

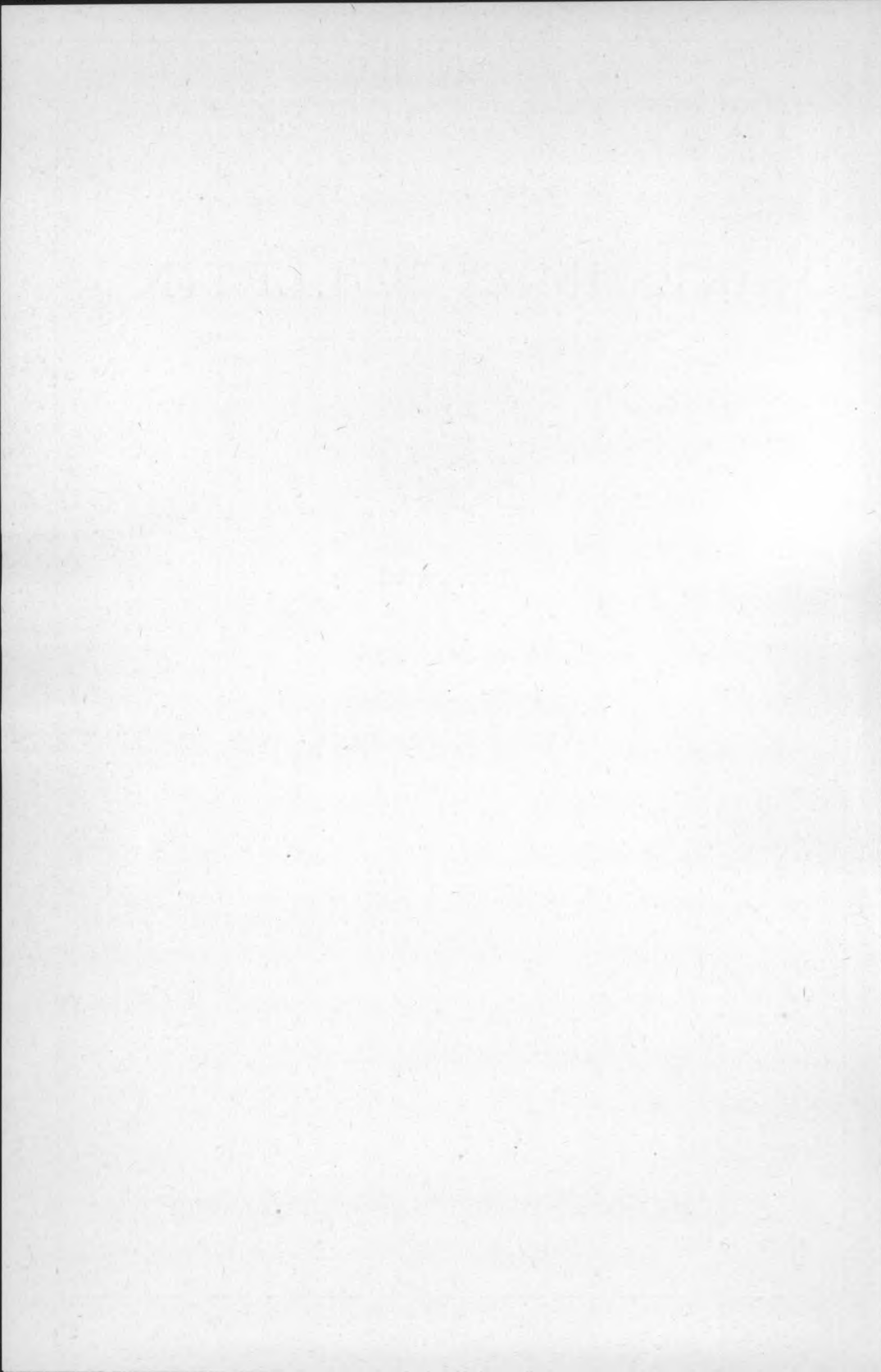
CORNELL UNIVERSITY OFFICIAL PUBLICATION

# FRESHMAN BULLETIN



Supplement  
to the  
Announcement  
of the College of  
Arts and Sciences  
for 1942-43

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THIS BULLETIN is designed to assist the incoming Freshman in understanding the requirements for graduation from the College with a Bachelor of Arts degree. In his freshman year the student should plan a course of study which will include some of the general subjects "prescribed" for graduation. It is important that these and the other courses in his program shall have been selected so as to follow his keener interests, and to expand his range of familiarity with broad fields of knowledge. Only in this way can the student make an intelligent choice of a "major" subject at the end of his freshman or during his sophomore year. The information and the description of courses open to freshmen contained in this pamphlet may suffice for the planning of a first term schedule. Reference may be made, however, to the general Announcement of the College.

### REQUIREMENTS FOR GRADUATION

(a) In order to graduate, the student must obtain credit for 120 hours of courses — at least half of them with a grade of 70 or better. At least 90 of the 120 hours of credit must be for courses given in the College of Arts and Sciences. The majority of courses in the College are offered for two or three hours' credit, and meet two or three hours per week throughout one semester in classroom sessions or in periods of two and one-half hours each week, the equivalent of one hour's credit, in laboratories.

(b) Before graduation the student must satisfy a requirement in each of four groups of "prescribed subjects", either by completing the courses as indicated below or, in some instances, by passing college credit examinations (see p. 8).

Group 1. *English*, by completing English 2 or Oral and Written Expression A, B.

Group 2. *Foreign Languages*, by completing one of the following: French 4a and 5a; French 6; German 4; German 5; Greek 2a and 2b; Italian 15; Latin 1a; Latin 1; Spanish 6; or any more advanced six-hour course in these languages.

Group 3. *History*, by completing one of the following: History 1; History 21; History 42; History 50; History 61; History 82 and 83; History 86 and 87.

Group 4. *Laboratory Science*, by completing one of the following: Astronomy 180 and 181; General Biology 1; Botany 1; Chemistry 102, or 104, or 110 and 115; Geology A; Physics 3 and 4, or 3 and 6, or 11 and 12; Zoology 1.

(c) Each student will at the end of his freshman year — and in any case not later than the end of his sophomore year — select a "major subject" (see the College Announcement, pp. 16-17). In his major he will take from twenty-four to thirty hours of courses as approved by the Department of his choice, together with fifteen to twenty-four hours of "related" courses.

(d) The student will also complete the course in Hygiene (for one hour credit in each term of the freshman year) and in Military Drill or Physical Training as prescribed by the University Faculty. These courses may not be counted in the 90 hours required in the College.

### THE FRESHMAN'S FIRST SEMESTER PROGRAM

A freshman will ordinarily register for sixteen hours of courses in his first term of residence. No student may register for more than eighteen hours in any one term except by permission of the Dean.

A new four-unit course, open to election by freshmen will be offered in 1942-43 for the benefit of students taking part in one of the Army or Navy programs, or as a part of a pre-induction preparation for military service of a general kind. There are four components of this course, three of which are required of all first-year men. It is recommended that men preparing for military service take three, if not all, of these one-hour courses in place of the usual fifth course. For a description of the courses see pp. 13-14.

