

YALE COLLEGE PROGRAM OF STUDY, 1966

New Text Written by Professor Edmund S. Morgan  
in Discussing Course of Study Choices

# I

## YALE COLLEGE

GEORGES MAY, PH.D., Dean.

RICHARD C. CARROLL, M.A., Associate Dean, and Dean of Undergraduate Affairs.

GRANT ROBLEY, M.ENG., Associate Dean, and Registrar.

CHESTER F. NATUNEWICZ, PH.D., Assistant Dean (to June 30).

JOHN A. WILKINSON, M.A.T., Assistant Dean.

DAVID A. BROWNLEE, B.A., Assistant Dean (from July 1).

FRANCES E. BERGMANN, Registrar of Freshmen.

SINCE 1701 Yale College has offered courses of study leading to the bachelor's degree. A course is simply a group of students examining a particular subject under the direction of someone who has studied it before. Yale College today offers more than 700 courses. A student working for a bachelor's degree ordinarily takes five in a year and receives his degree after four years.

Twenty courses do not necessarily make an education. Unless the courses bear such a relationship to one another that they both broaden the student's understanding in several areas and deepen it in one or two, he may emerge with a collection of miscellaneous information but no wiser than when he entered. The College insists not only that students perform satisfactorily in a given number of courses but also that they follow a rational program of study, choosing their courses according to prescribed rules. The purpose of these rules is to ensure that breadth of distribution is achieved as well as mastery of a particular study or group of studies. This bulletin gives the rules, lists the courses, and describes some of the incidental characteristics and requirements of pursuing an education at Yale.

### THE UNDERGRADUATE COLLEGES

THE most conspicuous advantage of a large university, such as Yale has become, is that it presents the student with a great breadth of learning and gives him access to scholars who are engaged not only in communicating knowledge but in discovering it. The disadvantage is that the academic community may disintegrate: classrooms become increasingly large; discussions become monologues; questions go unasked and unanswered. As communication breaks down, teachers and students are less of a challenge to one another, and the discovery of new knowledge suffers as much as teaching.

In order to overcome these disadvantages and still retain the benefits of largeness, Yale has established residential colleges. The colleges, which were made possible through gifts from Edward Stephen Harkness, B.A. 1897, are not merely living quarters; they are small communities, whose members know one another well and learn from one another. Each college has its own library, dining hall, kitchen, common rooms, squash courts, and athletic teams; each college offers discussion courses for which academic credit is given; and each college celebrates the progress of the academic year with various festivities, which often include concerts and dramatic presentations.

At the head of every college is a resident master. Associated with him as fellows are about forty members of the faculty, drawn from different departments. A few of them reside in the college, and many have studies there in which to meet with their students. Freshmen are assigned to a college as nonresident members; they may take a limited number of meals there and participate fully in the life of the college. After his Freshman year a student moves from the Old Campus to live in the college to which he has been assigned and normally continues a member of the same college throughout his undergraduate career.

There are twelve colleges—Berkeley, Branford, Calhoun, Davenport, Timothy Dwight, Jonathan Edwards, Morse, Pierson, Saybrook, Silliman, Ezra Stiles, and Trumbull—in each of which a dean advises the Freshmen and upperclassmen in both academic and non-academic matters. A list of college deans follows:

Berkeley, Charles E. Scott (to June 30); Richard H. Bell (from July 1)  
 Branford, Michael H. Cowan (to June 30); Thomas K. Edwards (from July 1)  
 Calhoun, Stephen W. Reed  
 Davenport, Robert R. Porter  
 Timothy Dwight, James S. Davie  
 Jonathan Edwards, Robert E. Kuehn  
 Morse, Robert L. Fischelis (to June 30); David P. Behan (from July 1)  
 Pierson, Joseph H. McMahon (to June 30); F. Seth Singleton (from July 1)  
 Saybrook, James K. Folsom (to June 30); Martin I. J. Griffin, Jr. (from July 1)  
 Silliman, John J. E. Palmer  
 Ezra Stiles, Ernest F. Thompson  
 Trumbull, Edwin S. Redkey

## FRESHMAN YEAR

MUCH of the lasting benefit of your undergraduate years at Yale will depend on how you select courses from this bulletin. To assist you the University furnishes special advisers. Use them. Consult the dean of the college with which you are affiliated. Consult the faculty program adviser assigned to you from the fellowship of that college. Consult your Freshman counselor. They will all assist you in applying the rules and principles described below.

One of the distinguishing features of a liberal education is that it has no single definition. Rather, therefore, than prescribing which specific courses must be taken by all students, Yale College requires that each student design his own program of study, suited to his particular needs and interests, from the multitude of courses available to college students within a university. Only two specific rules will limit your selection of courses outside your major.

1. A Freshman may take no more than one course (or two term courses) in a single department and no more than three courses (or six term courses) in a single division (there are three divisions: Natural Sciences, Social Sciences, and Humanities, see p. 21). He may, however, take as many as two courses (or four term courses) in a department that embraces several different disciplines, such as Classics or Romance Languages.

2. Every student during his four years at Yale, must take at least eight courses (or sixteen term courses) outside the department of his major, of which at least six courses (or twelve term courses) must be outside the division of his major.

The purpose of these requirements is that which dictated the Distributional Requirements imposed on the classes immediately preceding yours. You are required to spread your courses widely among departments in the Freshman year in order to ensure exposure to a variety of ideas and ways of thinking. Many of you come to Yale with advanced preparation in several fields. At some point in your college career you should take advantage of any head start you may have in a subject to pursue it at a higher level than would otherwise be possible (a college course in a familiar subject often discloses unfamiliar and exciting aspects). But in your first year you should probably aim for the maximum of novelty. Try out some subjects that you never tried before. At the end of your Freshman year you ought to make at least a tentative choice of the department or program in which you wish to major (science majors *must* do so). In choosing your Freshman courses, therefore, you should give attention to the prerequisites for any major in which you feel a particular interest.

But do not close your mind to other possibilities. Use your first year to explore, and do not hesitate to change your mind in your second year. If you have selected your courses wisely, you will have the groundwork to enter most majors during or at the end of your Sophomore year.

Although you will not be required to take specific courses in specific departments, you must distribute your courses according to a plan, a plan designed not only to open the maximum variety of subjects to you but also to improve your chances of gaining the most elusive of goals, a liberal education.

Educated men by no means agree about everything that a liberal education should include, but nearly all would agree on the following propositions, which should serve you as guidelines.

1. An educated man should be able to express himself clearly in his own language, both in speech and in writing. It is a frequent illusion to suppose that you can think clearly if you cannot write clearly. Words are the basic tools of thought. If you cannot use them skillfully, you will be handicapped not only in communicating your ideas to anyone else but also in developing, defining, and understanding them yourself. You should therefore take at least one course, and preferably several, that will require you to write papers and have them criticized for clarity of expression by the instructor. The most obvious department in which to look for such courses is English. Examples are English 15, 25, 29, and 77. But several other departments offer courses that give strict attention to writing. Among them are several courses in Classical Civilization, History, and Philosophy.

