

## The Curriculum

THE Governing Boards and the Faculty have based the curriculum upon the principles of distribution and concentration. The requirements of the first two years, while permitting a wide range of choice among Departments and among courses within each Department, have been planned to insure a proper attention to fundamentals, and to serve as a basis for intelligent specialization in the upper-class years.

### THE FRESHMAN YEAR

Freshmen are required to take *English 1-2*, *English 3-4*, *Hygiene* (not required of men taking *Military Science 11, 12*), and *Physical Education*. Three additional courses are to be taken each Semester. These must include courses leading to the completion of Degree Requirements C and D on pages 57-58. Electives may be chosen from the following courses:

<i>Biology 1-2</i>	<i>Government 1-2</i>	<i>Mathematics 1</i>
<i>Chemistry 11-12</i>	<i>Greek 2</i>	<i>Mathematics 11, 12</i>
<i>Classics 1</i>	<i>Greek 3, 4</i>	<i>Mathematics 14</i>
* <i>Economics 1-2</i>	<i>History 1-2</i>	<i>Philosophy 1-2</i>
<i>French 1-2</i>	<i>Italian 1-2</i>	<i>Physics 11-12</i>
<i>French 3-4</i>	<i>Latin 2</i>	* <i>Psychology 1-2</i>
<i>German 1-2</i>	<i>Latin 3, 4</i>	<i>Sociology 1-2</i>
<i>German 3-4</i>	<i>Latin 5, 6</i>	<i>Spanish 1-2</i>

Freshmen should note especially item 5 in ADDITIONAL REGULATIONS on page 56.

### THE SOPHOMORE YEAR

Sophomores who have not completed Degree Requirements A, C, and D listed on pages 57-58 are required to continue with courses leading to their completion. Five regular courses and *Physical Education* must be taken each Semester, except that students enrolled in the *Military Science* program have the option of postponing their fifth course to the Junior year.

Each student must choose his major subject by the end of his Sophomore year, and must submit the courses chosen for the ap-

\* The privilege of electing *Economics 1-2* and *Psychology 1-2* is suspended until further notice.

proval of the Department in which the major is to be taken. He must also choose a minor at the same time, and must submit it for the advice and approval of his major Department.

Sophomores should note especially item 5 in ADDITIONAL REGULATIONS below.

#### ADDITIONAL REGULATIONS

1. **RELIGIOUS EXERCISES:** Chapel services are held each weekday at 10:10 A.M. in the College Chapel, and vesper services are held on Sundays at 5:00 o'clock. Attendance at these exercises is governed by regulations laid down by the College.

2. **COURSES:** Juniors must take four or five courses depending on whether they elected to carry their fifth course in the Sophomore or Junior year. Seniors and Special Students are required to take four regular courses each Semester.

3. **COURSE EXAMINATIONS:** The regular examinations of the College are held at the close of each Semester. An absence from an examination entails the mark of zero. In the event of illness or other unavoidable cause of absence from examination, the Dean may authorize a make-up of the examination.

4. **RANK:** The rank of a student in each course is computed on a scale of 100, but is preserved on the college records in the letters *A*, *B*, *C*, *D*, and *E*. They signify the followings ranks: *A+* 97-100, *A* 94-96, *A-* 90-93, *B+* 87-89, *B* 84-86, *B-* 80-83, *C+* 77-79, *C* 74-76, *C-* 70-73, *D+* 67-69, *D* 64-66, *D-* 60-63, *E* a rank lower than 60 and a failure. In computing final class standings the best thirty-four courses will be counted including all required courses.

5. **DEFICIENCY IN SCHOLARSHIP:** Students receive a major warning and are placed on probation if they are reported to be below passing in two or more of their regular courses at any warning period (middle and end of each Semester). Major warnings at two successive warning periods or at the ends of two successive Semesters render a student liable to dismissal from college for deficiency in scholarship. Freshmen, however, are usually given a full college year in which to become adjusted to college work.

During his first four Semesters at Bowdoin, each student must secure at least six semester grades of *C-* or higher in his regular courses to be permitted to remain in college. (Grades in *English 3-4*, *Hygiene*, and *Military Science 11, 12, 21, 22* are not counted in this tabulation, nor are grades in courses taken at other colleges.)

6. **REPORTS OF STANDING:** A report of the ranks of each student is sent to his parents or guardian at the close of each Semester.