Courses in satisfaction of Groups 1 and 2 of the prescribed subjects *must* be commenced in the first semester — i.e., *English 2 and a foreign language*. All of the foreign language courses offered in Group 2 require, as prerequisites, *three or four years* (units) of high school courses. Normally the freshman will continue the study of the language in which he has had at least *three units* of high school credits. If he elects in his freshman year any more elementary language course he must then subsequently take one of the Group 2 courses.

Hygiene 1 (one hour) *must* also be included in the first term schedule, as well as Military Drill (for men) and Physical Training. These are University, rather than College, requirements.

In addition to the above-mentioned courses in English, foreign language, and hygiene, the first term schedule will include three or at the most four other courses, making a total of fifteen to eighteen hours. Usually one of these courses will be a science chosen from those listed in Group 4. The student will select other courses from Group 3 of the "Prescribed subjects" (in so far as they are open to freshmen) or from other freshman courses described in the latter pages of this Bulletin.

In planning the semester's program the student has a double opportunity. He can choose courses within one or more of his present fields of interest, and he can also explore new and unfamiliar fields of knowledge. In general, the student with professional aspirations should not let them govern his choice of courses unduly in his first year in college. Students who plan to major in music or who may wish later to consider the possibility of such a major should register for Music 1 in the first semester of the freshman year. The student who plans to prepare for public school teaching, medicine, law, business or nursing, may be guided by the suggestions in the following sections.

## THE TEACHER TRAINING PROGRAM

The professional preparation to teach academic subjects may be combined with work in the teaching field and with other prescriptions in satisfaction of the requirements of graduation in the College. Modifications in the regular program may be made to satisfy certification requirements in states other than New York.

Programs for students intending to teach in secondary schools have been arranged in English and public speaking, in foreign languages, in social studies, and in science and mathematics. Freshmen should seek advice early regarding teaching opportunities in these subjects, combinations of subjects usually required of teachers, the choice of a major subject, and the required and related courses in the major and related subjects.

Most beginning teachers are expected to teach at least two subjects. The more frequent combinations include Latin and French; social studies combined with English, French, or Latin in the order indicated; English com-

bined with history, French, or Latin; science (both physical and biological science) and mathematics; mathematics combined with one or more branches of science. Occasionally there is opportunity to teach German, usually in combination with English, French, or Latin. There seems to be an increasing interest in the study of Spanish in the schools. Students doing major work in economics or government will have little or no chance to teach these subjects except as they are included in the social studies, for which the basic preparation is history.

In order that the requirements may be easily met in certain fields and combinations of subjects, the following suggestions are made for the first year of residence:

GENERAL REQUIREMENT (all teachers): Social Science A and B.

SOCIAL STUDIES: A course in History.

SCIENCE AND MATHEMATICS: A suitable combination of the introductory courses in these fields depending on the major interest.

FRENCH AND LATIN: The appropriate freshman courses in both languages.

FOR OTHER COMBINATIONS: The second subject should be begun not later than the sophomore year.

Questions relating to teacher training may be directed to Associate Professor M. L. Hulse, 251 Goldwin Smith Hall, Ithaca, New York, and, on registration day, to members of the Advisory Board representing the various fields of concentration. All freshmen planning to teach are requested to confer with Dr. Hulse early in the first term of residence.

### PRE-MEDICAL STUDENTS

Freshmen in the College of Arts and Sciences who plan to enter a medical school should state their intentions when registering or as soon as possible thereafter.

There is no "Pre-medical Course." Pre-medical students must meet the usual requirements prescribed for students in the College of Arts and Sciences and, in addition, fulfill the minimum entrance requirements of the medical school they intend to enter. Pre-medical students will be assisted in the arrangement of suitable schedules by a staff of underclass and upper-class advisers who cooperate with the Advisory Committee for Pre-medical students. This Committee has been set up in the College of Arts and Sciences to guide pre-medical students throughout their period of residence, to confer with them as often as may be desirable, and to facilitate their relations with the medical schools of the country. All students interested in the study of medicine are expected to make an appointment with Associate Professor V. S. Lawrence, jr. (White Hall, Room 124), Chairman of the Advisory Committee for Pre-medical Students, early in their first term of residence.

Medical schools urge students preparing for medicine to avoid anticipating courses which must be taken later in the medical curriculum. In general, it is possible for a pre-medical student to major in any field, provided he meets the minimum requirements for entrance to medical college. His choice of a major subject should be determined by his own interests. Undue specialization should be avoided; broad training in the English language and literature, foreign languages, the social sciences, and fundamental



courses in biology, chemistry, and physics should be stressed. A typical schedule for the first year will include courses in English, a foreign language, chemistry, zoology, and if possible a course in history or mathematics.

### PRE-LEGAL STUDENTS

Despite many attempts, judges, lawyers and law teachers have not been able to agree upon a pre-legal curriculum. Therefore most law schools, including Cornell's, do not prescribe one. Notwithstanding lack of agreement upon an entire pre-legal curriculum, there is virtual unanimity with respect to the importance to every lawyer of accounting, English composition, and public speaking. The membership of law in the family of the social sciences, and the lawyer's need to understand this relationship, move many to emphasize the advisability of work in economics, government, history, and sociology, as well as in the subjects of philosophy and psychology. Some knowledge of physiology, chemistry and physics will doubtless prove of practical value. As law touches nearly every phase of human activity, there is no subject which can be summarily excluded as without value to the pre-legal student. The prospective lawyer is entitled to take into account his special personal interests in particular fields of knowledge. Scholarly work is an essential part of pre-legal preparation; and interest begets scholarship.

All pre-legal students are invited to consult with the members of the Law Faculty at any stage of their college course as to their election of subjects, and in regard to any other matters pertinent to the legal career. Students taking the six-year combined Arts-Law course who are planning to enter the Law School upon completion of their work in this College, should also confer with the Secretary of the Law School not later than their sophomore year. Appointments with any member of the Law Faculty or with the Secretary may be made by telephoning the Secretary's Office in Myron Taylor Hall.

### PREPARATION FOR BUSINESS

To the many students who expect ultimately to seek employment in business, it should perhaps be explained that there is in this College no "commerce" or "business" course. There is, however, ample opportunity for training in the social studies which in content are similar to, but in emphasis differ from, the curricula of schools of business administration. The freshman with business as his general objective may reasonably select courses in government, history, mathematics, philosophy and social science. Courses in economics (including statistics) are not open to freshmen.

### PREPARATION FOR NURSING

By special arrangement with the Cornell University-New York Hospital School of Nursing, a Bachelor of Science degree and a Diploma in Nursing are conferred upon satisfactory completion of the five-year course. During the two years which the student spends in the College of Arts and Sciences her program should include basic courses in Biology or Zoology, General Chemistry or Inorganic and Organic Chemistry, and the Social Studies. Electives should be so chosen as to avoid undue specialization. Subjects which are included in the three-year course in the School of Nursing should not be selected, with the exception of Chemistry and Psychology.

Students interested in nursing as a career will be assigned to Professor

F. G. Marcham as adviser. A representative of the School of Nursing will come to the campus early in the first term for conferences with prospective applicants. Appointments for interviews in New York City may be made by addressing the Director, Cornell University-New York Hospital School of Nursing, 525 East 68th Street.