In whatever department you study writing, it would be well to take at least one course in English literature. Although language is an essential tool for any kind of study, you will not fully understand its possibilities and the avenues of thought and feeling it can open, unless you can appreciate the use made of it by its greatest masters. You will be missing one of the rewards made possible by your own increased skill unless you follow or accompany the study of writing by the study of literature.

2. Besides attaining skill in English, you should be able to understand, speak, read, and write a language other than your own. Mastery of a foreign language will increase your subtlety of mind and sharpen your sensitivity to the use and meaning of words in your own language. Most of you will have been exposed to a foreign language, but your knowledge of it should be carried to the level where you can not only speak it freely (if it is a modern language) but also read its literature fluently. Again, you should not acquire the skill

without using it. Indeed unless you use it you are not likely to retain it. Only if you study the literature will your skill serve its purpose of widening your perspective by opening the doors of another culture. You may speak a foreign language perfectly and yet remain provincial.

The question of which language or languages you study will depend on your previous preparation and future goals. If, for example, you plan to do graduate work after college you should study French, German, or Russian, or, depending on your field of graduate work, Greek or Latin. It will also be advantageous to you to acquire more than one foreign language. There is little to be gained, however, by taking only one course in a new language. If you begin a new language, at least two years of work or an intensive, double course taken in a single year is usually necessary to enable you to use the language effectively in either speech or writing.

3. The study of a foreign language and literature will help to overcome geographical provincialism, but there is also such a thing as temporal provincialism. An educated man should seek historical perspective on his own times by studying the older civilizations from which our own has developed. You should not leave college without having studied the history, art, music, philosophy, religion, or literature of the ancient world or the middle ages (before the sixteenth century). Courses in the more recent history of these subjects may serve a similar purpose (and students who have not had a good general course in American history in high school should take one in college). Ideally you should study the art, artifacts, and ideas both of the modern and of the ancient world. But if you must choose between the two, it would be wise to begin with the ancient.

4. A man should not consider himself educated today unless he has an understanding of the mathematics that underlies many of the basic fields of study. Mathematics is not only necessary for an understanding of most subjects in the natural and social sciences, but it proves a useful tool in some of the humanities. Not every subject requires the same kind of mathematics, and the most useful course for your purpose may not be given in the Mathematics department itself but in the following departments: Economics, Engineering and Applied Science, Industrial Administration, Philosophy, Political Science, Psychology, Sociology, or Statistics. Each of these departments offers courses in the mathematical and statistical methods used in its discipline: Economics 25, Engineering and Applied Science 30b, 31b, 32a, 57b, 58b, Industrial Administration 25 and 35, Philosophy 20, Political Science 29a, Psychology 40a, Sociology 40a.

## TYPICAL PROGRAMS

[Double line divides courses in the division of the major from other courses]

STANDARD DEPARTMENTAL MAJOR  
IN THE HUMANITIES

Freshman Year	Sophomore Year	Junior Year	Senior Year
English 15*	English Literature	Major	Major
Foreign Language or Literature	Foreign Literature	Major	Major
Distribution. See guideline 3 above		Major	Major
Mathematics	Social Science	Courses either in or outside Division of the Major	
Natural Science	Courses to be taken from the Social Sciences and the Natural Sciences		

STANDARD DEPARTMENTAL MAJOR  
IN THE NATURAL SCIENCES

Freshman Year	Sophomore Year	Junior Year	Senior Year
Science†	Science	Major	Major
Science	Science	Major	Major
Mathematics	Mathematics or Science	Major	Major
English 15*	English Literature	Courses either in or outside Division of the Major	
Foreign Lang. & Lit. (French, German, or Russian)	Distribution. See guidelines 2, 3, and 6 above.		

\*Or another course, emphasizing writing.

†All majors in the natural sciences (see p. 21) are encouraged to take chemistry during their Freshman year, unless their work in secondary-school chemistry was particularly advanced.

STANDARD DEPARTMENTAL MAJOR  
IN THE SOCIAL SCIENCES

Freshman Year	Sophomore Year	Junior Year	Senior Year
Social Science	Social Science	Major	Major
English 15*	English Literature	Major	Major
Foreign Language or Literature	Foreign Literature	Major	Major
Mathematics	Distribution. See guideline 3 above	Courses either in or outside Division of the Major	
Natural Science	Courses to be taken from the Humanities and the Natural Sciences		

PREMEDICAL STUDENT† ELECTING A MAJOR  
IN THE SOCIAL SCIENCES

Freshman Year	Sophomore Year	Junior Year	Senior Year
Social Science	Social Science	Major	Major
English 15*	Distribution. See guideline 3 above	Major	Major
Foreign Language or Literature	English or Foreign Literature	Major	Major
Mathematics	Physics	Courses either in or outside Division of the Major	
Chemistry	Biology	Chemistry	Natural Sciences or Humanities

\*Or another course, emphasizing writing.

†The premedical student should consult pp. 41-43 for information about the various programs open to him.

Unless, however, you have already attained proficiency in mathematics at the level of the calculus, you probably should acquire this degree of mathematical skill in Mathematics 10a and 15b before proceeding further. If you wish to widen your opportunities for advanced study in a variety of fields, you should continue to pursue the study of mathematics in your Sophomore or Junior year. Skill in mathematics, as in the languages, is likely to vanish if it is not used and increased.

5. As you should couple the study of languages and writing with the study of literature, so you should couple mathematics with the sciences. Therefore, building on the mathematical foundation you have already gained in school or are developing at Yale, you should become acquainted with at least one of the natural sciences. These are areas where human reason and imagination have made their most dramatic progress in the last three hundred years and especially during our own century. Indeed, the creative effort of the sciences so dominates modern culture that no person in this century may consider himself educated without an understanding of science.

Students intending to major in a science may need different introductory courses from those who are studying a science simply as part of their general education. Before selecting a science course, you should consult with your college dean and with the director of undergraduate studies or placement officer in the department concerned.

6. Finally, to understand the duties and problems facing you as a human being among other human beings, you should become familiar with at least one of the social sciences. The social sciences, like the natural sciences, often rely heavily on mathematics; but the subject matter is people rather than things. At a time when the people of the world are increasing in both their numbers and their discontents, their future and the future of all that they have hitherto achieved depends heavily on the social sciences. An educated man should have some understanding of what men have learned and are learning about living together. Moreover, he cannot afford to be totally ignorant of the peoples of Eastern Europe, Asia, Africa, or Latin America. The Yale curriculum contains a wide variety of courses on these areas, dealing with comparative social systems, governments, economies, and histories.

