan Blair Mackay, Burlington
 Harry Mancoll, West Hartford, Conn.
 Wilbur Salisbury Mann, Barre
 John Bingham Marvin, Montpelier
 Ervin Charles Mason, Milton
 Eleanor Darwin May, Greensboro, N. C.
 Patricia Anne May, Barton
 Arleen Alice Mayer, Rutland
- *Francis Corcoran McCrane, Jr., Clifton, N. J.
 John Charles Mesch, East Orange, N. J.
 Stephen Hopkins Millard, Jr., Albany, N. Y.
 Charles Bernard Mintzer, Burlington
 Bert Sampson Moffatt, Burlington
 F. Eleanor Morrisette, Schenectady, N. Y.
- *John Allison Michael Morse, New London, Conn.
 Willard Jackson Morse, Jr., Waterford, Conn.
 Stanley Nelson, Brooklyn, N. Y.
 Marvin Alfred Nierenberg, *cum laude*,
 Jamaica, N. Y.
- Jean Barbara Obreiter, Glen Ridge, N. J.
 Leo O'Brien, Jr., South Burlington
 Carroll Alfred Ockert, Shelburne
 Charles William Paine, Bristol
- *Linda Mae Pattison, Moriah Center, N. Y.
 Michael Ransome Peattie, Burlington
- †Basil Rufus Percy, Newport
 Peter Perkins, Rutland
 Jules Monte Perley, Brooklyn, N. Y.
 Mary Lou Ann Politi, Barre
 Alan Resnick, Brooklyn, N. Y.
 Luther William Reynolds, Jr., Hartford, Conn.

* As of October 20, 1956.

† As of February 23, 1957.

- Robert Clark Richardson, Loudonville, N. Y.
 Stanley Wallace Rimland, Stamford, Conn.
 Richard Lee Rosen, Brockton, Mass.
 Max Rothman, Burlington
 Dorothy Dandridge Rothmann, Chatham, N. Y.
 Frances Carolyn Russell, Windsor
 Charles Robert Sager, Bronx, N. Y.
 Stanley Richard Sakowitz, Bridgeport, Conn.
 Miriam Rachael Samuelson, Burlington
 William John Saris, Peabody, Mass.
 Stanley A. Scheiner, Bronx, N. Y.
 Gayla Hope Schildhaus, Washington, D. C.
 Stephen Miller Schulz, White Plains, N. Y.
 *Richard Hoxie Severens, Saxtons River
 Norma Edith Shapiro, Valley Stream, N. Y.
 Joseph Michael Siegel, Hillside, N. J.
 Walter Henry Siegel, Forest Hills, N. Y.
 *Frederick Stevens Skelton, Winchendon, Mass.
 Paul Donald Small, Brooklyn, N. Y.
 Chester Martin Smith, Jr., Springfield
 Anthony Adam Socinski, West Rutland
 Beverly Jean Sorensen, Hartford, Conn.
 Ruth Eisenstein Soybel, Burlington
 Sally Ann Stalker, Winooksi
 John Waller Stetson, Rutland
 George Wilson Stevenson, Brownsville
 Marvin Herman Stockel, Millburn, N. J.
 Albert Howard Stone, St. Albans
 Madeline Andrea Stutz, Brooklyn, N. Y.
 Judith Madelyn Summerton, Vergennes
 *Elliott A. Taft, Brooklyn, N. Y.
 Arnold Elliott Taras, Staten Island, N. Y.
 Edwin Nils Teich, Great Neck, N. Y.
 Earl Harold Tesch, Trumbull, Conn.
 Leonard Henry Thornton, Schoharie, N. Y.
 *Louise Elaine Tracy, Fayetteville, N. Y.
 Harry Rodricque Traystman, New London, Conn.
 Margaret Urquhart, West Newbury
 Jane Bennett Van Dusen, Glens Falls, N. Y.
 Peter Coerte Van Voorhees, Caldwell, N. Y.
 Geraldine Wainshilbaum, Rockland, Mass.
 Susan Patricia Wakefield, Burlington
 Edward Nathan Walker, Brooklyn, N. Y.
 Norman George Wallace, Springfield
 Jason Arthur Wark, Barre
 Ann MacGregor Whitney, Orange, Mass.
 Carol Jerome Wicks, Canton, N. Y.
 LeRoy Williams, Jr., Montclair, N. J.
 Barry Michael Winters, New Haven, Conn.
 Melvyn Hyman Wolk, Waterbury, Conn.
 Alan Yassky, Nyack, N. Y.
 *Jean Mason Yassky, Williamsville, N. Y.

Bachelor of Science

- William Hotchkiss Doolittle, Cheshire, Conn.
 *Kenneth Alton Murdock, Jr., Bradford
 Artemas John Wise Packard, Hanover, N. H.
 †Donald Matthew Werner, Binghamton, N. Y.

Graduate College

Master of Education

- *Priscilla Fletcher Bagley, B.S. (Boston University), 1940, Granville
 *Helen Ivalou Beatty, B.S. (Potsdam State Teachers), 1953, Gouverneur, N. Y.
 *Merle Wesson Crown, B.S. (UVM), 1943, Vergennes
 *Graham Randall Easson, B.A. (American International), 1951, Springfield, Mass.
 *Thomas Ronald Ingram, B.A. (UVM), 1949, St. Johnsbury
 *Richard Emery Ross, A.B. (Middlebury), 1936, Chittenden
 *Mary King Skapski, B.S. (California), 1945, Milton
 Thesis: Individualized Instruction in the Ungraded Primary School and its Effect upon the Achievement of Second and Third Grade Children of Different Ability Levels.
 †William Horace Towne, B.A. (UVM), 1950, Montpelier
 Anthony Trono, B.S. (UVM), 1950, Middlebury
 *Leonard John Tyl, A.B. (St. Michael's), 1950, Marshfield

Master of Arts in Teaching

- Samuel William John, B.A. (Rutgers), 1940, St. Johnsbury
 Marianne Mitiguy, B.Mus. (Manhattanville), 1952, Burlington
 *Arthur Horace Scott, A.B. (Middlebury), 1949, Northfield
 * As of October 20, 1956.
 † As of February 23, 1957.

Master of Science

Agricultural Biochemistry

Rudolph Frank Kouba, B.S. (Ohio State), 1955, Burlington
Thesis: An Unknown Auxin-activated Compound.