### COMBINED COURSES

Arrangements may be made to secure both the Bachelor of Arts degree and an Engineering degree by taking a six-year course. Students interested in this program should consult Professor H. E. Howe in Barton Hall at registration.

A six-year course has also been planned which leads to the degrees Bachelor of Arts and Master of Fine Arts. The major work during the first four years will be in the History of Art and in the theory and practice of Drawing, Painting, and Sculpture. The last two years will be devoted to an intensive study of the practice of painting or sculpture, designed to fit the student for a professional career. Students interested in this course should consult Associate Professor Waag  in Barton Hall at registration.

### ADVISORY SYSTEM

During his first two years in the College, the student is under the jurisdiction of the Advisory Board for Underclassmen. At registration in Barton Hall the student will be assigned to a member of this Board, who will review and approve the schedule of courses the student proposes to take during his first term and who will serve as his adviser until he elects a major subject. The freshman should consult with his faculty adviser as frequently as he feels the need of friendly counsel. When, at the end of his freshman year or during his sophomore year, the student selects the subject in which he wishes to do his major work, he will choose an adviser from the faculty of that Department.

After the student, with the aid of his adviser, has completed his first semester schedule, and filed it at the Office of the Dean, he is allowed to make changes in the schedule with his adviser's approval without penalty for a period of ten days. After the lapse of ten days, a student may cancel a course or add a new one only with the permission of the Dean. All other cancellations are unauthorized and result in a grade of "Z" being given for the course.

To be continued in good standing, the student must pass twelve hours each term with a grade of 70 or better in at least six hours. If he does not meet this minimum standard, his case will be reviewed by the Advisory Board or (after he has passed sixty hours of courses) by the Committee on Academic Records. Ordinarily such students are either placed on probation or dropped from the College. The system of grades used, and the regulations governing the "making up" of "incomplete" or "absent" grades, is described on page 19 of the Announcement of the College.

### COMMITTEE ON STUDENT WAR SERVICE

Students in the College of Arts and Sciences with questions about Selective Service, the various enlistments for pre-induction training that are open

to college students, or other matters growing out of the war that affect them may obtain information and receive counseling from members of the University Committee on Student War Service. This committee is responsible for the handling of all student problems pertaining to the war situation. It has gathered information about the need for men and women in war industries, civil service, and the armed forces and the appropriate training that is available. Assistant Dean R. P. Sibley and Assistant Professor J. C. Adams are members of the committee for general students in the College of Arts and Sciences, Professor R. C. Gibbs for Physics, Professor A. W. Laubengayer for Chemistry, and Assistant Professor L. L. Barnes for pre-medical students serve those specializing groups. The main office of the committee, of which Professor A. W. Gibson is chairman, is 201 Tower Road.

## CREDIT EXAMINATIONS

The College offers several arrangements whereby freshmen may obtain college credit in various subjects *on examination* rather than by enrollment in courses.

1. If the freshman offers more high school units than the minimum required for entrance, he may take a college-credit examination in the excess subject or subjects. These examinations will cover substantially the same ground as the University courses in the corresponding subjects. The student, on passing such an examination, is granted credits toward his degree equivalent to those of the corresponding University course. An applicant who desires a college-credit examination of this kind must apply to the Office of Admissions as early as possible and in no case later than the day preceding the beginning of the entrance examinations, specifying which fifteen units he intends to offer in satisfaction of the entrance requirements, and upon what other entrance subjects he wishes to be examined for college credit.

In case he fails to satisfy the entrance requirements in any one or more of the subjects which he has offered for entrance, but passes the college-credit examination in any other subject or subjects, he may use the latter for satisfying the entrance requirements, but in that case he cannot also receive college credit therefor. The college-credit examinations will be held on the dates set for the entrance examinations in the same subjects, and, unless otherwise arranged, only at Ithaca. This year the examinations take place on Sept. 9 and 10.

To freshmen in the College of Arts and Sciences these college-credit examinations are open at the end of their first term as well as at entrance. Moreover freshmen of this College may take college-credit examinations in subjects for which no entrance credits have been offered, provided they furnish the department concerned with evidence of preparation warranting the examination.

2. In addition, selected freshmen, at the end of the *first* term, may take a special credit examination (covering the second term's work) in a course in which they are registered, to give them a *full year's* credit in the course. These examinations are limited to students whose work in the first term has been of high standing, as defined by the department concerned. Many of the courses open to freshmen offer this privilege.



## COURSES OPEN TO FRESHMEN

The courses open to freshmen are described in the following pages under two headings: I. Courses that satisfy the requirements in "prescribed subjects" (see p. 3). II. Other courses. Courses regularly open to freshmen in other colleges of the University (described in their Announcements) may be taken by freshmen in this College on the approval of the Dean and of the professor in charge of the course.

### I. COURSES SATISFYING THE REQUIREMENTS IN PRESCRIBED SUBJECTS

#### GROUP 1. ENGLISH

2. **Introductory Course in Reading and Writing.** Throughout the year. Credit three hours a term. MESSRS. ADAMS, ANDERSON, BARKER, CURTIN, DUFFY, ELLEDGE, HOPPE, IRWIN, KELLOGG, SALE, SIBLEY, WARDLE, WEIR, WILSON, and others. M W F 8, 9, 10, 11, 12; T Th S 8, 9, 10, 11, 12. Rooms to be announced.

The aim of the course is to increase the student's ability to communicate his own thought and to understand the thought of others. The first term will be devoted primarily to the study of good diction, effective sentences, and the logic of paragraphs, the second to whole compositions. Assignment to sections will be made in *Barton Hall* the first term, and in *Goldwin Smith C* the second. Mr. BROWN is in charge of the course.

Sections will be arranged for a limited number of students of more than average ability, especially those who expect to major in one of the humanities.

With the written recommendation of his freshman instructor, a freshman may be admitted to English 20 in the second term in place of the second term of English 2. With similar recommendation and the consent of the sophomore instructor concerned, a freshman may elect English 22 or 23 in the second term, in addition to the second term of English 2.

Freshmen who elect Social Science A, B may substitute for English 2 the inter-departmental course, **Oral and Written Expression.**

2a. **Introductory Course in Composition and Literature.** Second term. A repetition of the first term of English 2. T Th S 8. *Goldwin Smith A.*

2b. **Introductory Course in Composition and Literature.** First term. A repetition of the second term of English 2. May be entered by those who have passed the work of the first term. T Th S 8. *Goldwin Smith 134.*

**A, B. Oral and Written Expression.** Throughout the year. Credit three hours a term. Open only to freshmen who are taking Introduction to Social Science A, B. MESSRS. JONES, WICHELNS, and IRWIN. M W F 8, 9; T Th S 9. Rooms to be announced.

Training in reading, writing, and speaking. The greater part of the exercises will develop subjects drawn from assigned essays, from current events, and from Introduction to Social Science A, B. Students who pass the course will have satisfied group I of the prescribed subjects and may elect sophomore courses in English and courses in Public Speaking which follow Public Speaking I.