In applying these guidelines, you should seek advice not only from your college dean, counselor, and faculty program adviser but also from directors of undergraduate studies or other faculty members in different departments and divisions. Although no adviser will prescribe a particular set of courses for you, you should make use of

all the advice you can get in order to construct the most effective program. The courses by which you fulfill your educational needs must depend on your interests and your needs, but they should be selected according to a reasoned plan of study in which none of the principles outlined above is ignored.

The final check on specific course selections will be a general screening of all student programs to identify those that depart markedly from these general principles. Should your program be one of those, you will be obliged to persuade the dean of your college and your faculty program adviser that it will achieve for you in its own way the goals of a liberal education. Every student's program must be approved by his dean and adviser, and every reasonable program will be approved. Printed on pages 6-7 for your guidance are some charts of typical course patterns for students with different needs and backgrounds. These carry out the principles described above, but are suggestions, not prescriptions.

#### ADMISSION WITH ADVANCED CREDITS AND STANDING

An ever-increasing number of entering Freshmen have completed advanced or honors work, informally or under the auspices of the Advanced Placement Program or by enrollment in a college course. Yale stands strongly in support of this superior attainment and opens to each matriculant who has done such work in English, history, foreign language (ancient or modern), mathematics, chemistry, biology, or physics the opportunity of advanced placement, advanced credits, and advanced standing.

In general, advanced secondary work must be validated by excellent scores on the student's regular College Board examinations, or on the Advanced Placement Tests of the College Entrance Examination Board given in May. Favorable results enable the superior student to enter directly into higher courses and to satisfy in advance some Distributional Requirements, and thereafter to attain a greater freedom and flexibility in arranging his program of studies in future years or to accelerate his academic career as much as his talents and interests justify.

A member of the Class of 1970 who receives a College Credit for advanced work done in school in a subject outside the department of his major will be entitled (though not encouraged) to reduce the number of courses he must take outside this department. If the credit is in a subject outside the division of his major, he may reduce the number of courses outside this division. In other respects the

following rules apply to the Class of 1970 equally with other classes:

1. A DISTRIBUTIONAL CREDIT is granted to the student who has done well in his school work and in his entrance or advanced placement examination in a subject, listed above, at a sufficiently high level to have anticipated the main content of one of the Distributional Requirements (plus first-year calculus).<sup>\*</sup> Such a credit has no quantitative value when awarded; it merely frees the recipient from the appropriate Distributional Requirement, allowing him to go into advanced work in the same area or to turn to another area. At the end of Freshman year, the recipient of a Distributional Credit may have it converted into two term-course credits as is indicated below.

2. A COLLEGE CREDIT, that is two term-course credits toward the degree, will be granted both at entrance and at the end of Freshman year in the following manner: (1) Matriculants who score 4 or 5 on an Advanced Placement Test administered in May by the College Entrance Examination Board and who also have had an Advanced Placement course in secondary school, or its equivalent, will be given simultaneously both a Distributional and a College Credit at entrance; (2) College Credits may also be awarded to the student who has acquired Distributional Credits without College Credits at entrance and who has done satisfactory work during Freshman year. In such an instance the student is normally expected to take an advanced course at Yale in the area in which he was awarded Distributional Credit. His performance in this course as well as his entrance record and the quality of his total Freshman record will be taken into consideration in granting College Credit.

The student receiving College Credit may proceed faster to his major field of interest, undertake special and advanced work in areas in which he is qualified, or reduce his formal program of studies proportionately in his Sophomore, Junior, or Senior year.† Also by arrangement with the Executive Committee of Yale College at the end of Freshman year, he may reduce his four-year undergraduate program under any of the following options:

(a) *The student receiving two or more College Credits*, provided he maintains an average of 75 or better, may accelerate by making

<sup>\*</sup>It should be noted that credit in Mathematics 10a and 15b does not fulfill the seventh requirement but, for the student interested in science or engineering, satisfies an additional special requirement. Likewise, a special credit in chemistry awarded only to engineering students does not, by itself, satisfy the general requirement in natural science.

†These same opportunities will also be extended to students who with the prior authorization of the Executive Committee of Yale College have acquired one or more extra credits in courses taken at Yale over and above the normal five-course program.

up the necessary course credits through extra courses in the regular school year, and by not more than one summer of study.

(b) *The student receiving three or four College Credits* will be eligible for acceleration, without having to make up course deficiencies, provided he stands in the top quarter of his class at the end of Freshman year.

(c) *The student receiving five College Credits* will, upon his completion of the Freshman year in good standing, be eligible for promotion directly to the Junior class provided he has met the prerequisites of his major.

### CHOOSING A MAJOR

In designing a program of study, you must plan for depth of concentration as well as breadth of distribution. To study a subject in depth can be the most rewarding and most liberating educational experience open to you and one that may occupy the rest of your life. Although no one should specialize to the neglect of distribution, knowledge advances by specialization, and you can gain some of the excitement of discovery by pressing close to the outer limits of human knowledge in some one field. Intense study of a seemingly narrow area of investigation will often disclose ramifications and connections that alter your perspective on every other subject. It will also sharpen your judgment and acquaint you with processes by which new truths can be found.

In order to expose yourself to this kind of experience, you must choose from the list on page 21 a field of study which will be your "major," a field, that is, in which you wish to work more intensively than in any other. Specific requirements for such intensive study are established by each department or program and are spelled out in the later pages of this bulletin.

Many students will have made a tentative choice of major before entering college. Others will have settled on a general area, say the natural sciences or the humanities, without being sure of the particular department or program. Still others will be completely undecided. Past experience shows that a student who arrives with his mind made up often changes it after a year or two. Even if you feel certain of your choice, you should keep open the possibility of a change. In selecting your courses during the first two years, you should have in mind not only the principles of distribution outlined above, but the need for a preliminary exploration of the subjects to which you may feel drawn, in order that you may be aware of your own tastes, talents, and capacities. As in the case of distribution,

you should frame your strategy according to your needs, but once again a few guiding principles may help you in selecting courses.

1. In some fields of study a sequence of courses must be taken in chronological order from the Freshman to the Senior year. In order to major in one of these fields, which include most of the natural sciences and some of the social sciences, you must lay the groundwork in the Freshman year. If the initial courses are missed in the Freshman year, it is often too late to start a major in science in the Sophomore year. The Freshman courses are "prerequisites" for the Sophomore courses.

2. In most of the humanities and social sciences, although there is some progression from elementary to advanced courses, the stages are fewer. It is possible to begin a major in, say, English, Psychology, or History, at the end of the Sophomore year, because there are few prerequisites, and students may satisfy them in either the Freshman or Sophomore year or even in some cases on the basis of work done in secondary school. To major in Classics, however, a student must at the outset master Latin or Greek and preferably both.