Agricultural Economics

Willard Leonard Bickford, B.S. (UVM), 1955, Shelburne
Thesis: Ten Years of Farm Planning.

Melvin Don Wrisley, B.S. (UVM), 1953, Shelburne
Thesis: Roughage on Vermont Dairy Farms.

Animal and Dairy Husbandry

Sidney Earl Barnard, B.S. (UVM), 1955, Middlebury
Thesis: The Flavor of Milk Under Loose Housing Conditions.

*William Patrick Leamy, B.S. (UVM), 1942, Burlington
Thesis: A Study of the Relative Efficiency of Milk Production During the Past Twenty Years.

Bacteriology

James Patrick Barrett, B.A. (Buffalo), 1955, South Burlington
Thesis: An Attempt to Produce Immunologic Tolerance in Experimental Animals to Human Cancerous Tissue.

Anne Evelyn Coghlan, B.S. (Simmons), 1948, Milton, Mass.
Thesis: A Study of the Open Plate Complement Fixation Test for Poliomyelitis Comparison of Antigen Materials.

Botany

Oscar Raymond Atkinson, Jr., B.S. (Maine), 1954, Buckfield, Me.
Thesis: A Study of the Diameter Growth Rate of Sapling Sugar Maple (*Acer Saccharum* Marsh).

Daniel Cone Pease, Jr., B.A. (UVM), 1955, Meriden, Conn.
Thesis: Thermoperiods and the Production of Apothecial Initials in the Fungus *Sclerotinia Trifoliorum* Erik.

Chemistry

John Armand Eberwein, B.S. (UVM), 1955, Pittsfield, Mass.
Thesis: The Preparation and Thermal Decomposition of some 2,4,6-trialkyl-4-alkyl-phenoxy cyclohexa-2,5-dienones.

*Edwin Stewart English, B.A. (UVM), 1955, St. Albans.
Thesis: Phenoxy Radical Equilibria.

Michael Harry Gianni, B.A. (UVM), 1951, Waterbury, Conn.
Thesis: Syntheses of Some Substituted Symmetrical Triazines.

Willard Branham Howe, B.S. (UVM), 1955, Durham, N. H.
Thesis: A Study of Three Platinum (II) Complexes.

James Martin Kelliher, Jr., B.S. (St. Michael's), 1951, Winooski
Thesis: Infrared Studies of the Hydrogen Bonding of Equilibrium Mixtures of Methanol and Diethyl Ether.

*Bruce George Somers, B.S. (UVM), 1955, St. Johnsbury
Thesis: Molecular Association in Methanol Vapor.

* As of October 20, 1956.

† As of February 23, 1957.

Zoology

†Adelle Virtue Mitchell, B.A. (Mary Baldwin), 1954, Columbus, Ga.

Thesis: Studies on the Activity, Size, and Parasites of Young Pumpkinseed Sunfish (*Lepomis Gibbosus* L.).

Master of Arts

Economics

André Hurtgen, C.E. (Louvain), 1953, Brussels, Belgium

Thesis: The Elasticity of Demand: a study on the validity and usefulness of the concept of price-elasticity of demand as a tool for economic research.

French

†Jeanne Ruth Monty, A.B. (Montreal), 1954, Burlington

Thesis: La notion de l'équipe dans les oeuvres d'Antoine de Saint-Exupéry.

History

John Willard Shy, B.S. (U. S. Military Academy), 1952, Jericho Center

Thesis: James Abercromby and the Campaign of 1758.

College of Medicine

Doctors of Medicine

William Edward Allard, Jr., B.S., *cum laude*, Rutland

Dudley Moore Baker, B.A., Brattleboro

Herbert Patterson Beam, A.B., Burlington

Sanford Bloomberg, B.A., A.M., Burlington

Edwin Merriman Brown, B.S., Barton

Mrs. Patricia Hoilman Brown, A.B., Barton

James Donald Cherry, B.S., Chatham, N. J.

Larry Coletti, A.B., M.S., *cum laude*, Norwich, Conn.

John Edward Crisp, A.B., Nashua, N. H.

Alfred Dorn, B.A., Brooklyn, N. Y.

Jack Edwin Farnham, B.A., Burlington

Daniel George Fischer, B.A., Hamden, Conn.

John Clifton Fulmer, Rye, N. Y.

Barton Jerome Gershen, B.S., *cum laude*, Burlington

Archie Sidney Golden, B.A., New Milford, Conn.

Jerrold Gilbert Goldman, B.A., M.S., Newark, N. J.

Leonard William Halling, B.A., Aurora, Ill.

Howard Smith Irons, B.A., Bennington

Philip Bernard Kaplan, B.A., Bridgeport, Conn.

Leonard Kreisler, B.S., White Plains, N. Y.

Denton Edward MacCarty, B.S., Burlington

Bruce Russell MacKay, A.B., *cum laude*, Sheldon Springs

Peter Rolf Manes, B.A., Bennington

Mark Richard Margiotta, B.A., *cum laude*, Waterbury, Conn.

Richard Noah Matus, B.S., North Conway, N. H.

Thomas Craig McBride, B.A., Chicago, Ill.

Walter Francis Miner, A.B., Akron, Ohio

Theodore Leon Munsat, A.B., Rutland

William Andrew O'Rourke, Jr., B.S., Rutland

† As of February 23, 1957.

Stuart Oster, B.A., Brooklyn, N. Y.
 Carl Lee Perry, B.A., Burlington
 Francis Lee Perry, B.S., Rutland
 Edward Joseph Quinlan, B.A., Bristol, Conn.
 Frank Joseph Schmetz, Jr., A.B., Merchantville, N. J.
 John Alfred Schremly, Jr., A.B., Rutland
 Joel Nathan Shepard, B.S., West New York, N. J.
 William Meyer Soybel, A.B., Hamden, Conn.
 Arnold Clifford Taye, B.A., B.S., D.D.S., Merrifield, Minn.
 Hollis Norman Truax, B.A., Burlington
 Donald Nichols Zehl, B.A., M.S., New Haven, Conn.