#### GROUP 2. FOREIGN LANGUAGES

The courses described below require as a prerequisite the equivalent of either three or four entrance units as indicated in the table. A student who has not taken in high school at least three years of the language he wishes to continue studying must first take one of the more elementary courses listed on pp. 14-15.

##### *Years of Study in High School as Prerequisite*

French	4a, 5a	3
"	4b, 5b	4
"	6	3
"	16	4
German	4	3
"	5	3

##### *Years of Study in High School as Prerequisite*

Greek	2a	3
"	2b	4
Latin	1a	3
"	1	4
Spanish	6	3

## French:

*For students who have had three years of French in high school:*

4a. **Reading of French.** Repeated in second term. Credit three hours. Prerequisite, French 3a, or third year entrance French. First term: M W F 9, 12. Second term: M W F 10, 12.

Translation and rapid reading.

For the satisfaction of the Prescribed Subjects, must be taken with or subsequent to French 5a. Courses 4a and 5a together are roughly equivalent to course 6, and should be taken by students planning to continue the study of French.

5a. **Written and Spoken French.** Repeated in second term. Credit three hours. Prerequisite, French 3a, or third year entrance French. First term: M W F 11, T Th S 9. Second term: M W F 9, T Th S 10.

6. **Freshman French: Reading and Composition.** Throughout the year. Credit three hours a term. Prerequisite, French 3a, or third year entrance French. Designed primarily for the satisfaction of the Prescribed Subjects in foreign languages. M W F 8, 9, 10, 11, 12; T Th S 9, 10.

*For students who have had four years of French in high school:*

4b. **Reading of French.** Second term. Credit two hours. Prerequisite, French 4a, or fourth year entrance French. T Th 11.

Designed to inculcate an extensive and exact reading knowledge of the language.

5b. **Written and Spoken French.** Repeated in second term. Credit three hours. Prerequisite, fourth year entrance French, or French 5a or 6. First term: M W F 9, T Th S 10. Second term: T Th S 9, 10. This course is prerequisite to French 5c, given in the second term and open to freshmen.

5c. **Written and Spoken French.** Second term. Credit three hours. Prerequisite, French 5b. T Th S 10.

16. **History of French Literature.** Throughout the year. Credit three hours a term. Prerequisite, fourth year entrance French, French 4a, or French 6. Mr. MASON. M W F 11. *Goldwin Smith B.*

Lectures on French literature since the Middle Ages.

## German:

*For students who have had three years of German in high school:*

4. **Elementary German Composition and Conversation.** Throughout the year. Credit three hours a term. Open to those who are taking or have taken German 3, or its equivalent. Messrs. POPE and MUELLER. M W F 9, 12. *Goldwin Smith 183.*

Exercises conducted in German. Course 4 may be combined with courses 3 or 5.

5. **Modern German Texts.** Throughout the year. Credit three hours a term. Prerequisite, German 3, or its equivalent. Messrs. ANDREWS and MUELLER. T Th S 11, 12. *Goldwin Smith 190, 183.*

Extensive reading and discussion.

*Students who have had four years of German in high school may register for course 10. For a description of this course see the College Announcement.*

## Greek:

2a. **Attic Greek.** Xenophon: Anabasis; Plato: Selected Dialogues. Repeated in second term. Credit three hours. Prerequisite, Greek 1b. Mr. ———. M W F 11. *Goldwin Smith 124.*

2b. **Euripides: Iphigenia in Tauris, and Alcestis; New Testament: Selections.** Repeated in second term. Credit three hours. Prerequisite, Greek 2a. Mr. ———. T Th S 10. *Goldwin Smith 120.*

## Latin:

1a. **Freshman Course.** For Students Offering Three Units of Entrance Latin. Throughout the year. Credit three hours a term. Section 1, M W F 10. Mr. SOLMSEN. *Goldwin Smith 120.* Section 2, T Th S 10. Mr. WARD. *Goldwin Smith 128.* Ovid; Virgil; Horace: Odes and Epodes.

1. **Freshman Course.** For Students Offering Four Units of Entrance Latin. Throughout the year. Credit three hours a term. Section 1, M W F 10. Mr. HUTTON. *Goldwin Smith 128.* Section 2, M W F 11. Mr. CAPLAN. *Goldwin Smith 120.* Cicero: De Senectute; Martial: Epigrams; Horace: Odes and Epodes.

### Spanish:

6. **Freshman Spanish.** Translation and composition. Throughout the year. Credit three hours a term. Prerequisite, Spanish 3, or third year entrance Spanish. M W F 9, T Th S 12.

*Students who have had four years of Spanish in high school may register for course 7a, followed in the second term by course 7b. For descriptions of these courses see the College Announcement.*

## GROUP 3. HISTORY

Of the history courses which may be taken in satisfaction of the requirement in Group 3 (see p. 3), only those described below are open to freshmen.

1. **Outlines of Ancient History.** The Near Eastern Countries, Greece, and Rome to A.D. 337. Throughout the year. Credit three hours a term. First term prerequisite to second. Mr. LAISTNER. M W F 9. *Boardman* 322.

Textbook, lectures, and collateral reading.

21. **Medieval History.** Throughout the year. Credit three hours a term. First term prerequisite to second. Mr. STEPHENSON. M W F 10. *Goldwin Smith* A. Quiz selections will normally take the place of the third hour. Fee for materials, 50 cents.

A general survey of Europe from the fourth to the fifteenth century. Lectures and discussion of text, with outside reading and map work.

61. **English History.** Throughout the year. Credit three hours a term. First term prerequisite to second. Mr. MARCHAM. T Th S 10. *Boardman* 110. Enrollment limited.

A survey of English history from the Anglo-Saxon invasions to the present.

## GROUP 4. LABORATORY SCIENCES

### Astronomy:

180. **Introduction to Astronomy.** First term. Credit three hours. Lectures and recitations, T Th 9. *Rockefeller* C. One two-hour laboratory or observation period a week to be arranged. Mr. SHAW.

This course is designed to give the student an understanding of the fundamentals of Astronomy. Emphasis will be placed on the astronomy of the solar system and on the contributions of Astronomy to the sciences, philosophy, and general culture. Ample opportunity for observation of the celestial bodies with the great telescope and for constellation study will be offered.

181. **Introduction to Astronomy.** Second term. Credit three hours. Prerequisite, Astronomy 180. Lectures and recitations, T Th 9. *Rockefeller* C. Laboratory period to be arranged. Mr. SHAW.

A continuation of course 180 with emphasis on the astronomy of the sidereal universe. Laboratory work deals largely with observation of the moon and planets and the nature of their orbits and motions.

### Biology:

1. **General Biology.** Throughout the year. Credit three hours a term; both terms of the course must be completed to obtain credit, unless the student is excused by the department. First term not prerequisite to second. Not open to students who have had both Zoology 1 and Botany 1. If Biology 1 is taken after either Zoology 1 or Botany 1, credit two hours a term. Lectures and demonstrations, M W 9 or 11. *Roberts* 392. One laboratory a week, M T W Th or F 1:40-4. *Roberts* 301 and 302. Mr. Hood, Mr. NEVIN, and assistants.