3. In order, therefore, to attain the maximum range and freedom of choice, you should think seriously about your probable choice of major before arriving at college. If you have even a remote interest in the sciences, you should be sure to include in your Freshman year a course in mathematics and probably two in the natural sciences, one of these two preferably in chemistry.

4. Students majoring in science are expected to learn French or German or Russian. You will help to keep open the possibility of a major in science if you select one of these languages for study in the Freshman and Sophomore years.

5. Many of the courses open to you as a Freshman will continue work begun in secondary school. You will probably want to choose some of your Freshman courses in areas with which you have already attained an initial familiarity and interest, but it will limit your range of choice and deprive you of intellectual stimulation if you fail to take some courses in fields that are wholly new to you.

6. As a Freshman you will normally take five courses, but under certain circumstances you will be able to take only four. If, for example, you take two laboratory science courses and a five-hour course in language, you probably should take only one additional course. If you take a nine-hour intensive language course, you probably should take only three additional courses.

Once again, you should seek advice: from your college dean, from your Freshman counselor, from faculty program advisers, and from the directors of undergraduate studies in the different departments and programs.

## DISTRIBUTIONAL REQUIREMENTS FOR CLASSES OF 1967, 1968, AND 1969

1. **ENGLISH** 15.
2. **A FOREIGN LANGUAGE**, ancient or modern, at the level of 22 or higher. French, German, or Russian is required for science majors and is strongly recommended for those in engineering and applied science. Students electing an elementary intensive language numbered 25 or 100 must secure a grade of 80 or better to satisfy this requirement.
3. **HISTORY**, ancient or modern; or History of Art; or History of Music; or History of Science and Medicine.
4. **A SOCIAL SCIENCE** (Anthropology, Sociology, Psychology; Economics, Geography, or Political Science).
5. **A NATURAL SCIENCE**.
6. **CLASSICAL CIVILIZATION**; or **PHILOSOPHY**; or **RELIGIOUS STUDIES**.
7. A second **NATURAL SCIENCE**; or **MATHEMATICS** (two terms at the level of 20 or above); or a **FOREIGN LITERATURE** (Latin or Greek at the level of 30 or higher; or a modern foreign literature at the level of 40 or above taught in the foreign language).

## SPECIAL PROGRAMS

### *SPECIAL PROGRAMS FOR FRESHMEN AND SOPHOMORES*

THESE two programs are designed to meet the various needs and interests of entering students of superior achievement and ability, whose past performance entitles them to Advanced Placement and Advanced Credit, and who desire a level of study that will prepare them with maximum intensity and speed for independent work in the upper-class Major and Intensive programs.

Depending on their qualifications and intentions, members of the Class of 1970 will apply to either of these programs, keeping in mind that the first one (Directed Studies) offers a special plan of distribution over several subjects, whereas the second (Early Concentration) allows a great deal of concentration in one given subject.

Application for either of these programs should be submitted to

the Yale College Dean's Office by June 1, 1966. Applicants will be expected to have done advanced work in school in more than one subject, and especially in a language. Exceptions to this requirement may occasionally be made.

#### THE DIRECTED STUDIES PROGRAM

Directed Studies was established in 1946 as a humanities program and was expanded in 1958 to include a parallel program for the sciences. These two programs have now been combined in a single program which accommodates about sixty Freshmen and forty Sophomores.

The aim of Directed Studies has been from the beginning to explore the educational opportunities arising from a selected student body, a highly qualified staff, small discussion classes of the seminar type (limited in most instances to twelve students), and a balanced curriculum of specially designed courses, which together supply a foundation of unusual depth and breadth for subsequent specialization. To the sixty Freshmen who will be admitted to the program in the fall of 1966, the following courses are offered: Literature I, Philosophy I, History of Art I, History and Politics I, Mathematics I, Physics I. A student who plans to stress the humanities will normally take the first four of these courses: Literature I, Philosophy I, History of Art I, History and Politics I; but with the permission of the Chairman an advanced literature course in a modern foreign language at the level of 40 or above, or in an ancient language at the level of 30 or above, may be substituted for any one of these. The fifth course will ordinarily be chosen from Physics I and Mathematics I (or the mathematics course at the level indicated by the Mathematics Placement Test), but students with special interests or qualifications may, with permission, choose their fifth course from other offerings in the sciences.

Students who are planning to major in a science will take any two science and mathematics courses most appropriate to their eventual major. The remaining three courses will be chosen from History and Politics I, History of Art I, Philosophy I, and Literature I. But in no case should the number of humanities courses be less than three. Students already certain of their intention to major in a science are strongly urged to consult both the Director of Undergraduate Studies in the correct department and the Chairman of Directed Studies.

The student who completes the work of the first year of Directed Studies *with distinction* may normally expect to achieve the B.A. in three years, if he so desires. Application must be made to the Dean of Yale College.

About forty of the sixty Freshmen admitted to the first year of Directed Studies will be admitted the following fall to the second year, if their applications for admission have been approved by the Committee on Curriculum. In the second year a varied set of departmental studies is arranged with special reference to the twentieth century. A student continuing into the second year will take one or more courses from the following list, offered for Directed Studies students only, dealing with the twentieth century and its arts, contemporary world problems, and perspectives in modern thought. These are History of Art IIa, Literature IIb, \*Philosophy II, Economics I, Sociology I, and Psychology I. The remaining courses may be electives chosen either from the courses offered for Sophomores in the Directed Studies program or from the Standard program at large, but students will be expected to observe the principles laid out on pages 3-9 above. See the detailed description of courses for both Freshman and Sophomore years on pages 86-89.

The Directed Studies program prepares the student for many majors. Special arrangements may in some instances be necessary for students continuing into the Sophomore year of Directed Studies who wish to major in some of the sciences or social sciences. Students undertaking premedical programs or entering ROTC programs, and students who have already selected a specific science major (e.g., physics, chemistry, etc.) are advised to consult with their College Dean or Dr. Ewell, Chairman of the Premedical Committee, before electing the program of Directed Studies. Students whose interest in science is not as yet fixed in a single direction will find in this program an attractive challenge.

#### THE EARLY CONCENTRATION PROGRAM

The Program of Early Concentration is designed to meet the needs of about sixty to seventy members of the entering class who are eager and able to concentrate without delay in a field of study of special interest to them. Although it enables them in most cases to satisfy the prerequisites to the major, it does not commit them to it.

Some of these semi-tutorial seminars work entirely in ways not paralleled in other courses, through a combination of group discussions and individual conferences concerned with the development of independent study and individual projects. Others combine this approach with work taken in one or more regular departmental courses. They are all systematically limited to small numbers (five to eight students per course) of Freshmen of exceptional motivation, ability, and preparation. Each of them counts for two fifths of a student's time. The remainder of his schedule is allocated to three regu-

lar courses, one of which may be in or very close to the student's special field of interest.