Degrees Honoris Causa

Thomas Stephen Brown, Burlington
 Alfred Comstock Clapp, Montclair, N. J.
 Norman Cousins, New York City
 Deane Chandler Davis, Montpelier
 Arthur Lowell Deering, Orono, Me.
 John Dillenberger, Cambridge, Mass.
 Rudolph Serkin, Guilford
 Joseph Blaine Johnson, Springfield

Doctor of Science
 Doctor of Laws
 Doctor of Humane Letters
 Doctor of Laws
 Doctor of Laws
 Doctor of Divinity
 Doctor of Music
 Doctor of Laws

Prizes

The George H. Walker Dairy Prize—Nelson Hosking Slack, '57
 The Seymour Horticultural Prize—David Curwen, '57
 Burpee Award in Horticulture—Hugh Raymond Bemis, '57
 The German Literary Prize—Inese Bebris de Montigny, '57
 The Fred Donald Carpenter German Award—Joseph Valentine Cresci, '59
 Kirby Flower Smith Latin Prize—Alice Barbara Brechin, '60
 The Edward Page Butler Debating Prizes—*First*: Sandra Jean Winterberger, '58; *Tie for Second*: Judith Anne Kearns, '60 and Ellen Bennett Friedman, '60
 The Robert Ashton Lawrence and George Edwin Lawrence Debating Prizes—*First*: Marvin Bernard Levy, '57; *Second*: Max George Ansbacher, '57
 The Robert Ashton Lawrence Debating Prizes—*First*: John All Burgess, '57; *Second*: Leonard Henry Thornton, '57; *Third*: Sandra Jean Winterberger, '58; *Fourth*: Max George Ansbacher, '57; *Fifth*: Marvin Bernard Levy, '57
 The Hannah G. Solomon Prize—Marlene Phyllis Patrick, '57
 The Goldberg Prize—John Baldwin Lounsbury, '57
 The B'Nai B'Rith Prize—Suzanne Irons, '57
 The Institute of Radio Engineers Award—Robert Earl Newcomb, '57
 The A. Atwater Kent Prize—Ronald Arthur Hill, '57
 The American Institute of Electrical Engineers Award—Oliver Joseph LeBlanc, '57
 The Edmund F. Little Cup—Glenn Hancock Dewey, '57
 Phelps Prize—Alan Hale Smalley, '57
 The Fred T. Ridder Medal—Marvin Alfred Nierenberg, '57
 Carbee Medical Prize—Herbert Patterson Beam, A.B.
 Woodbury Prize in Medicine—Mark Richard Margiotta, B.A.
 Lamb Foundation Essay Prizes—*First*: Herbert Patterson Beam, A.B.; *Second*: Sanford Bloomberg, A.M.; *Third*: Mark Richard Margiotta, B.A.
 The Vermont Bankers Association Prize—Frederick Smith Briggs, '57
 Wall Street Journal Student Achievement Award—Donald Charles Greenhouse, '57
 Alpha Lambda Delta Award—Anne Carolyn McColl, '57
 The Mary Jean Simpson Cup—Florence Alexander, '57
 The Mary B. Sullivan Memorial Scholarship—Edith Louise Lawson, '58

Loan Funds, Scholarships, and Prizes

Loan Funds

AMERICAN AGRICULTURALIST RESEARCH FOUNDATION For juniors and seniors in home economics.

CATHERINE ARMSTRONG LOAN FUND For women only.

REV. STEPHEN G. BARNES To provide loans or gifts for needy students to attend religious conferences.

JOHN H. AND MARY A. BLODGETT Established in 1938 by bequest of Mary A. Blodgett of Bellows Falls, preference to be given to graduates of the Kurn Hattin and Warner Memorial Homes and to residents of Rockingham.

MATTHEW HENRY BUCKHAM Any needy girl.

DR. MOSES DYER CARBEE, '73 Established by Mrs. May D. Carbee in memory of her husband for students of the College of Medicine.

ROBERT M. CARTER Agriculture and Home Economic Students.

ELIZABETH CHAPMAN Established by bequest in 1950.

THE CONSOLIDATED FUND Composed of the following: the Class of 1916 Fund, the Class of 1923 Fund, the Class of 1924 Fund, the Class of 1925 Fund, the Emergency Loan Fund, the Julia I. Bates Fund, the Student Loan Fund, the B. F. Taylor Fund, the New York Alumni Fund of November, 1927, the Edmund Seymour Fund, the Kidder Loan Fund, the Lydia M. Blood Loan Fund, the Charles H. Bayley Fund, the Charles S. and Etta M. Kehoe Fund, the Sealand W. Landon Fund, the Annette Fiske Mereness Fund, the Pearl E. and Iddie F. Stone Loan Fund, the Student Emergency Loan Fund, and the Emily and Thomas Telfer Fund.

LEONARD PERLEY DICKINSON For students in engineering, preference to be given to those in electrical engineering.

FACULTY EMERGENCY LOAN FUND For faculty members only.

ASA FISKE Established for women students by Annette Fiske Mereness in memory of her father.

ELLIS EDWIN FOSTER LOAN FUND Preference to graduates of Peoples Academy of Morrisville, Vt.

MARY GRAVES Established for women students by Annette Fiske Mereness in memory of her mother.

JOSEPH LAWRENCE HILLS Established by friends of Dean Hills, who completed fifty years of service to the University in 1937.

STEPHEN DWIGHT AND LIDA MASON HODGE For women students in the College of Arts and Sciences.

CORNELIUS A. JEDEVINE Established by Allen E. Jeudevine as a memorial to his son to aid Vermont men in obtaining a liberal education.

KELLOGG FOUNDATION LOAN FUND Medical students.

LADIES OF THE FACULTY For women students. Not more than fifty dollars is loaned to any one student.

DR. JOSEPH E. LUMBARD Established in 1946 by the gift of Mr. J. Edward Lumbard, Jr., for students in the College of Medicine.

MEDICAL STUDENT LOAN FUND Established in 1933 by Medical College alumni for students in the College of Medicine.

NEW ENGLAND SOCIETY IN THE CITY OF NEW YORK LOAN FUND Temporary loans.

CHARLES D. AND CARRIE D. ORDWAY Bequeathed by Charles D. Ordway in 1933, for Vermont students.

MARY MAUD PATRICK Established by Epsilon Sigma as a memorial to Mary Maud Patrick for students in elementary education.

PHI BETA KAPPA Available to members of the senior class; preference being shown to members of the society.