An elementary course planned to meet the needs of students majoring outside of the plant and animal sciences; particularly adapted as the first year of a two-year sequence in biology for the prospective teacher of general science in the secondary schools. The course deals with the nature of life, life processes, the activities and origin of living things. It covers the organization of representative plants and animals, including man as an organism, and the principles of nutrition, growth, behavior, reproduction, heredity, and evolution. Fee, \$3.50 a term.

### Botany:

1. **General Botany.** Throughout the year. Credit three hours a term. If taken after General Biology 1, credit two hours a term. Mr. PETRY, instructors, and assist-

ants. Lectures, T Th 9 or 11. *Plant Science* 233. Laboratory, one period of two and one-half hours. *Plant Science* 240, 242, and 262.

A survey of the fundamental facts and principles of plant life. The work of the first term deals with the structures and functions of the higher plants, with special emphasis on their nutrition. The work of the second term traces the evolution of the plant kingdom, as illustrated by representatives of the principal groups, and concludes with a brief introduction to the principles of classification of the flowering plants. Laboratory fee, \$3.50 a term.

### Chemistry:

102. **General Chemistry.** Throughout the year. Credit three hours a term. First term prerequisite to second. Open only to those students who do not offer entrance chemistry. Deposit, \$11 each term. Mr. BROWNE, Mr. LAUBENGAYER, Mr. TAUBE, and assistants. Lecture: Th or F 11, Main Lecture Room, *Baker*. Recitation: one hour a week, to be arranged. Laboratory: M T W Th or F 1:40-4.

This course deals with the fundamental laws and theories of chemistry and the properties of the more common elements and their compounds.

104. **General Chemistry.** Throughout the year. Credit three hours a term. First term prerequisite to second. Open to those students who offer entrance chemistry. Deposit, \$11 each term. Mr. PAPISH, Mr. EATON, and assistants. Lecture: M 11, T 9 or T 11, Main Lecture Room, *Baker*. Recitation: one hour a week, to be arranged. Laboratory: M T W Th or F 1:40-4.

This course deals with the fundamental laws and theories of chemistry and the properties of the more common elements and their compounds.

110. **Introductory Inorganic Chemistry.** Throughout the year. Credit three hours first term, two hours second term. Prerequisite, entrance credit in chemistry, or course 102. Required of candidates for the degree of B. Chem. Eng., and recommended for candidates for the degree of A.B. who intend to major in Chemistry.

Lectures: Mr. LAUBENGAYER. First term, M W F 8; second term, W F 8. *Baker* 107.

115. **Introductory Inorganic Chemistry.** Recitations and laboratory practice. First term. Credit three hours. Must be taken with the first term of Chemistry 110. Deposit, \$20. Mr. LAUBENGAYER and assistants.

Recitations: one hour a week, to be arranged.

Laboratory: W F 10-12:30. S 8-1. *Baker* 50.

### Geology:

A. **General Geology and Physiography.** Introduction to Earth Science. Throughout the year. Credit three hours a term. Mr. VON ENGELN and Messrs. CHISNELL and PITZRICK. Lectures, T Th 11. *McGraw*. Laboratory, M W Th or F afternoons, 1:40. *McGraw*. Laboratory fee, including field trips, \$3 a term.

Students must register for laboratory assignments. The course comprises an introduction to the various branches of geological science, lithologic, physiographic, structural, glacial, economic, and historic. Methods of geological and physiographic study in the field and laboratory are emphasized.

### Physics:

3. **Introductory Experimental Physics.** First term. Credit three hours. Demonstration lectures. M F 9 or 11. *Rockefeller* A. Mr. HOWE. One laboratory period a week, as arranged. *Rockefeller* 220. Laboratory fee, \$5. One recitation period a week, as arranged, required of students who do not offer entrance physics, but open to others. Messrs. HOWE, BACHER, BOCK, CONNELLY, CURTIN, HAZZARD, JONES, MEIJER, and RAUB.

Mechanics, properties of matter, sound, and heat.

4. **Introductory Experimental Physics.** Second term. Credit three hours. (See also course 6.) A continuation of course 3. Prerequisite, course 3 or entrance physics. Lectures, M F 9 or 11. Laboratory fee, \$5.

Electricity, magnetism, and light.

6. **Introductory Experimental Physics.** Second term. Credit four hours. Prerequisites, course 3 and the approval of the instructor. Registration limited. Demonstration lectures, M F 9 or 11, same as in course 4. Two recitations, T Th 10 or 11, or as arranged. Mr. GIBBS. One laboratory period, as arranged. Laboratory fee, \$5. Staff as in course 4.



A treatment of the topics of electricity, magnetism, and light more extended than that given in course 4.

**11. Introductory Experimental Physics.** First term. Credit four hours. Pre-requisite, Calculus or simultaneous registration in Mathematics 55a, 60a or 65b. Entrance physics desirable but not required.

Lectures, Mr. GRANTHAM. T Th 10 or 12. *Rockefeller A.* Two recitations and one laboratory period a week to be arranged. Laboratory fee, \$5. Messrs. GRANTHAM, BEER, CARLSON, COOPER, DART, EHRLICH, EILERS, JOSSEM, KRUMHANS, KURSHAN, LANCE, MONROE, ODELL, OLIVER, NEWHALL, PILSWORTH, STEPHENSON, and WARFIELD.

Demonstrations, theory, problems, and experiments covering the subjects of mechanics, wave motion, sound, and heat.

Courses 11 and 12 are required of students in Engineering.

**12. Introductory Experimental Physics.** Second term. Credit four hours. Pre-requisite, same as in Physics 11. A continuation of Course 11. May be taken before Course 11. Laboratory fee, \$5.

Electricity, magnetism, and light.

### **Zoology:**

**1. Introductory Zoology.** Throughout the year. Credit three hours a term. If taken after General Biology 1, credit two hours a term. Messrs. YOUNG and LEONARD, Miss MEKEEL, and assistants. Lectures: T Th 9 or 11. Laboratory, M T W Th F 1:40-4; T W F 10-12:30; S 8-10:20. Lectures, *Stimson G-25*. Laboratory, *Stimson 102, 104, 116*.

First term: a survey of invertebrate animals. Consideration of how each of the different body plants possessed by animals without backbones provides for the essential life activities. Also a discussion of the phylogenetic relationships existing between such groups of animals.

Second term: a survey of the anatomy and physiology of the vertebrate organ systems, biological principles, and evolution. Laboratory fee, \$3 a term.

## **II. OTHER COURSES OPEN TO FRESHMEN**

### **SPECIAL PRE-INDUCTION COURSE**

Of the following courses the first three are required of first-year men. The last two are open to election by both men and women.

**1. Military Science and Tactics. Basic Course.** Throughout the year. Credit one hour a term. Either M T W Th or F 1:40-4:10 p.m. *Barton Hall*.

The course of training is that prescribed by the War Department for Senior Division Units of the Reserve Officers' Training Corps for basic students. Instruction is offered in Field Artillery. For details concerning the course see the Announcement of the Department of Military Science and Tactics.