Each seminar is affiliated with one of the residential colleges. It is taught by a Fellow of this college, who acts also as faculty adviser to his students; and the Freshmen who are admitted to it are assigned to this college.

The complete descriptive list of the offerings under this program for 1966-67 appears in a separate brochure entitled *Yale College, Special Programs, 1966-67*. They include Chemistry, Classics, Economics, Engineering and Applied Science, English, History, Mathematics, Music, Philosophy, Physics, and Political Science.

#### COLLEGE DISCUSSION COURSES

In each of Yale's twelve residential colleges four or more courses (e.g., Classical Civilization 10, English 25, French 41, History of Music 10, Philosophy 13 and 22) are taught on a small (limit: twelve students) discussion-group basis. Such courses fulfill regular course requirements and, when compared to lectures or large divisions, have the advantages of smallness: the stimulation provided by the close relationship between teacher and students, the excitement of more independent work, and increased opportunities for oral and written expression—advantages which should quicken the intellectual interests of the participants.

Sophomores have priority in electing to enroll in these courses, but a number of places are reserved for Freshmen. Those interested should so indicate when returning their tentative selection of courses in July. If vacancies still exist in September, additional Freshmen may be able to move into these courses. See the booklet *Yale College, Special Programs, 1966-67*.

#### THE JUNIOR YEAR ABROAD

Upon recommendation of the Chairman of the department of his major and with the approval of the Yale College Committee on the Junior Year Abroad a student may arrange for a year's study in France, Germany, Spain, or Italy at the Junior level. No student will be allowed to spend his Senior year away from Yale.

This plan is not restricted to majors in language and literature, but is intended for mature and responsible students interested in the language, history, and culture of the country concerned and who desire to specialize in such subjects as art, government, history, international affairs, music, philosophy, etc.

Candidates must stand in the top half of their class and must have a minimum competence in the language equivalent to the completion of the Yale College foreign language requirement with a grade of 80 or above. For the Junior Year in France, a course at the level of French 30 or above is usually required.

Applicants must apply for admission to a program of study abroad approved by Yale College, such as the Junior Year in France sponsored by the Institute of International Education or Sweet Briar College, or similar groups for Germany. To receive credit for the year abroad toward his degree at Yale the student must submit evidence of his achievement wherever possible by a transcript of his record, or, in the absence of a transcript, by examination upon his return. In addition all students will be required to write essays during the year abroad as prescribed by the department of their major.

For admission to the Junior year in France, consult Mr. C. A. Porter, 321 WLL; for the Junior year in Germany, consult Mr. Schürer, 307 WLL; for the Junior year in Italy, consult Mr. Bergin, Master's Office, TP; for the Junior year in Spain, consult Mr. William D. Ilgen, 493 College Street. Applications should be initiated before the end of the first term.

#### SCHOLARS OF THE HOUSE

Another special Yale College program is that of the Scholars of the House. The purpose of this program is to encourage a small number of especially qualified Seniors to benefit from an opportunity for independent and original work, either academic or creative, on a scale impossible in the normal undergraduate programs. Scholars of the House will be relieved of all formal course requirements. They are, however, free to elect or audit (with the assent of the instructor concerned) any course or courses given in the College. Each student will be assigned to a faculty adviser, whenever possible of his own choosing, to whom he may turn freely for guidance in an essay or project for the year. He must also complete a course of reading and pass an oral examination at the end of Senior year. A candidate for the program must have a record of three years of distinguished work in his undergraduate program. He must have at least an 85 average, or in lieu of such an average he must be extraordinarily proficient in the field of his special interest. Most important, he must have demonstrated to the satisfaction of his instructors his capacity for independent work.\*

\*See pp. 265-266 for additional information.

*SIMULTANEOUS AWARD OF THE BACHELOR'S  
AND MASTER'S DEGREES*

It is possible for a limited number of students of outstanding ability and motivation to undertake graduate work while still enrolled in Yale College, which in some cases will qualify them for the simultaneous award of the master's and bachelor's degrees at the end of their Senior year.

Such students shall, during their Junior and Senior years in college, complete any unsatisfied Distributional Requirements and take at least three more courses outside of their major. Their graduate work will normally not be entirely concentrated in their Senior year. They will be expected, through their work in regular graduate courses and by other means, including fulfillment of the regular language requirements of the Graduate School, to demonstrate achievement equivalent to that of regular graduate students receiving the master's degree.

Students interested in this possibility should consult with their departmental adviser, to ascertain whether the department of their major has a program to this effect approved by the faculties of Yale College and the Graduate School.

*SUMMER LANGUAGE INSTITUTE*

The Yale University Summer Language Institute offers intensive courses which, if successfully completed, fulfill the Yale College foreign language requirement. Courses are also offered to prepare students to meet the language requirements of the Graduate School.

In 1966 the summer session will give courses in European languages (Bulgarian, Dutch, French, German, Italian, Portuguese, Russian, Serbo-Croatian, Spanish, Swedish) and East Asian languages (Chinese, Japanese, and Korean) in an eight-week program from June 27 through August 19. For further information and announcement, write to the Director, Yale University Summer Language Institute, 370 Temple Street, Yale University, New Haven, Conn.

**SOPHOMORE YEAR**

For his Sophomore year the student must normally take five courses each term. These courses must include a foreign language,\* unless the requirement has been fulfilled. The student's program for Sopho-

\*Science majors must meet this requirement through French, German, or Russian.

more year must be signed by his counselor and his Residential College Dean if he is a candidate for the B.A., or his division officer if he is a candidate for a B.S. or B.A. degree in the sciences.

**UPPERCLASS YEARS: MAJOR PROGRAMS**

At the end of Freshman year, students will choose the degree for which they wish to qualify. Those seeking the B.S. degree in Yale College will elect their majors at this time. Those entering the B.A. program will postpone the formal election of their major until the end of Sophomore year. All candidates for a bachelor's degree in Yale College must elect one of the major programs in the list on page 21; these programs are described in general terms on the following pages, and in more detail in the announcement of the courses given by the departments or divisions in question. In every case the student shall plan his schedule of courses in his subject or field in consultation with a representative of the department or program concerned, and must secure the consultant's written approval before the schedule is handed in. The student should acquaint himself fully with all the requirements of the major he plans to enter, with regard not merely to his immediate choice of courses but to the plan of his entire work in his last two or three years in college.

Candidates preparing themselves for entrance to medical school should include as part of, or in addition to, any major program of study the basic courses required by all medical schools: biology, physics, inorganic and organic chemistry. Mathematics through calculus is expected by more medical colleges each year and is enthusiastically approved by all. Furthermore, it is the prerequisite for the preferred course in physics—Physics 22.