ELIZABETH D. AND CLIFFORD R. PROCTOR Established in 1953 for students in the College of Medicine.

RIXFORD MANUFACTURING COMPANY For students from Highgate.

HENRY BIGELOW SHAW, '96 Established in 1938 by Mrs. Willard Pope in memory of her brother, Henry Bigelow Shaw of the Class of 1896, for young men who have been graduated from the University and who wish to study at Harvard University Law School.

MARY A. SHAW AND FANNY E. SHAW Established by Mrs. Willard Pope, daughter of Mary A. Shaw, for women students.

F. H. AND GRACE M. SHEPARDSON For deserving students, subject to such regulations as the Board of Trustees shall prescribe.

HORACE E. STEVENS, '70 Established in 1926 by his relatives for students in engineering.

TERRILL-HOLBROOK For women students, preference being shown to those in Home Economics.

THE WOMEN'S STUDENT HEALTH COUNCIL FUND For women designated by the Dean of Women and the Chairman of the Department of Physical Education for Women, under special regulations as to interest and repayment.

ELLEN E. H. WOODRUFF For personal emergencies for any girl with limit of \$50.00 and approved by the Dean of Women.

Scholarships

LIZZIE P. ALLEN Founded in 1900 by Lizzie P. Allen, a descendant of Ira Allen, founder of the University.

THE ALUMNI MEMORIAL SCHOLARSHIPS Appropriated annually by the Executive Committee of the Alumni Council to provide scholarships for male students. These awards are made upon the recommendation of a committee of the Alumni Council designated for that purpose. Each scholarship is named in memory of an alumnus.

FRANKLIN BALDWIN Established in 1915 by bequest of Mr. Baldwin for students from Putney.

REV. LUCIUS E. BARNARD (1853) Established by bequest in 1903.

REUBEN CLARK BENTON (1854) Established by bequest for students from Waterford and Lunenburg, Vermont, or from Minneapolis, Minnesota.

ADA S. BLAIR Established by bequest in 1926.

ELIZABETH F. BRIGHAM Established by bequest in 1910; preference to be given to students from Brigham Academy.

MARCIA P. BROWNE Established by bequest for women students.

EMORY N. BURRITT Established by bequest for women students

SARAH L. BURRITT Established by bequest for women students.

EZRA HOYT BYINGTON Founded in 1905 in memory of Mr. Byington by Mrs. Louisa J. Byington for students from Hinesburg, or students bearing the name of Byington, Boynton, Hoyt, or Wortman, or in some way related to these families.

MOSES D. CARBEE, '73 Established by a bequest from Mrs. May D. Carbee in memory of her husband; available for medical students.

DR. WALTER CARPENTER Established by bequest; preference to be given to sons of clergymen and physicians.

DEAN JOSEPH E. CARRIGAN Established in 1957 by the people of Vermont to honor Dean Carrigan. The income from the fund is used to provide scholarships for Vermont boys and girls attending the College of Agriculture and Home Economics.

ELIZABETH CHAPMAN Established by bequest in 1950.

CLASS OF 1861 Endowed and made available in 1891.

CLASS OF 1881 Endowed in 1937 by William H. Rice.

JOHN H. CONVERSE, '61 Established in 1882.

LIZZIE S. CONVERSE Founded by bequest of Sarah Elizabeth Converse for students of classics.

CHARLES M. COX Income from this trust fund provides a scholarship of \$300 for a student in agriculture, preferably to one majoring in dairy or poultry husbandry, on the basis of need, character, and scholarship.

CRAFTSBURY Founded in 1900 for relatives of Mr. and Mrs. Nathan S. Hill, or residents of Craftsbury or Isle La Motte.

PHILIP HENRY CREER Founded by Ex-Gov. Redfield Proctor for students from Proctor.

ESSO 4-H Awarded each year by the Esso Standard Oil Company of New Jersey to an incoming freshman in the College of Agriculture on the basis of need, character, and scholastic ability, plus at least three years of 4-H work. If satisfactory grades are maintained, two hundred dollars per year will be paid the recipient for the succeeding three years.

JOHN W. AND JOHN SEELEY ESTABROOK Established by bequest in 1956; for students in the College of Medicine from Rutland County, preference being given to students from Brandon.

ROLLO J. FRANCISCO Established by bequest in 1951.

DR. EDWARD EVERETT HAWES Established by bequest in 1946; available for medical students.

ALBERT T. HENDERSON Established in 1945 by a bequest from William J. Henderson in memory of his son.

FRANCIS WHEPLEY HICKOK, '71 Founded in 1902 by Mrs. Julia F. Hickok, widow of James W. Hickok, '37, in memory of their son.

DR. CHARLES H. HOOD Given by the Charles H. Hood Dairy Foundation. Six of \$250 each awarded to upperclass students studying milk production.

LOUISA H. HOWARD Founded in 1882; available for men.

CHARLES A. HOYT, '58 Established by bequest in 1904.

ISLE LAMOTTE Founded in 1884 by Nathan S. Hill; for students from Isle LaMotte or from Craftsbury.

SARAH B. JACOBS Founded in 1882; available for graduates of Brigham Academy only.

EDITH BLANCHE KIDDER Established by Joseph W. Kidder for students in the College of Medicine; preference to be given to legal residents of Barre.

ROBERT J. KIMBALL Founded in 1900 for students from Randolph. The Trustees of Randolph High School may make nominations for this scholarship.

CELINDA A. B. LILLEY Founded in 1880 for women students.

LYNDON INSTITUTE Endowed by George E. P. Smith, '97; awarded annually to a graduate of Lyndon Institute nominated by the faculty of that school.

CHARLES MUNSON MARSH Established by bequest in 1893 for students from Woodstock by Charles P. Marsh in memory of his son.

CHARLES P. MARSH Established by bequest in 1893; for men and women from Windsor County.

EDWIN WRIGHT MARSH, '72 Founded in 1883 by Charles P. Marsh, '39 in memory of his son; for students from the town of Weathersfield or from Windsor County.

MARGARET PATTERSON McDANIELS Established in 1941 by a bequest of George M. McDaniels in memory of his mother; preference to be given to applicants from the towns of Craftsbury and Greensboro.

DANIEL PITKIN MINER Established by bequest in 1943; for native-born students, not over twenty-five years of age.