## REQUIREMENTS FOR THE DEGREE

The degree of Bachelor of Arts will be conferred upon students who fulfill satisfactorily the requirements listed below. Courses leading to the completion of requirements A, B, C, and D must be continued until the requirements are completed. The course in laboratory science of requirement F must be taken not later than the Junior year.

## A. ORAL AND WRITTEN ENGLISH:

1. *English 1-2* and *English 3-4* (Public Speaking).
2. Acceptable English in both oral and written work in all courses. Any students whose work is below standard in the rudimentary skills of clear expression may be required to take (or may take voluntarily) the course in Remedial English given in each Semester by the Department of English. Students will be enrolled in this course on the basis of an inadequate score on the English Aptitude Examination, unsatisfactory work in *English 1-2*, or upon recommendation of the Department of English. Until he has satisfied the requirements of this course, no student will be recommended for a degree.

## B. HYGIENE AND PHYSICAL EDUCATION:

1. *Hygiene*. (Students electing *Military Science* are relieved of this requirement.)
2. Two years of *Physical Education*. (See detailed statement in COURSES OF INSTRUCTION on pages 97-98.)

## C. FOREIGN LANGUAGES:

1. Completion of seven units of foreign languages (ancient or modern). A language unit is defined as an admission unit (usually one year of study of a language in a secondary school), or a semester course taken in college.
2. A reading knowledge of French or German. This requirement may be fulfilled by taking appropriate courses, or by passing a reading examination set by the College, or by attaining a satisfactory rating from the College Entrance Examination Board. The reading examination will be approximately equal in difficulty to the reading sections of the final examinations in *German 3-4* or *French 3-4*.

## D. GREEK, LATIN, MATHEMATICS: Two semesters' work in Greek or Latin or Mathematics. Courses in Greek or Latin in satisfaction of this requirement must have as a prerequisite two lan-

guage units in Greek or Latin. These units may be offered for admission or taken in college. Students who present two admission units in Greek or Latin may fulfill this requirement by taking two semester courses or by passing an examination in either Greek or Latin. Students offering Mathematics to fulfill this requirement may offer any one of the following combinations of semester courses: *Mathematics 1* and *11*, *Mathematics 11* and *12*, and *Mathematics 11* and *14*. *Mathematics 1* is not open to students presenting Plane Trigonometry for admission.

- E. HISTORY, PHILOSOPHY, SOCIAL STUDIES: A total of four Semesters of study of the following subjects: History, History of Religions, Government, Economics, Sociology, and Philosophy. Not more than two Semesters may be counted in any one of these subjects in the satisfaction of this requirement.
- F. HUMANITIES AND SCIENCE: Completion of either the Humanities Option or the Science Option as described below.

THE HUMANITIES OPTION:

1. Two Semesters of study in the literature of a language (English, French, German, Greek, Italian, Latin, or Spanish) with readings in that language.\*
2. Two additional Semesters of study in the humanities.\* These may be in the literature of a language, in Art, in Classical Literature in Translation (*Classics 12*), in Music, or in the Literature of Religion (*Religion 1, 2, 5, 6*).
3. Two Semesters of laboratory science (*Biology 1-2*, *Chemistry 11-12*, or *Physics 11-12*) to be undertaken not later than the beginning of Junior year.

THE SCIENCE OPTION:

1. Two Semesters of laboratory science (*Biology 1-2*, *Chemistry 11-12*, or *Physics 11-12*) to be undertaken not later than the beginning of Junior year.
2. Two additional Semesters of science.† These may be in Astronomy, Biology, Chemistry, Mathematics (advanced), Physics, or Psychology.

\* The following courses do not contribute to meeting the requirements set forth in F: *Art 9, 10*; *Classics 1*; *English 1-2, 5, 6, 7, 8, 31, 32, 47*; *French 1-2, 3-4, 9, 10, 15, 16*; *German 1-2, 3-4, 5, 6*; *Greek 2, 3*; *Italian 1-2*; *Latin 2, 3, 4*; *Music 11-12, 13-14, 15-16, 21-22, 23-24*; *Religion 3, 4*; *Russian 1-2, 3, 4*; *Spanish 1-2, 5, 6*.

† The following courses in Mathematics do not meet the requirement of a second year of study of a science: *Mathematics 1, 11, 12, 14, 23*.