Students contemplating study in the Graduate School should inquire concerning the language requirements of the subject in which they are interested. Normally a reading knowledge of both French and German is required for the Ph.D. degree.

Students who expect to follow a curriculum in engineering or applied science are referred to the chart on page 28. While it is anticipated that additional programs of study in these areas will be available in the future, both the Freshman and Sophomore years will be common to all students in the department. Thus, the men who expect to follow a program in engineering or applied science should elect, in their first year, chemistry and mathematics at the appropriate level and Physics 14. They should elect, in their second year, an appropriate course in Engineering and Applied Science and Physics 23a.

The programs of Juniors and Seniors in the Standard Program,

both B.A. and B.S., shall consist of five full courses each year. At the discretion of the department concerned the Senior seminar for students in the Standard Program may be a single or a double course. In the Intensive Programs, however, Juniors and Seniors are normally required to take only four courses, of which one shall be a Senior essay, a project, or a graduate course.

The departmental examinations, consisting of two four-hour examinations, shall receive a numerical grade that shall be weighted in the student's general average as the equivalent of a full-year course.

In both Junior and Senior years, the programs for all Departmental Majors whether Standard or Intensive, *must have at least one elective course outside the area of concentration*. Exceptions to this rule will be granted only by the Executive Committee of Yale College.

#### THE DEPARTMENTAL MAJOR (B.A. OR B.S.)

The major consists of the equivalent of five or six year courses, normally taken during Junior and Senior years in a single subject. The sixth course may be in the major itself, or in a related field. The major may also require one prerequisite course, commonly taken during the first two years. Qualified candidates may take one of the major courses during Sophomore year. See the charts on pages 25-31.

For B.A. and B.S. candidates, the Departmental Major may be either Standard or Intensive. In the Intensive phase, at least one of the courses must be a discussion or tutorial course. The student in the Intensive Major must write a Senior essay, undertake a project, or take a graduate course. Each of these shall normally count as one of the courses in the major in Senior year. Departmental honors are awarded for independent work in the major subject performed over and above the minimum requirement for the Standard Major.

In order to qualify for the bachelor's degree all students must pass a departmental or divisional examination. This examination is given in the spring term of Senior year.

Students taking the departmental or divisional examination may, with the written consent of the instructors, be excused from not more than two examinations in the courses of their major subject for the second term of Senior year.\*

#### THE DIVISIONAL MAJOR (B.A.)

Divisional Majors, interdisciplinary in nature, are offered candidates for the B.A. degree in four areas: American Studies; History, the Arts, and Letters; Political Science and Economics; and Culture

\*Only courses listed under the offerings of the student's major in the *Yale College Programs of Study* are subject to examination exemption.

#### MAJORS IN YALE COLLEGE

The division to which each major is assigned is indicated by the symbol in brackets: [H], Humanities; [NS], Natural Sciences; [SS], Social Sciences.

##### Departmental Majors (B.A.)

Anthropology [SS]  
 Architecture [H]  
 Art (Painting, Sculpture, Graphic Design) [H]  
 Classics (Greek, Latin, Greek and Latin, Ancient History) [H]  
 Drama [H]  
 Economics [SS]  
 English [H]  
 French [H]  
 Geography [SS]  
 German [H]  
 Greek [H]  
 History (including Ancient History) [H]  
 History of Art [H]  
 Italian [H]  
 Latin [H]  
 Mathematics [NS]  
 Music (History or Theory and Composition) [H]  
 Philosophy [H]  
 Political Science [SS]  
 Psychology [SS]  
 Religious Studies [H]  
 Russian [H]  
 Sociology [SS]  
 Spanish [H]

##### Departmental Majors (B.S.)

Engineering and Applied Science [NS]  
 Industrial Administration [SS]

##### Departmental Majors (B.A. or B.S.)

Biology [NS]  
 Chemistry [NS]

Geology [NS]  
 Mathematics [NS]  
 Physics [NS]

##### Divisional Majors (B.A.)

American Studies [H & SS]  
 I. History, the Arts, and Letters [H]  
 II. Political Science and Economics [SS]  
 III. Culture and Behavior [SS]  
 IV. Special Divisional Majors (see p. 22)

##### Divisional Majors in the Sciences

Astronomy and Physics [NS]  
 Biochemistry [NS]  
 Molecular Biophysics [NS]

##### Special Majors (B.A.)

Astronomy, Mathematics, and Physics [NS]  
 Mathematics and Philosophy [H & NS]  
 Economics and Mathematics [NS & SS]  
 Mathematics and Physics [NS]  
 Physics and Philosophy [H & NS]  
 Chinese Studies [H & SS]  
 Japanese Studies [H & SS]  
 Russian Studies [H & SS]  
 Southeast Asia Studies [H & SS]  
 Latin American Studies [H & SS]  
 Scholars of the House  
 Classics and English [H]  
 Classics and French [H]  
 Classics and German [H]

and Behavior. These programs are provided for students who wish to elect broader programs than the Departmental Majors allow. They comprise courses, tutorial work, and reading programs appropriate to each major. The student should consult the detailed description of each of these majors under its alphabetical order in this bulletin.

The programs in the last-named Divisional Majors are Intensive Programs reserved for students from the upper half of their class. In these programs the task of the student is to prepare himself through his courses and his reading to take a comprehensive examination in the spring term of his Senior year. The student in the Intensive Divisional Major is expected to do independent work, such as writing a Senior essay or its equivalent. American Studies offers both Intensive and Standard Majors.

Admission to History, the Arts, and Letters, Political Science and Economics, and Culture and Behavior is open to students who have demonstrated in their Freshman and Sophomore years ability, maturity, and motivation, showing that they can profit from a program of study which will require mastery of a large area of knowledge and demand a considerable degree of responsibility for self-education.

Special programs are open to a limited number of students in the upper half of their class who have particular needs. For example, students who wish to take a special interdivisional program such as Physics and Philosophy, or some other reasonable combination, may propose special arrangements to the Yale College Dean's office. Similarly such students as wish to elect Divisional Major I, II, or III, but whose course of study is severely cramped because of ROTC, pre-medical, or other requirements may make special appeal. These students must demonstrate for their entire four-year course that they cannot fulfill all requirements—distributional, divisional, and their peculiar needs; they may then be relieved of that part of their Divisional course of study which is deemed necessary by the Yale College Dean's office in consultation with the pertinent Divisional committees.

Students wishing to arrange special programs under Divisional Majors should report to Dean Carroll.

Premedical students should consult advisers about their programs. Members of the premedical committee are: Dr. Ewell, *chairman*, Messrs. Ellsworth, English, and Novick.

A different group of Special Majors such as Chinese, Japanese, Russian, and Southeast Asia Studies, Latin American Studies, Economics and Mathematics, and the program known as Scholars of the House are also open to undergraduates. They are described elsewhere in this bulletin.