Required of all able-bodied first and second year male students of the College of Arts and Sciences who are American citizens and candidates for a baccalaureate degree. The requirements of Military Science and Tactics must be completed in the first terms of residence; otherwise the student will not be permitted to register again in the University without the consent of the faculty.

Advanced standing. With the approval of the Department of Military Science and Tactics, credit may be allowed a student for all or part of the Basic Course requirement, upon presentation of evidence of satisfactory work completed at an approved institution.

**1. Physical Training for Men.** Throughout the year. Credit one hour a term. Hours to be arranged at registration.

**1. Hygiene.** First term. Required of all freshmen. Credit one hour. One lecture-recitation a week, with preliminary examination and final.

For students contemplating military service there will be special sections which will emphasize the personal hygiene of the man in military service, field sanitation and first aid. Five evening periods in first aid practice are required.

Students must report for registration and assignments to sections in *Barton Hall*.

**2. Hygiene.** Second term. Required of all freshmen. Credit one hour. One lecture-recitation each week, with preliminary examination and final. The use of a text-book will be required. One section of Hygiene 2 will be given in the first term.



For those students contemplating entering military service there will be special sections provided. In these sections military hygiene will replace much of the community hygiene and five actual hours of First Aid work will be required each term in evening periods.

Students must report for registration and assignment to section at the *Old Armory*.

**201. Military and Naval Geography.** First term. Credit one hour. W 12. Mr. VON ENGELN. *McGraw*.

Designed to acquaint the student with geographical factors and data that may have significance for the military and naval effort of the United States in the World War.

**Naval and Military History.** Second Term. Credit one hour. Hour to be arranged. Mr. DE KIEWIET.

A survey of the principal changes in weapons and the materials of war since the invention of gunpowder; the relationship between weapons and technical equipment, and the offensive and defensive conduct of war; the recruitment and composition of armies and navies since the seventeenth century; the problem of the relationship between warfare and politics; the effect of the industrial and scientific revolution on modern warfare; some leading battles from Breitenfeld (1631) to the great battles of the first and second world war. The emphasis will be upon both naval and military history.

## FINE ARTS

**1a. History of Painting and Sculpture: Ancient and Medieval.** First term. Credit three hours. Mr. WAAGÉ. All students must register for this course with Mr. WAAGÉ or Mr. FINLAYSON on registration day, freshmen at *Barton Hall*, upperclassmen at *White Hall* 304. M W F 2. *Goldwin Smith, Museum of Casts*.

**1b. History of Painting and Sculpture: Renaissance and Modern.** Second term. Credit three hours. Mr. FINLAYSON. Register with Mr. FINLAYSON at 304 *White*. M W F 2. *White* 201.

**10a. History of Architecture: Ancient and Medieval.** First term. Credit three hours. Mr. UNDERWOOD. Open to freshmen with the permission of the instructor. M W F 9. *Goldwin Smith, Museum of Casts*.

**10b. History of Architecture: Renaissance and Modern.** Second term. Credit three hours. Mr. UNDERWOOD. A continuation of 10a. M W F 9. *Goldwin Smith, Museum of Casts*.

**Elementary Drawing and Painting.** (See Architecture 309). Throughout the year. Credit three hours each term. M 3, *White* 201, and two of the following: T Th 10-12; 30, W F 1:40-4. *Morse Hall Gallery*. The beginning course for all students except architects and landscape architects. An introduction to the principles and methods of decorative and pictorial design and of representational drawing and painting, using various media. The principles of color harmony and of the pictorial use of color. Discussion of historical and contemporary examples, lectures, readings, examinations, and analytical and creative exercises in the studio. Fee, \$3.

## FOREIGN LANGUAGES

The following courses do *not* satisfy the graduation requirement of one year of a foreign language (see p. 3, and the courses described on pp. 9-11). Their prerequisites in high school preparation are summarized in the table.

### Years of Study in High School as Prerequisite

French	1 (1st term)	0
"	1 (2nd term)	1
"	3a	2
German	1	0-1
"	1a (1st term)	0
"	1a (2nd term)	1
"	3	2
"	3a	2
"	8	3

### Years of Study in High School as Prerequisite

Greek	1a	0
"	1b	1
"	5	3
Italian	1	0
Italian	5	2
Latin	2	3
Spanish	1 (1st term)	0
"	1b (2nd term)	1
"	3a	2

### French:

**1. First Course for Beginners.** Throughout the year. Credit three hours a term. M W F 12, T Th S 9.

Students with first-year entrance French should enter the course the second term.

3a. **Second Course.** Throughout the year. Credit three hours a term. Prerequisite, French I, or second year entrance French. M W F 10, 11, T Th S 9.

**German:**

1a. **Course for Beginners: Oral Training, Grammar, Composition, Translation.** Throughout the year. Credit three hours a term. Messrs. POPE, ANDREWS, LANGE, and MUELLER. M W F 8, 9, 10, 11; T Th S 9. *Goldwin Smith* 190, 177, 183, 190, 183.

This course is equivalent to first and second year German of the entrance requirements (credit two units). It may be elected in the second term by students who have had first year German (one unit).

3. **Intermediate Course, Oral Training, Grammar, Composition, Translation.** Second term. Credit five hours. Prerequisite, German I, 1a, or entrance credit for two units of German (first and second year German). Mr. SCHNEIDER. M T W Th F 10. *Goldwin Smith* 177.

This course is equivalent to third year German of the entrance requirements.

3a. **Intermediate Course, Oral Training, Grammar, Composition, Translation.** Throughout the year. Credit three hours a term. Prerequisite, German I, 1a, or entrance credit for two units of German (first and second year German). Messrs. LANGE and SCHNEIDER. M W F 9, 10; T Th S 10. *Goldwin Smith* 190, 190, 190.

This course is equivalent to third year German of the entrance requirements.

8. **Scientific German.** Second term. Credit three hours. Prerequisite, German I-3, or three years of German in high school. Mr. ANDREWS. T Th S 11. *Goldwin Smith* 183.

**Greek:**

1a. **Greek for Beginners.** Introduction to Homer's Iliad. Repeated in second term. Credit three hours. Mr. CAPLAN. M W F 12. *Goldwin Smith* 124.

1b. **Homer's Iliad.** Continuation of Greek 1a. Repeated in second term. Credit three hours. Prerequisite, Greek 1a. Mr. SOLMSEN. M W F 12. *Goldwin Smith* 120.

5. **Greek Composition.** Throughout the year. Credit one hour. Prerequisite, Greek 1b or its equivalent. Mr. ———. T 2. *Goldwin Smith* 124.

**Italian:**

1. **Elementary Course.** Throughout the year. Credit three hours a term. Mr. BERGIN. M W F 9. *Goldwin Smith* 277.

5. **Second year Italian.** Throughout the year. Credit three hours a term. Prerequisite, Italian I or its equivalent. Mr. BERGIN. T Th S 9. *Goldwin Smith* 281.

Reading of modern texts, and practice in the written and spoken language.

**Latin:**

2. **Sight Translation.** Throughout the year. Credit one hour a term. Mr. WARD. Section 1, T 11. *Goldwin Smith* 124. Section 2, W 9. *Goldwin Smith* 120. Mr. WARD.