MORETOWN AND MIDDLESEX Founded by the Rev. E. C. Bass, '59.

JUSTIN S. MORRILL Founded in 1900 by Senator Justin S. Morrill; for students from Strafford.

NATIONAL SCHOLARSHIPS Ten national scholarships will be awarded in the fall of 1958 to out-of-state students who have outstanding scholastic ability, good personal qualifications, and need of financial assistance. The student must rank in the upper one-fifth of his

graduating class. Scores on the Scholastic Aptitude Test of the C. E. E. B. will also be used in determining the applicant's academic promise. The scholarships will vary up to a maximum of full tuition, depending upon the need. These scholarships may be renewed each year provided the student maintains an average of 80 or higher, and the financial need continues.

JOHN ORDRONAU Founded in 1909; for students in the Academic and Medical Colleges.

PARKER Founded in 1880 by Rev. Charles C. Parker, D.D., '41, in memory of himself and his son, Charles Edmund Parker, '67.

ARTHUR W. AND LOUISE S. PERKINS Established in their memory in 1947 by their son and daughters. The income provides aid for students of high character and reasonably good scholarship who are graduates of a secondary school in Rutland. School authorities in Rutland are to be consulted regarding the qualifications of candidates who are not already enrolled in the University.

MINNIE A. PICKERING Established in 1938 by gift in memory of her daughter.

RALSTON PURINA \$500 awarded at the beginning of the senior year to a student majoring in an area related to animal nutrition on the basis of need, scholarship, leadership, and character.

CHARLES W. RICH, '36 Founded in 1883 for students in the College of Arts and Sciences.

SEARS-ROEBUCK FOUNDATION Three of \$200 for men in agriculture and two of \$100 for women in home economics are awarded annually to incoming freshmen; one of \$250 for a sophomore in agriculture. Awarded on the basis of need, scholarship, and farm origin.

WILLIAM G. SHAW, '49 Originally founded in 1892 by bequest of one thousand dollars and recently increased by his daughter, Mrs. Willard Pope; available for men students.

CHARLES D. SIAS Established by bequest in 1943; available for men.

SAMUEL SIDNEY SMITH Founded in 1896 by bequest of Mrs. Elisa Smith in memory of her husband.

SOLDIERS' Founded in 1913 by a group of Civil War Veterans for students who are descendants of soldiers in the Civil War.

SOPHIA STOW Endowed in 1937 by bequest of George L. Stow, '73, in memory of his mother; for students of classical languages.

DR. H. C. TINKHAM Established by bequest in 1956; for students in the College of Medicine.

DR. DANIEL WASHBURN Founded in 1853 for young men; preference to be given to those studying for the ministry.

JOHN AND MARY WATERMAN Endowed in 1923 by Charles W. Waterman, '85, in memory of his father and mother; for residents of Waitsfield or Denver, Colorado.

WESTFORD Founded in 1882 by Luke P. Poland; available first to students from the town of Westford.

HATTIE LAURA WETHERBY WESTON Established by bequest in 1936.

JOHN A. S. WHITE Established by bequest; for students from Washington County or from Vermont.

JAMES B. WILBUR The University of Vermont Trust Fund, amounting to over one million dollars, was established by James B. Wilbur as an endowment for scholarships for Vermont students who are in need of assistance to undertake college work and who have earned entrance or college records that indicate extraordinary scholastic ability.

CLAYTON J. WRIGHT Established by bequest; available first for students from the town of Williston.

Prizes

THE AIR FORCE ASSOCIATION AWARD, a silver medal, is awarded to the advanced class cadet who has the highest over-all average in the Air Force ROTC.

THE ALPHA LAMBDA DELTA AWARD, a book, is presented by the National Council to the senior member who has the highest average for four years. Certificates are awarded to the senior members who have maintained an average of 90 or more for four years.

THE ALPHA ZETA PROFICIENCY AWARD is given to that agricultural student who in his freshman year is deemed the most proficient in scholarship, extracurricular activities, and self-support.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERING AWARD, a certificate, is awarded annually to the student member who has been the most outstanding in the activities within the branch for the academic year.

THE AMERICAN LEGION MEDAL, presented by Burlington Post No. 2, is awarded annually to the Air ROTC cadet who has demonstrated the most outstanding qualities of character and leadership.

THE AMERICAN LEGION TROPHY, a silver shield, presented by Burlington Post, No. 2, is annually awarded to the ROTC company which is the most proficient in attendance, neatness, set-up and drill.

THE ARNOLD AIR SOCIETY AWARD, a silver medal, is awarded annually by the honorary society of the Air Force ROTC, named in honor of General H. H. Arnold, to the most proficient cadet of the freshman class.

THE ATHLETIC COUNCIL MANAGERIAL PRIZE of twenty-five dollars is awarded annually to that senior sports manager who has shown the greatest proficiency.

THE WARREN R. AND MILDRED L. AUSTIN PRIZE, to the student ascertained and found to have shown the most interest and endeavor in knowledge of international organization for the principles and purposes of the United Nations.

THE BENEDICT ESSAY PRIZE was established by Robert Dewey Benedict of the Class of 1848, to be awarded annually to the member of the senior class who presents the best essay on the subject of international arbitration.

THE BENNETT ESSAY PRIZE, endowed by Philo Sherman Bennett, provides an annual prize for the best essay discussing the principles of free government.

BORDEN AGRICULTURAL PRIZE is awarded annually to that eligible student in the College of Agriculture who on entering his senior year has the highest average grade of all eligible students in all preceding college work. Students who have included in their courses of study two or more dairy subjects are eligible for the award.

THE B'NAI B'RITH PRIZE of \$25 is given annually by the Joseph Frank Lodge of Burlington to that student who has done most to encourage interfaith cooperation and activities.

THE BURPEE AWARD IN HORTICULTURE, an annual award of \$100 donated by the W. Atlee Burpee Company, is made on the basis of scholarship, practical experience, and interest in flower and vegetable growing.

THE BUTLER DEBATING PRIZES were endowed by Edward Page Butler, '70, for the promotion of extemporaneous debate. From the income of this fund of \$1200 three prizes may be awarded annually to the three women students who have shown the greatest ability in debate.