### THE DIVISIONAL MAJOR IN THE SCIENCES

The Divisional Majors described below are offered to degree candidates who wish to elect a broader program in the sciences than the Departmental Majors allow. The over-all program of the student shall consist of five year courses, or their equivalent, each year. Normally the student will take six year courses in the major during his last two years, not more than four being in any one field. Specific requirements for these majors are given below.

Students in these programs will take a comprehensive examination in the spring of the Senior year.

#### I. BIOCHEMISTRY

*The bachelor's degree.* This course of study is designed primarily for students who contemplate advanced work in biochemistry or in chemical aspects of biology, but may also be followed by those intending to study medicine.

The requirements for the first four terms are similar to those given under the B.A. program for chemistry, except that Biology 11 should be taken during this period. The program of study for the Junior and Senior years will include, as minimum requirements, courses in physical chemistry, biology, and biochemistry. For further information consult Mr. Harbury. See also the chart on page 27.

*The master's degree.* Students of exceptional ability can qualify for award of both bachelor's and master's degrees at the end of their Senior year. For further information consult Mr. Harbury.

#### II. MOLECULAR BIOPHYSICS

This program is designed to offer preparation in the general interdisciplinary field between biology, physics and chemistry. It is intended not only for those who plan to take graduate work in biophysics, but also has sufficient flexibility to allow emphasis toward physics, biology, or biophysical chemistry. It may serve as a pre-medical program particularly for those interested in the research aspects of medicine.

The chart on page 30 indicates the kind of program which is to be followed. The breadth of the field of study renders it likely that individual guidance in selecting courses will be necessary. For information consult Mr. Morowitz or Mr. Richards.

#### COMBINED COURSES

Students in Yale College may anticipate some of the work of the professional courses in the School of Art and Architecture and the

School of Drama. Credit is given for the work done in such courses toward both the B.A. and the B.F.A. or M.F.A. degrees. If a student elects to major, while in Yale College, in art or drama he may anticipate as much as two terms of professional work. Consult the adviser for the major concerned.

#### AWARD OF HONORS

Scholastic honors are of two kinds, general and departmental. General Honors, such as the Dean's Honor List, granted during the student's course at Yale, or *cum laude*, *magna cum laude*, and *summa cum laude* granted at graduation, are awarded on the basis of general averages in courses, and are open to all students. The degree with honors in the work of any department or program may be awarded a Senior who, in the opinion and on the recommendation of the faculty concerned, and with the concurrence of the Committee on Honors, merits such award in view of his achievement in his major field. Departmental and Divisional honors will be awarded only to those students who undertake independent work in the field of their major.

#### PRIZES

For a complete list of the numerous prizes open annually to students in Yale College, please consult the University publication *Undergraduate Prizes* or the *University Catalogue* number of the bulletin.

#### TYPICAL PATTERNS OF DEGREE PROGRAMS

The charts on the following pages illustrate typical programs of study in Yale College. Their purpose is to facilitate the planning of programs in all subjects in which majors may be taken (see p. 21). It should be realized that the charts suggest, but do not prescribe the ways in which degree requirements may be met. It is usually wise to meet these requirements as early as possible, so as to be free for electives after Sophomore year. There is, however, considerable flexibility of choice, particularly for students now enrolled whose entrance records entitled them to credits for one or more of the Distributional Requirements (see p. 13).

### TYPICAL CHARTS FOR MAJORS IN HUMANITIES AND SOCIAL SCIENCES†

#### STANDARD DEPARTMENTAL MAJOR

<i>Freshman year</i>	<i>Sophomore year</i>	<i>Junior year</i>	<i>Senior year</i>
Engl. 15*	C.C., Philos., or Rel.*	Major	Major
Foreign Lang.*	Natural Sci., Math. 20a and 22b or Foreign Lit.*	Major	Major
Hist., Hist. of Art or Music, Hist. of Sci. and Med.*		Elective	Major
Social Sci.*	Elective	Elective	Major or Related Course
	Elective		
Natural Sci.*	Elective		Elective

#### MAJOR FOR PREMEDICAL STUDENTS NOT MAJORING IN SCIENCE†

<i>Freshman year</i>	<i>Sophomore year</i>	<i>Junior year</i>	<i>Senior year</i>
Biol. or Chem. Inorganic	Chem. Inorganic or Biol.	Chem. Organic	Major
Math.	Physics	C.C., Philos., or Rel.*	Major
	Engl. 15*	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*	Major
Major			Major or Related Course
Foreign Lang.*	Elective	Elective	Elective
Social Sci.*			

\*Distributional Requirements, p. 13. For Distributional Credits see pp. 9-11. Although Mathematics 10a and 15b are not included in the Distributional Requirements, the opportunity for such a course is called to the attention of the B.A. candidate.

†See p. 41, paragraph 10, MEDICINE. It should be stressed that this diagram is a framework on which a strong program can be constructed. It is *not* intended as the prototype. It can be rearranged and strengthened to meet individual needs.

‡These charts are for the Classes of 1967, 1968, and 1969. Class of 1970 and later please refer to pp. 6-7.

For information about ROTC, see pp. 234-240.

## INTENSIVE DEPARTMENTAL MAJOR†

<i>Freshman year</i>	<i>Sophomore year</i>	<i>Junior year</i>	<i>Senior year</i>
Engl. 15*	C.C., Philos., or Rel.*	Major	Major
Foreign Lang.*	Major	Major Seminar	Major
Hist., Hist. of Art or Music, Hist. of Sci. and Med.*		Elective	Major Essay
Social Sci.*	Natural Sci., Math. 20a and 22b or Foreign Lit.*	Elective	Elective
Natural Sci.*	Elective		
	Elective		

\*Distributional Requirements, p. 13. For Distributional Credits see pp. 9-11.  
 †In history and in certain Divisional and Special Majors, five courses each in Junior and Senior year are required.

Although Mathematics 10a and 15b are not included in the Distributional Requirements, the opportunity for such a course is called to the attention of the B.A. candidate.

For information about ROTC, see pp. 234-240.

## CHARTS FOR MAJORS IN NATURAL SCIENCES AND ENGINEERING AND APPLIED SCIENCE

The charts on this and the following pages present graphically the normal four-year program in each of the scientific fields. Future candidates for medical school may find guidance here. The student is cautioned to read these charts with the stated requirements of distribution (see p. 13) clearly in mind.