3. Two Semesters of Literature.\* These may be in English, French, German, Greek, Italian, Latin, Spanish, Classical Literature in Translation (*Classics 12*), or the Literature of Religion (*Religion 1, 2, 5, 6*).
- G. MAJOR AND MINOR: The satisfactory completion of a major field of concentration and of a minor. (See special requirements in MAJORS AND MINORS below.)
- H. COURSES AND GRADES: To be eligible for a degree, a candidate must have completed thirty-four regular semester courses or their equivalent (a year course is equivalent to two semester courses). *English 3-4; Hygiene; Military Science 11, 12, 21, 22; and Physical Education* are not counted in this tabulation. Each student is required to achieve a grade of C- or higher in at least one-half of the thirty-four courses necessary for graduation.
- I. RESIDENCE: To be eligible for a degree, a candidate must have been in residence at Bowdoin College for at last one year.

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## DEGREES WITH DISTINCTION

The degree of Bachelor of Arts with distinction is awarded in three grades:

*Cum Laude.* A candidate is recommended for a degree *cum laude* who has obtained an average grade of B in all courses presented for a degree.

*Magna cum Laude.* A candidate is recommended for a degree *magna cum laude* who has obtained an average grade of 91.5 or better in the necessary number of Bowdoin courses presented for the degree, and must have been in residence at Bowdoin for at least two years.

*Summa cum Laude.* A candidate is recommended for a degree *summa cum laude* who has obtained an average grade of 93.5 or better in the necessary number of Bowdoin courses presented for the degree, and must have been in residence at Bowdoin for at least three years.

## MAJORS AND MINORS

DEFINITIONS: A *major* is a subject pursued through at least six semester courses. A *minor* is a subject pursued through four semester courses in one department, or two semester courses in each of two related departments.

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REQUIREMENTS FOR THE MAJOR: Every student must satisfy the following requirements for the major:

\* See note on page 58.

1. Each student must pass at least six semester courses approved by his major Department, with a grade of C-, or better, in at least four of them.
2. Each student must complete a minor approved by his major Department.
3. Each student must pass a comprehensive written examination and, whenever such a combination is desired by the Department, an oral examination as well. A science department may at its discretion substitute two extra courses (not to count for the degree) in lieu of the major examination. The courses to be used for this purpose and the grade to be obtained in them are specified by the Department concerned.
4. Each student must attend group, sectional, or individual tutorial conferences in which his major Department shall offer him reasonable preparation for the comprehensive examination.

MAJOR DEPARTMENTS: The Departments in which majors may be elected have designated the courses constituting majors as follows:

(In the following table, a semester course is called a *unit*. A year course is equivalent to two units.)

ART: *Art 1, 2* to be completed by the end of Junior year, and any four other units.

BIOLOGY: *Biology 1-2*, and four other units, excepting *Biology 7-8*.

CHEMISTRY: *Chemistry 11-12, 21, 22, 33-34*. Two extra courses in chemistry, approved by the Department, may be taken in the Senior year in place of a major examination.

CLASSICS: *Greek 11* or *Latin 11* and six units drawn equally from the departmental offerings in Greek and Latin.

ECONOMICS: *Economics 1-2, 13, 17*, and two other units approved by the Department. *Economics 11* may not be offered without *Economics 12*.

ENGLISH: *English 13-14* and six units in English and American literature. Two of these units may be chosen from the following courses in literary composition: *English 8, 31, 32, and 47*.

FRENCH: *French 7, 8, 15, 16*, and two other units from *French 9, 10, 11, 12, 17, 18*.

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GERMAN: *German 13, 14* and four other units chosen from *German 7, 8, 9, 10, 11, 12*.

GOVERNMENT AND LEGAL STUDIES: Any six units approved by the Department.

GREEK: *Greek 11* and any six other units in Greek.

HISTORY: *History 1-2* and six other units in varying combinations to be chosen with the advice of the Department.

LATIN: *Latin 11* and any six other units in Latin.

MATHEMATICS: *Mathematics 11, 12, 21, 22, 31*, and an advanced course to be approved by the Department. Two additional courses to be designated by the Department may be taken in lieu of a major examination. An oral examination in the history of Mathematics is required of all majors.

MUSIC: *Music 1-2, 11-12, 13-14, 21-22, 23-24*, and two semesters to be selected from *Music 3, 4, 5, 6*. The ability to read simple music and a knowledge of piano playing (an easy Mozart sonata) are required of all majors. Under certain conditions, exceptions may be made by the Department.