THE CARBEE MEDICAL PRIZE was established by Mrs. May D. Carbee in memory of her husband, Moses Dyer Carbee, M.D., 1873. The income from the fund is given annually to the student in the College of Medicine who shows the greatest proficiency in the subject of obstetrics.

THE CARPENTER GERMAN PRIZE is awarded in memory of Professor Fred D. Carpenter to that student in the intermediate German course who has demonstrated the greatest degree of progress and improvement.

THE CARPENTER TENNIS AWARD, presented in appreciation of Professor Fred D. Carpenter's service as coach of the tennis team and as a member of the Athletic Council, is awarded annually to that member of the varsity tennis squad who has demonstrated the greatest degree of progress in tennis proficiency during the season.

THE CONVERSE PRIZES IN COMMERCE AND ECONOMICS were established by John Heman Converse, '61, by gift of a fund of \$1000, the income from which may be used in whole or in part for prizes.

THE ALAN COUTT'S SCHOLARSHIP TROPHY, presented in honor of the former Dean of Men, is awarded annually to that men's dormitory which attains the highest scholastic average for the previous year.

THE CRAIG TROPHY, donated by Major M. E. Craig in honor of the 1936-37 Rifle Team, has each year engraved upon it the name of the man making the highest cumulative score throughout the year in the principal matches in which the rifle team competes.

THE EMERSON PRIZE IN HISTORY, offered annually in memory of Samuel Franklin Emerson, Professor of History for forty-two years, is awarded to an undergraduate for the best original essay on any topic chosen from any field of history.

THE GERMAN LITERARY PRIZE is awarded annually by the Goethe Lodge of Burlington for general excellence in German.

THE GOLDBERG PRIZE, a gold watch, is awarded annually by Phi Chapter of Phi Sigma Delta Fraternity to that senior man who, in addition to achieving an over-all average of at least 80, plans to continue with graduate work, who has excelled in intramural athletics, and who has contributed to the University as a sincere and respected individual, exemplifying the character and personality of Bailey Herman Goldberg, '50.

THE HOWARD PRIZES were provided by a bequest of \$1250 from Mrs. Hannah T. Howard, the income of which is awarded in prizes to students in the College of Arts and Sciences for excellence in the work of the freshman year.

THE ELWIN LEROY INGALLS PRIZE is provided from a fund established in 1934 to honor Elwin Leroy Ingalls, '96, who had then completed twenty years of continuous service as State 4-H Club Leader. It is awarded annually to a University student of outstanding merit as shown in character, 4-H Club record, and scholastic attainment in college.

THE JACOBSEN TROPHY was donated in 1951 by Colonel Earl H. Jacobsen, the first Professor of Air Science and Tactics assigned to the University. Upon it is engraved each year the name of the cadet in the Air Force ROTC making the highest cumulative smallbore rifle marksmanship score throughout the year.

THE A. ATWATER KENT PRIZE IN ELECTRICAL ENGINEERING is provided by the income of a fund of \$5,000 and is awarded annually to the most improved senior in electrical engineering. The names of the winners are placed on a tablet which is located in the Waterman Building.

THE KIDDER MEDAL is provided by the income of a fund of \$400, established in memory of Dr. F. T. Kidder, '80, a trustee of the University. The specially engraved gold medal is awarded to the male student in the senior class ranking first in character, leadership, and scholarship.

LAWRENCE DEBATING PRIZES were established by Edwin Winship Lawrence, '01. The first group of three prizes is established in memory of his brother, Robert Ashton Lawrence, '99, and is offered annually to students who exhibit the greatest proficiency in debate. A \$10,000 fund provides for these prizes.

The second group of prizes, established in memory of his brother, Robert Ashton Lawrence, '99, and his father, George Edwin Lawrence (Middlebury College, '67), is awarded to the four students participating in a joint debate between representatives of the University and Middlebury College who, in the opinion of the judges chosen, show the greatest proficiency in this debate.

THE EDMUND F. LITTLE CUP is provided by the income from a fund established by Arlington P. Little, '01. It is awarded annually for meritorious work in mechanic arts.

THE LOYAL LEGION MEDAL is presented annually by the Vermont Commandery of the Military Order of the Loyal Legion to the most proficient junior cadet of the Reserve Officers' Training Corps.

THE MORTAR BOARD SCHOLARSHIP CUP is awarded annually to the women's dormitory attaining the highest scholarship average for the first semester.

THE NU SIGMA NU AWARDS are given annually in the College of Medicine to the outstanding students in the freshman and junior classes.

THE OMICRON NU CUP is awarded to the student in home economics who attains the highest scholastic average during her freshman year.

THE OUTING CLUB SKI TROPHY is awarded annually to the member of the varsity ski team who has shown outstanding leadership, character, and athletic attainment in skiing during the past year.

THE PHELPS PRIZE IN CIVIL ENGINEERING, derived from a fund of \$900, was endowed in memory of Edward Haight Phelps, '72, by his father, Edward J. Phelps. The prize is awarded annually to an outstanding senior in civil engineering.

THE INSTITUTE OF RADIO ENGINEERING AWARD, a certificate and a voucher for one year's dues as a member after graduation, is awarded annually to the student member who has shown the greatest professional development, accomplishment, and interest in the activities of the student branch.

THE COLONEL WADSWORTH RAMSEY-SMITH TROPHY AND PRIZE, in the amount of ten dollars, are awarded annually to the outstanding senior cadet of the Reserve Officers Training Corps. The name of the senior is inscribed on the trophy, a saber, which is maintained by the Military Department. This award is presented by Mrs. Ramsey-Smith, in honor of her husband.

THE SEMANS TROPHY, presented by the local chapter of Tau Epsilon Phi Fraternity in memory of Henry Semans, '24, is awarded annually to a senior for outstanding qualities of leadership, loyalty and service to the University, active participation in athletics, and winning the respect and regard of his fellow students.

THE SEYMOUR HORTICULTURAL FUND of \$2500 was given by William W. Seymour in memory of his father, Henry E. Seymour, 1835. The income from the fund is used in part for a prize for that senior who has done the best work in original horticultural research.

THE MARY JEAN SIMPSON CUP is awarded annually to that senior woman who best exemplifies the qualities of character, service, and constructive influence which Miss Simpson strove to set before the women students during her term of office as Dean of Women.