## BIOCHEMISTRY

<i>Freshman year</i>	<i>Sophomore year</i>	<i>Junior year</i>	<i>Senior year</i>
Chem. 12 or 14*†	Chem. 29 and 29L	Chem. 34 and 34L	Biochem. 101a
Biol. 11†	Math. 20a and 22b	Biol.	Biochem. 102a
Math. 10a† and 15b†	Phys. 22		Biochem.
Engl. 15*†	Social Sci.*†	C.C., Philos., or Rel.*	Elective
Foreign Lang.*†	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*†	Elective	Elective or Honors
		Elective	Elective

## BIOLOGY

<i>Freshman year</i>	<i>Sophomore year</i>	<i>Junior year</i>	<i>Senior year</i>
Biol. 11*† (Biol. 20)	Biol. 20‡	Biol. 30	Biol.
Chem. 12†	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*†	Biol. 31a	Biol. §
Math. 10a† and 15b†		C.C., Philos., or Rel.*	Biol. (1 term)
Engl. 15*†	Social Sci.*†	Elective (1 term)	Elective
Foreign Lang.*†	Chem. 33 and 33L	Elective	Elective (1 term)
	Physics 12 or 22†	Elective	

\*Distributional Requirements, p. 13. For Distributional Credits see pp. 9-11.  
 †May be anticipated by excellent work in secondary school. See pp. 9-11.

In some cases, foreign language may require an additional two terms of study.

‡If Biology 20 was taken in the Freshman year, an elective may be taken here.

§One or two term courses in other fields may be taken in place of biology upon approval of the Director of Undergraduate Studies.

## CHEMISTRY

Freshman year	Sophomore year	Junior year	Senior year
Chem. 12 or 14*†	Chem. 29 and 29L	Chem. 34 and 34L	Major
Math. 10a† and 15b†	Math.	Major	Major
Phys. 14†‡	Phys. 23a and 24b† (or Phys. 22)	C.C., Philos., or Rel.*	Elective§
Foreign Lang.*†	Hist., Hist. of Art or Music; Hist. of Sci. and Med.*†	Elective§	Elective§
Engl. 15*† or Literature	Social Sci.*†	Elective§	Elective§

## ENGINEERING AND APPLIED SCIENCE

Freshman year	Sophomore year	Junior year	Senior year
Math. 10a† and 15b†	Math. 20a, and Math. 22b, or E.&A.S. 30b or other E.&A.S. courses	Major	Major
Phys. 14	Phys. 23a, and Phys. 24b, or E.&A.S. course	Major	Major
Chem. 11, 12, or 14*†	Major	Major	Major
Engl. 15*†	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*†	C.C., Philos., or Rel.*	Elective
Foreign Lang.*†	Social Sci.*†	Elective	Elective

\*Distributional Requirements, p. 13. For Distributional Credits see pp. 9-11.

†May be anticipated by excellent work in secondary school. See pp. 9-11.

In some cases, foreign language may require an additional two terms of study.

‡The two-year sequence of Physics 14, 23a, 24b is preferred, but Physics 22 will be accepted. For those electing Physics 22 a suitable curriculum will be arranged.

§For the B.S. degree, two advanced term courses in science or mathematics are required.

## GEOLOGY†

Freshman year	Sophomore year	Junior year	Senior year
Geol. 20a and 20b	Geol. 30a and 30b	Geol. 40	Geol. 90
Chem. 12 or 14†	Phys. 12 or 22	C.C., Philos., or Rel.*	Elective
Math. 10a† and 15b†	Math. 20a and 22b and Chem. 34 or Biol. 11 or 20 and Statistics and Biol. a or b elective		Elective
Engl. 15*†	Social Sci.*†	Elective	Elective
Foreign Lang.*†	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*†	Elective	Elective

## INDUSTRIAL ADMINISTRATION

Freshman year	Sophomore year	Junior year	Senior year
English 15*†	I.A. 20a and 25b	I.A. 32a and 33b	Major
Math. 10a† and 15b†	Psych. 10a and 10b	Econ. 23a, 24b and 24Lb	Major
Foreign Lang.*†	Econ. 10*	Major	Major§
Natural Sci.*†	Natural Sci., Math. 20a and 22b or Foreign Lit.*†	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*	C.C., Philos., or Rel.*
Elective	Elective	Elective	Elective

\*Distributional Requirements, p. 13. For Distributional Credits see pp. 9-11.

†May be anticipated by excellent work in secondary school. See pp. 9-11.

In some cases, foreign language may require an additional two terms of study.

‡Students are required to spend at least one summer engaged in geologic research in the field or laboratory or to take a summer field course in geology.

§Intensive Majors will be required to take only four courses in the Senior year of which two, including I.A. 91, will be in the major.

## MATHEMATICS

Freshman year	Sophomore year	Junior year	Senior year
Math. 1†, 10a† and 15b†, 15a† and 20b	Math. 20a† and 22b†, or 37	Math. Math.	Math. Math.
Natural Sci.*†	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*†	C.C., Philos., or Rel.*	Math. (or Science)
Engl. 15*†	Elective	Elective	Elective
Foreign Lang.*†	Elective	Elective	Elective
Social Sci.*†	Elective	Elective	Elective

## MOLECULAR BIOPHYSICS

Freshman year	Sophomore year	Junior year	Senior year
Foreign Lang.*†	Math. 20a and 22b	Advanced Phys., Chem., or Biol.	Molecular Biophys. 45 and 45L
Engl.*†	Phys. 22 or 25	Biol. 30	Advanced Physics Chemistry or Biology
Math. 10a† and 15b†	Social Sci.*†	Chem. 34 or Phys. 36a and 33a	Elective
Chem. 11, 12, or 14*†	Chem. 29 and 29L, or 33 and 33L	C.C., Philos., or Rel.*	Elective
Biol. 11†	Hist., Hist. of Art or Music, Hist. of Sci. and Med., etc.*†	Elective	Elective

\*Distributional Requirements, p. 13. For Distributional Credits see pp. 9-11.  
 †May be anticipated by excellent work in secondary school. See pp. 9-11.  
 In some cases, foreign language may require an additional two terms of study.  
 ‡Minimal requirements.  
 ||May be taken in Freshman year if Mathematics 20a is taken concurrently.

## PHYSICS

Freshman year	Sophomore year	Junior year	Senior year
Phys. 14†	Phys. 23a, 24b, 25 or 22§	Phys. 38a† and 34b†	Phys. 32a† and 32b† or 44†
Math. 10a† and 15b†	Math. 20a and 22b	Phys. 40†	At least 1 course each term selected from 36a, 37b, 41a, 41b, 42b, 47b, 50
Chem. 11† or 12†	Hist., Hist. of Art or Music, Hist. of Sci. and Med.*†	Phys. 31a† and 31b	C.C., Philos., or Rel.*
Engl. 15*†	Social Science*†	Math. 46a and 48b	Elective
Foreign Lang.*†	Elective	Elective	Elective

\*Distributional Requirements, p. 13. For Distributional Credits see pp. 9-11.  
 †May be anticipated by excellent work in secondary school. See pp. 9-11.  
 ‡Normally required courses for the physics major.  
 §May be elected in Freshman year if physics and mathematics background is strong.