PHILOSOPHY: Any six units approved by the Department.

PHYSICS: Any six units. Two extra courses may be taken in lieu of a major examination.

PSYCHOLOGY: *Psychology 1-2, 5-6, 7*, and any one of the following: *Psychology 3, 4, 8, 9, or 10*. *Biology 1-2* and *Mathematics 14* are recommended.

SOCIOLOGY: Any six units approved by the Department.

## HONORS IN MAJOR SUBJECTS

A student with honor grades in his major courses may, during his Junior year, become a candidate for a major with honors upon application to his major Department. The award of honors will be made upon the basis of (1) Honor grades, i.e., *B-*'s or better, in the major course units approved by the Department (at its discretion, a Department may accept students with lower grades as candidates for the major with honors), (2) Initiative, originality, and high attainment in additional work under tutorial supervision by the Department, (3) A grade of *B-*, or better, in a written or oral comprehensive examination. A science department may substitute advanced courses not to count for the degree for this examination.

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hemisphere, the settlement and development of the British colonies, the evolution of British imperial policy, and of the American Revolution.

23. *History of Central and Eastern Europe*. Fall 1955 and Fall 1957. MR. HELMREICH.

A study of the historic origins and development, with reference to present-day problems, of the peoples of the Baltic states, Russia, Poland, Czechoslovakia, Germany, Austria, Hungary, and the Balkans.

Prerequisite: *History 1-2* or *History 7, 8*.

- \*27. *Social and Intellectual History of the United States from the Colonial Period until 1850*. Fall 1955 and Fall 1956. MR. WHITESIDE.

28. *Social and Intellectual History of the United States since 1850*. Spring 1956 and Spring 1957. MR. WHITESIDE.

An analysis of historically important social factors and formative ideas: conditions of living, economic problems and adjustments, immigration and internal migration, religion, education, cultural aspirations, and changing attitudes toward the world community are studied with respect to their significance for American development and the American character. Elective for juniors and seniors. A general knowledge of American history is desirable.

## Hygiene

DR. HANLEY

*Hygiene*. Fall 1955 and Fall 1956.

Lectures on human anatomy, physiology, and personal hygiene. This course will be given informally in a series of illustrated lectures. Hours to be announced.

Required of Freshmen who are not taking *Military Science 11, 12*.

## Mathematics

PROFESSOR HAMMOND, *Chairman*; PROFESSORS HOLMES, KORGEN, AND CHRISTIE; ASSISTANT PROFESSOR CHITTIM; AND MR. MERGENDAHL

*Mathematics 11, 12, 21, 22, 31, 32* constitute a calculus sequence which should be elected, in whole or in part, by students of those fields of science or engineering which rely

heavily on mathematics. Students of fields in which statistical procedures are important should consider *Mathematics* 14, 38, and *Economics* 7.

*Mathematics* 1 and 11 satisfy the curricular requirement for Freshmen who do not present trigonometry for admission; *Mathematics* 11 and 12, or 11 and 14, satisfy the curricular requirement for Freshmen who do present trigonometry for admission.

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1. *Plain and Spherical Trigonometry*. Fall 1955 and Fall 1956. MESSRS. HOLMES, MERGENDAHL, AND CHITTIM.
11. *Analytic Geometry and Calculus*. Fall 1955, Spring and Fall 1956, and Spring 1957. MESSRS. HAMMOND, HOLMES, KORGEN, CHITTIM, AND MERGENDAHL.  
Elements of analytic geometry and of differential and integral calculus.  
Prerequisite: *Mathematics* 1 or trigonometry offered for admission.
12. *Continuation of Course 11*. Fall 1955, Spring 1956, and Spring 1957. MESSRS. HOLMES, CHITTIM, AND MERGENDAHL.  
Prerequisite: *Mathematics* 11.
14. *Elementary Mathematics of Statistics*. Fall 1955, and Spring and Fall 1956. MESSRS. KORGEN AND CHITTIM.  
Mathematical and empirical tables; probability; topics from the mathematical theory of statistics, such as measures of dispersion, curve fitting, and statistical correlation.  
Prerequisite: *Mathematics* 11.
21. *Analytic Geometry and Calculus*. Fall 1955 and Fall 1956. MESSRS. HAMMOND AND HOLMES.  
Analytic geometry of three dimensions; more complete treatment of calculus than *Mathematics* 11, 12, including infinite series, partial differentiation, multiple integration, and elementary differential equations.  
Prerequisite: *Mathematics* 11, 12.
22. *Continuation of Course 21*. Spring 1956 and Spring 1957. MESSRS. HOLMES AND CHITTIM.  
Prerequisite: *Mathematics* 21.
- 21P. (*Physics 21*.) *Vector Mechanics and Vector Analysis*. Fall 1955 and Fall 1956. MR. CHRISTIE.  
The algebra of vectors with applications to solid analytic geometry; statics, kinematics, and dynamics, vectorially treated; line integral, directional derivative, gradient, di-