THE KIRBY FLOWER SMITH LATIN PRIZE is derived from a \$3000 fund established by his wife as a memorial to Kirby Flower Smith, '84. An award is made annually to the student having the highest standing in second year college Latin.

THE HANNAH G. SOLOMON PRIZE is awarded by the Burlington Section of the National Council of Jewish Women to the senior woman who has exhibited in the highest degree the qualities of scholarship, leadership, and service.

THE SONS OF THE AMERICAN REVOLUTION MEDALS are presented annually by the Vermont Society, Sons of the American Revolution, one to the member of each class in the Reserve Officers Training Corps who is outstanding in character, conduct, leadership, and in theoretical and practical knowledge of the year's course.

THE STROH TROPHY is awarded annually in honor of Charles Stroh, '34, to the member of the baseball team who achieves the highest total of runs-batted-in during scheduled games each year.

THE SUNDERLAND MEMORIAL TROPHY is awarded annually to that senior man who has best exemplified those qualities of character, leadership, and persistence in overcoming obstacles, which were outstanding traits in the life of Russell O. Sunderland, '38. Each recipient's name is engraved on the permanent trophy, and the Boulder Society makes a suitable personal award.

THE THOMAS TROPHY is awarded annually to that senior student in agriculture who most closely exemplifies the character of John M. Thomas.

THE VERMONT BANKERS ASSOCIATION PRIZE, a \$100 Government Savings Bond is awarded annually to the best senior student from Vermont in the field of finance.

THE VETERANS OF FOREIGN WARS MEDALS AND PLAQUES, presented by the Howard Plant Post 782, are awarded annually to the freshman cadet of the Army ROTC unit who demonstrates the highest proficiency in leadership, drill, and military science and to the cadet commander of the best Air ROTC drill squad. Their names are inscribed upon the plaques, which are maintained by the military departments.

THE GEORGE H. WALKER DAIRY PRIZE is derived from a fund of \$2000, donated by George H. Walker, one of the founders of the Walker-Gordon Milk Company. It is awarded annually to an outstanding senior in dairy studies.

THE WALL STREET JOURNAL AWARD, a silver medal and a one year subscription to the *Wall Street Journal*, is awarded annually to the member of the senior class who shows the greatest proficiency in the field of finance.

THE WASSON ATHLETIC PRIZE is derived from an endowment of \$250, given by Mrs. Pearl Randall Wasson in memory of her husband, Dr. Watson L. Wasson, '01. The income provides a prize for the member of the senior class who has maintained the highest standard of academic scholarship and athletic attainment.

WIRTHMORE 4-H. One hundred dollars is awarded annually to a freshman 4-H member who has done outstanding work in 4-H dairy or dairy feeding projects.

THE WOODBURY MEDICAL PRIZES are derived from a fund of \$1000 created by Mrs. Pauline S. Woodbury in memory of her husband, Dr. Urban A. Woodbury, '59. The first prize is awarded annually to the student who has shown the greatest proficiency in the clinical subjects in his senior year. The second prize is awarded to that member of the sophomore class who has received the highest standing of the class in all subjects of the freshman and sophomore years.

General Index

- Academic Calender, 208
- Academic Discipline, 28
- Accounting, 64, 102
- Accreditation, iv
- Administrative Personnel, 163
- Admission, 20
 - Graduate College, 72
 - Medical College, 79
- Adult Education, 82
- Advanced Standing, 23
- Agricultural Biochemistry, 84
- Agricultural Economics, 35, 85
- Agricultural Education, 35, 86
- Agricultural Engineering, 39, 112
- Agricultural Experiment Station Staff, 178
- Agricultural Extension Service Staff, 179
- Agriculture and Home Economics, College of, 33
- Agronomy, 36, 87
- Aid, Student, 27
- Air Science, 88
- Alumni Council, 182
- Animal and Dairy Husbandry, 89
- Animal and Dairy Production, 37
- Animal Pathology, 90
- Art, 91
- Artists Series, 10
- Arts and Sciences, College of, 46
- Assistants, List of, 173
- Assistants, Graduate, 78, 175
- Associates, List of, 173
- Athletics, 16
- Audio-Visual Services, 83
- Auditing Courses, 30

- Banking, 64
- Banking Facilities, 26
- Bills, Payment of, 26
- Biochemistry, Agricultural, 84
- Board Charges, 25
- Board of Trustees, 162
- Botany, 37, 92
- Breakage Charges, 25
- Buildings, 5
- Business Administration, 64
- Business Education, 58, 110

- Calendar, 208
- Campus and Buildings, 5
- Chemistry, 62, 93
- Civil Engineering, 67, 114
- Class Organization, 19
- Classical Languages, 97
- Clothing and Textiles, 45, 134

- College Entrance Examinations, 22
- Colleges and Curricula, 2, 33, 81
- Commerce and Economics, 63, 98
- Committees, University, 177
- Conferences, 83
- Correspondence, ii
- Counseling, 12
- County Agents, 180
- Courses of Instruction, 84, 161, *See entries by departments.*
- Curricula, 2

- Dairy Manufacturing, 38
- Dean's List, 31
- Debating, 18
- Degrees Awarded, 188
- Degree Requirements, 31
- Dental Hygiene, 105
 - School of, 52
- Development Program, 4
- Discipline, Academic, 28
- Dining Halls, 11
- Doctoral Program, Biochemistry, 76
- Dormitories, 11
- Dramatics, 18

- Economics, 103
- Economics, Agricultural, 34, 85
- Economics, Commerce and, 67, 102
- Education, 110, *See entries under specific headings.*
- Education, Agricultural, 86
- Education, at Vermont, 1
- Education and Nursing, College of, 54
- Electrical Engineering, 68, 117
- Elementary Education, 55, 107
- Emeriti, 164
- Employment, 13
- Engineering, 66, *See special headings.*
- Engineering Experiment Station Staff, 179
- English, 123
- Enrollment, 30
- Enrollment Statistics, 185
- Entrance Examinations, 22
- Entrance Requirements, 20
- Expenses, 24
 - Nursing, 60
- Experiment Station Staffs, 178
- Extension Courses, 73, 82
- Extension Service Staff, 179