**Spanish:**

1. **First Course for Beginners.** Throughout the year. Credit three hours a term. M W F 8, 12, T Th S 8, 10.

Students entering the University with one unit in Spanish should take the second term of Course 1.

1b. **First Course for Beginners.** (Second half of the course). First term. Credit three hours. T Th S 11.

This course is the same as the second term of Course 1.

3. **Second Course.** Throughout the year. Credit three hours a term. Prerequisite, Spanish I, or second year entrance Spanish. Mr. HINCHLIFF. M W F 10, T Th S 9.

3b. **Second Course.** (Second half of the course). First term. Credit three hours. T Th S 11.

This course is the same as the second term of Course 3.

8. **Spoken Spanish.** Throughout the year. Credit one hour a term. Discussion of assigned topics. Prerequisite, consent of the instructor. Mr. DALE. W 4: 15. *Goldwin Smith* 248.

## GOVERNMENT

1. **American National Government.** First term. Credit three hours. Mr. CUSHMAN. Lectures, T Th 9. Quiz hours to be arranged. *Goldwin Smith A.*  
American national government, its historical development, organization, powers, and practical working. Attention will be given to governmental problems arising from the war.

3. **State and Local Government.** Second term. Credit three hours. Open to students who have credit for Government 1 and to others with the consent of the instructor. Mr. HUZAR. T Th 9. Quiz hours to be arranged. *Boardman 122.*

American state and local government, their historical development, organization, powers, and practical working.

## MATHEMATICS

1. **Elementary Concepts of Mathematics.** Throughout the year. Credit three hours each term. First term, M W F 8, T Th S 10. Second term, M W F 8.

This course is intended primarily for students who are not planning to continue the study of mathematics. Primary emphasis will be placed on the fundamental ideas common to all mathematics rather than on the technique of any one part of the subject. The student will be encouraged to apply the logical processes of mathematics to problems arising in every day experience. Extensive skill in the manipulation of mathematical symbols will not be emphasized. Although this course cannot be used as a prerequisite for courses in Analytic Geometry and Calculus, a student who has passed it with sufficiently high credit should have no difficulty in passing the qualifying examination in algebra for admission to Mathematics 65a.

5. **Solid Geometry.** Either term. Credit three hours except for students offering Solid Geometry for entrance. First term, M W F 8. Second term, M W F 10.

10. **College Algebra.** Either term. Credit three hours. M W F 9, T Th S 9.

15. **Plane Trigonometry.** Either term. Credit three hours except for students offering Trigonometry for entrance. First term, M W F 10, T Th S 8. Second term, M W F 8, T Th S 10.

16. **Spherical Trigonometry and Map Projections.** Either term. Credit three hours. First term, M W F 10. Second term, T Th S 10.

Designed primarily for students planning to enter war services.

55a, 55b. **Analytic Geometry and Calculus.** Primarily for students in the College of Engineering; the prerequisites for such students are Mathematics 15, and Mathematics 5 or 10, or the equivalent. For students in the College of Arts and Sciences the prerequisites for Mathematics 55a are the same as those stated below for Mathematics 65a.

55a. Daily except S. Credit five hours. Either term.

55b. Daily except S. Credit five hours. Either term.

65a, 65b, 65c. **Analytic Geometry and Calculus.** Primarily for students in the College of Arts and Sciences. Prerequisites, Mathematics 15 or its equivalent and a reasonable preparation in algebra to be shown either (a) by credit for Mathematics 10 or its equivalent, or (b) by passing satisfactorily an optional qualifying examination in elementary and intermediate algebra to be offered by the Department of Mathematics at the beginning of each term. A student who satisfies the prerequisite in either trigonometry or algebra will be permitted to take either Mathematics 10 or 15 simultaneously with Mathematics 65a. Some students may find their needs adequately covered by 65a and 65b; students interested in Mathematics or allied subjects will be expected to take 65a, 65b and 65c.

65a. Either term. Credit three hours. First term, M W F 11, T Th S 11; second term, M W F 11.

65b. Either term. Credit three hours. First term, M W F 11; second term, M W F 11, T Th S 11.

65c. Either term. Credit three hours. M W F 11.

70. **Calculus.** Second term. Credit three hours. Prerequisite, Mathematics 65c or 55b. M W F 11.

The course will treat certain topics in advanced calculus, such as improper integrals, multiple integrals, line integrals, partial derivatives, and Taylor's theorem for functions of several variables. Special emphasis will be placed upon the physical applications.

## MUSIC

Students who wish to pursue major work in music should consult Professor WEAVER at the beginning of their freshman year, or as soon thereafter as possible.

The University furnishes coaches for several choral and instrumental ensembles, and invites all students who are interested to join these groups. Students should consult Mr. MARGRAVE about the bands, and Mr. KUYPERS about any of the other organizations.

**Bands (R.O.T.C. and Symphonic.)** Try-outs, Monday, Tuesday and Wednesday September 28, 29, and 30, 10 a. m. to 12:30 p. m. and 2 to 4 p. m., Barton Hall Band Room.

**Chamber Music Ensembles.** All interested in any type of chamber music work should consult Mr. KUYPERS at his office in the Music Building, 320 Wait Avenue, during the first week of the term.

**Cornell Chorus.** Membership in this group is open to members of the two Glee Clubs and the Choir. Try-outs will be announced. Rehearsal schedule: Mondays and Wednesdays 4:30 to 5:30 in the rehearsal room of Morse Hall.

**Men's Glee Club.** Try-outs, Tuesday and Wednesday September 29 and 30, 7:30 p. m., in the rehearsal room of Willard Straight Hall. Rehearsal schedule: Wednesday and Friday evenings 7:30 to 9:30.

**Orchestra.** All interested in playing in an orchestra should report, with their instruments, at 7:30 p. m. on Wednesday evening October 7 at the rehearsal room on the ground floor of Morse Hall. Rehearsal schedule: Wednesday evenings 7:30 to 9:30 for full orchestra, and Thursday afternoons 4:30 to 5:30 for the string section.

**Sage Chapel Choir.** Try-outs, Monday and Tuesday September 28 and 29, 10 a. m. to 12 m. and 3 to 5 p. m. in Mr. KUYPERS' office in the Music Building, 320 Wait Avenue. Rehearsal schedule: Thursday evenings 7:30 to 9 and Sunday mornings at 10 in the Sage Chapel.

**Women's Glee Club.** Try-outs, Wednesday September 30, 10 a. m. to 12 m. and 3 to 5 p. m. in Mr. KUYPERS' office in the Music Building, 320 Wait Avenue. Rehearsal schedule: Tuesday afternoons 4:30 to 5:30 in the rehearsal room of Morse Hall.

A large collection of recorded music and scores is housed in the Music Building at 320 Wait Avenue, where a number of phonograph listening rooms are available. These facilities may be used by any member of the student body on week-days between 9 a. m. and 5 p. m. and between 7 and 10 p. m., and on Sundays between 1:30 and 4:30 p. m.

### MUSIC THEORY

1. **Theory I.** Throughout the year. Credit three hours a term. Mr. GORE. M W F 10 and 12. Assignment to sections must be approved by Mr. GORE in advance of registration. 320 Wait Avenue.