- vergence, and curl; applications to physics and engineering.  
Prerequisite: *Mathematics* 11, 12.
- 22P. (*Physics* 22.) *Continuation of Course* 21P. Spring 1956 and Spring 1957. MR. CHRISTIE.  
Prerequisite: *Physics* 21.
23. *Algebra*. Spring 1956 and Spring 1957. MR. CHITTIM.  
Real and complex numbers, theory of equations, matrices and determinants, elements of formal logic.  
Prerequisite: *Mathematics* 11.
31. *Advanced Calculus*. Fall 1955. MR. KORGEN. Fall 1956. MR. CHITTIM.  
Fourier series and integrals, the Laplace transformation, partial differential equations, Bessel and other special functions.  
Prerequisite: *Mathematics* 21, 22.
32. *Functions of a Complex Variable*. Spring 1956. MR. KORGEN. Spring 1957. MR. CHITTIM.  
Analytic functions of a complex variable, differentiation and integration in the complex plane, theory of residues, conformal mapping.  
Prerequisite: *Mathematics* 31.
33. *Modern Synthetic Geometry*. Fall 1955 and Fall 1957. MR. HAMMOND.  
Properties of triangles and circles, homothetic transformations, the nine-point circle, Simson line, harmonic section, Menelaus' and Ceva's theorems.  
Prerequisite: *Mathematics* 21, 22, or the consent of the instructor.
34. *Continuation of Course* 33. Spring 1956. MR. MERGENDAHL. Spring 1958. MR. HAMMOND.  
Harmonic properties of circles, inversion, and an introduction to non-Euclidean geometry.  
Prerequisite: *Mathematics* 33.
35. *Modern Abstract Algebra*. MR. CHRISTIE.  
Groups, rings, fields, vector spaces and matrices, classification of quadratic forms.  
Prerequisite: *Mathematics* 21, 22.
38. *Advanced Mathematics of Statistics*. Spring 1957. MR. KORGEN.  
Theory of sampling, calculus of finite differences, multiple and partial correlation, advanced probability theory, series

and functions useful in the statistical treatment of experimental data.

Prerequisite: *Mathematics* 14 and 21.

41. *Mathematical Analysis*. Fall 1955 and Fall 1957. MR. HOLMES.

The material of this course is selected from such topics as the logical foundations of the calculus, functions of a complex variable, elliptic integrals, calculus of variations, potential theory, operational methods in applied mathematics.

Prerequisite: *Mathematics* 31, 32; or with the consent of the instructor, concurrently with *Mathematics* 31.

42. *Continuation of Course 41*. Spring 1956 and Spring 1958. MR. HOLMES.

Prerequisite: *Mathematics* 41.

43. *Analytic Geometry*. Fall 1956. MR. HAMMOND.

Homogeneous coördinates, metric and projective treatment of conics and quadrics, general theory of curves, including Plücker's equations, cubic curves.

Prerequisite: *Mathematics* 31; or with the consent of the instructor, concurrently with *Mathematics* 31.

44. *Continuation of Course 43*. Spring 1957. MR. HAMMOND.

Prerequisite: *Mathematics* 43.

NOTE: *Philosophy* 8 should be considered by advanced students of mathematics.

## Military Science and Tactics

LIEUTENANT COLONELS WINFREY AND STERN, AND CAPTAINS  
STOCKTON AND KING

11. *First Year Basic Course*. Fall 1955 and Fall 1956.

Organization of the Army and ROTC (5 hours). Individual weapons and marksmanship: To give the student a practical working knowledge of individual weapons currently used in the Army (25 hours). Leadership, drill, and command: Leadership development through progressive training in the school of the soldier. This phase of military science continues in steps of increasing responsibility through the entire four-year program (15 hours).

12. *Continuation of Course 11*. Spring 1956 and Spring 1957.

American military history: To demonstrate principles of