- Faculty, List of, 165
- Family Living, 133
- Fees, 24
- Fellowships, 78

- Finance, 64, 99
- Fine Arts Festival, 18
- Fleming Museum, 9
- Food and Nutrition, 44, 135
- Forestry, 126
- Fraternities and Sororities, 17
- French, 154
- General Information, 28
- General Literature, 127
- Geology, 128
- German, 129
- Government Clearing House, 83
- Government, 150
- Grades and Reports, 31
- Graduate College, 71
- Graduate Assistantships, 78, 175
- Graduate Fellowships, 78, 175
- Graduate Record Examination, 72
- Graduates, 1957, 188
- Graphics, 123
- Greek, 97
- Head Residents, 176
- Health Insurance, 30
- Health Services, 13
- Hebrew, 131
- History, 131
- History, University, 1
- Home Economics, 42, 132
- Home Economics Education, 43, 133
- Home Management, 132
- Honorary Degrees, 196
- Honorary Societies, 16
- Honors, 31
- Honors, Special, 50
- Horticulture, 38, 136
- Hotel and Resort Management, 66, 100
- Housing, 11
- Industrial Management, 65, 101
- Infirmary, 13
- Institutional Management, 136
- Insurance, 30
- Intramural Sports, 16
- Italian, 155
- Junior High School Education, 56
- Kake Walk, 17
- Lane Artists Series, 10
- Latin, 97
- Liberal Arts Curriculum, 46
- Libraries, 8
- Library Fellows, 19
- Library Staff, 175
- Literature, General, 127
- Living Accommodations, 11
- Loan Funds, 27, 197
- Management Engineering, 68
- Marketing and Merchandising, 65, 101
- Master's Degree Program, 71
- Mathematics, 69, 137
- Mechanical Engineering, 67, 119
- Medical Technology, 69, 140
- Medicine, College of, 79
- Men's Residences, 12
- Merchandising, 65, 101
- Military Science, 141
- Morrill, Justin S., 1
- Museum, 9
- Music, 141
- Musical Activities, 17
- Music Education, 58, 111
- Numbering of Courses, 84
- Nursing, 59, 143
- Payment of Bills, 26
- Personnel, University, 162
- Personnel Management, 65, 101
- Personnel Services, 12
- Philosophy, 145
- Physical Education, 146
- Physics, 148
- Placement, 12
- Political Science, 150
- Poultry Husbandry, 39, 152
- Predestination, 50
- Preforestry, 40
- Prelaw, 51
- Preliminary Registration Program, 23
- Premedicine, 50
- Preprofessional Preparation, 50
- Pretheology, 51
- Preveterinary, 41
- Prizes, 200
- Prizes Awarded, 1957, 196
- Psychology, 153
- Publications, Student, 19
- Radio Workshop, 18
- Reading Center, 13
- Refunds, 26
- Regional Cooperation, 4
- Related Art, 45, 134
- Related Services, Staff, 181
- Religion, 146
- Religious Life, 14
- Reports, Scholastic, 31
- Resident Student, 28
- Romance Languages, 154
- Room and Board, 11, 25
- ROTC, 29
- Russian, 156
- Scholarships, 27
- Scholarship Funds, 197
- Secondary Education, 56, 108

Secretarial Studies, 65, 104
Shorthand, 104
Sociology, 157
Sororities, 17
Spanish, 155
Special Honors, 50
Special Students, 22
Speech, 158
Speech Clinic, 13
Student Activities, 14
Student Activity Fee, 25
Student Aid, 27
Student Court, 15
Student Employment, 13
Student Life, 11
Student Organizations, 14
Student Personnel Services, 12
Student Publications, 19
Student Teaching, 57
Summer Session, 82

Technology, College of, 62
Television, 18

Transcripts, 32
Transfer Students, 23
Trustees, 162
Tuition, 24
Typing, 104

University Committees, 177
University Extension, 82
University Library, 8
University Responsibility, 30
Use of English, 32
UVM, Meaning of, iv
UVM Student Association, 15

Veterans Education, 13

Wilbur Fund, 27
Women's Residences, 11
Women's Student Government Association, 15
World Problems, 159
WRUV, 18

Zoology, 160

Academic Calendar

Spring Semester 1958

February	7, Friday	Second Semester enrollment.*
February	8, Saturday	Second Semester enrollment.
February	12, Monday	Classes begin.
February	21, Friday	Kake Walk holiday.
February	22, Saturday	Kake Walk holiday.
March	22, Saturday	Midterm reports due in deans' offices.
April	2, Wednesday	Spring recess begins. No classes.
April	9, Wednesday	Classes resume.
May	1, Thursday	Founders' Day Convocation, 10 a.m.
May	30, Friday	Memorial Day holiday.
May	31, Saturday	Final examinations begin.
June	10, Tuesday	Last day of examinations.
June	15, Sunday	Commencement.

Fall Semester 1958

September	16, Tuesday	Preliminary Days program begins.
September	19, Friday	Enrollment for all new students.*
September	20, Saturday	Enrollment for all other students.
September	22, Monday	Classes begin.
November	26, Wednesday	Thanksgiving recess begins; no classes.
December	1, Monday	Classes resume.
December	20, Saturday	Winter recess begins at noon.
January	5, Monday	Classes resume.
January	19, Monday	Midyear examination period begins.
January	28, Wednesday	Last day of examinations.

Spring Semester 1959

February	6, Friday	Second semester enrollment.*
February	7, Saturday	Second semester enrollment.
February	9, Monday	Classes resume.
February	20, Friday	Kake Walk Holiday.
February	21, Saturday	Kake Walk Holiday.
March	25, Wednesday	Spring recess begins; no classes.
April	1, Wednesday	Classes resume.
May	1, Friday	Founders Day.
May	29, Friday	Dead day; no classes.
May	30, Saturday	Final examinations begin.
June	9, Tuesday	Examination period ends.
June	14, Sunday	Commencement.

* Enrollment dates for medical students are announced in the College of Medicine Bulletin.

CALENDAR

1958

JANUARY

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

FEBRUARY

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	

MARCH

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					

APRIL

			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				

MAY

					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	

JUNE

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						

JULY

			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			

AUGUST

					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							

SEPTEMBER

			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						

OCTOBER

			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		

NOVEMBER

							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							

DECEMBER

			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					

1959

JANUARY

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

FEBRUARY

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

MARCH

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				

APRIL

			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			

MAY

					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							

JUNE

			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						