An elementary course in the theory of music, with no prerequisites, open to all students irrespective of their background. The course is designed to develop facility in the hearing, reading, and writing of vocal and instrumental melody, and to afford the student a perspective of melodic styles from early times to the present day. This course is prerequisite to all other courses in music theory, and is recommended as a background for all other courses in music.

13. **The Orchestra.** First term, repeated in the second term. Credit two hours. Open to all students. Mr. HULL. T Th 2. 320 Wait Avenue.

This course is offered for students who have no technical training in music. It deals with the capacities and functions of the instruments of the orchestra, singly and in combination, with the orchestra as a whole, and with various types of music written for orchestra.

15. **Instrumental Ensemble.** Throughout the year. Credit three hours a term. Registration for this course must be approved by the instructor. Mr. KUYPERS. Hours to be arranged. 320 Wait Avenue.

An approach to the understanding of ensemble music, partly through performance and partly through the study of the music performed and comparable music. The aim of the course is an appreciation of the art as intensified through performance itself. The course is open to all students who have attained a fair degree of proficiency in performance on some instrument. Either term of this course may be taken without the other.

21. **History of Music.** Throughout the year. Credit two hours a term. Open to sophomores and upperclassmen, and to freshmen by permission. Mr. WEAVER and Mr. HULL. T Th 11. Goldwin Smith A.



A survey of the evolution of the art of music, with especial reference to the development of musical styles from period to period, and to the position of music in the social and artistic life of nations. The first term covers the period from the beginning of the Christian era through the time of Bach and Handel (approximately 1750). The second term covers the period from then until the present day. Either term of this course may be taken without the other.

**401. First Year. Individual instruction in voice, organ, piano, string, woodwind, and brass instruments.** Throughout the year. Credit two hours in the case of qualified students who are majoring in music; for other students, no credit. Mr. DUDLEY, Mr. GORE, Mrs. HARRIS, Mr. HULL, and Mr. MARGRAVE. Hours to be arranged. 320 *Wait Avenue*.

This course is offered primarily for students who are majoring in music, and for such students the work is correlated with other courses in music being taken. Whenever the facilities of the department permit, other students may take this work without credit. Permission to register, whether with or without credit, should be secured from Mr. WEAVER.

Individual instruction in organ is offered by Mr. GORE; in piano, by Mrs. HARRIS; in voice, by Mr. DUDLEY; in violin and viola, by Mr. Hull; in the other orchestral and band instruments, by Mr. MARGRAVE. Practice facilities are available in each case. Students should consult the instructor at the beginning of each term as to hours for instruction, and the secretary of the department as to hours for practice.

A fee of \$2 a half-hour is charged for this instruction, except in the case of vocal instruction, the fee for which is \$50 for the term. A fee of \$7.50 is charged for a daily one-hour assignment to a practice room equipped with piano. A term fee of \$30 is charged for a daily one-hour assignment for the use of a pipe organ in *Bailey Hall* or *Sage Chapel*.

## PHILOSOPHY

**1a. Philosophical Classics.** Either term. Credit three hours a term. Open to freshmen and sophomores. Registration in *Goldwin Smith* 224.

First term:

- Sec. 1, T Th S 9. *Goldwin Smith* 227. Mr. \_\_\_\_\_.
- Sec. 2, M W F 9. *Goldwin Smith* 227. Mr. ROBINSON.
- Sec. 3, M W F 11. *Goldwin Smith* 225. Mr. BURTT.
- Sec. 4, T Th S 10. *Goldwin Smith* 225. Mr. BROWN.

Second term:

- Sec. 1, M W F 10. *Goldwin Smith* 245. Mr. SMART.

A careful study of Lucretius *On the Nature of Things*, Plato's *Republic*, and J. S. Mill *On Liberty*. In studying Plato and Mill, special attention is paid to the philosophy of democracy.

**1b. Philosophical Classics (second course).** Second term. Prerequisite, Philosophy 1a. Mr. ROBINSON. T Th S 9. *Goldwin Smith* 227.

Reading and discussion of somewhat more advanced texts than those used in Philosophy 1a, including Plato, Hume, and Descartes.

**2. Logic.** Either term. Credit three hours. Registration in *Goldwin Smith* 224.

First term:

- Sec. 1, M W F 12. *Goldwin Smith* 242. Mr. SMART.
- Sec. 2, T Th S 10. *Goldwin Smith* 245. Mr. BROWN.

Second term:

- Sec. 1, T Th S 10. *Goldwin Smith* 234. Mr. BROWN.
- Sec. 2, T Th S 11. *Goldwin Smith* 234. Mr. WEDBERG.
- Sec. 3, M W F 11. *Goldwin Smith* 227. Mr. BURTT.
- Sec. 4, M W F 12. *Goldwin Smith* 227. Mr. SMART.

An elementary study of the laws of valid inference and the causes of fallacy.



## SPEECH AND DRAMA

*Additional opportunities for practice and training are offered by the Cornell Dramatic Club under Professor DRUMMOND and Associate Professor STANTON, and by the debate teams and clubs under Professor WICHELS and Associate Professor WAGNER. Trials for freshmen will be held in the autumn.*

*Foreign students and others whose pronunciation of English falls below the normal standard, and students with special vocal problems, are advised to confer with Associate Professor THOMAS, in charge of Speech Clinic.*

**30. Voice Training.** Repeated in second term. Credit two hours. Open to freshmen. MESSRS. THOMAS and HARDY. First term: T Th 9, and an hour to be arranged; second term, two sections: T Th 9, and an hour to be arranged; T Th 11, and an hour to be arranged. *Goldwin Smith 26.*

An elementary course for the improvement of the speaking voice, with attention to the principles of voice production.

Students with special vocal problems are advised to take this course before taking course 1.

**40. Dramatic Interpretation.** Second term. Credit three hours. For freshmen and sophomores. Mr. ALBRIGHT. M W F 10. *Morse, Stage Laboratory.*

Analysis and interpretative reading of various types of dramatic prose and poetry; principles of stage presentation; reports, individual exercises, and group rehearsal.

Students wishing to enroll should consult the instructor by December 1.

Fee for materials, \$1.

## SCIENCE

### Chemistry:

**203. Introductory Qualitative Analysis.** Second term. Credit five hours. Prerequisite, Chemistry 115 and one term of Chemistry 110, or special permission. Deposit, \$30. Must be taken with the second term of Chemistry 110. Required of candidates for the degree of B. Chem. Eng. and recommended for candidates for the degree of A.B. who intend to major in Chemistry. Mr. LONG, Mr. BAUER, and assistants.

Lecture: M 8. *Baker 200.* One recitation to be arranged.

Laboratory: M W F 1:40-4; or T Th 1:40-4, S 8-10:30. *Baker 50.*

### Geology:

**100. Introductory Geology.** Repeated in the second term. Credit three hours. Mr. NEVIN and Mr. LUDLUM. Lectures, T Th 9, first term; T Th 11, second term. *Warren Hall 25:* Laboratory, M T W Th F afternoons, 1:40. *McGraw.* Laboratory fee, including field trips, \$4.25.

Students must register for laboratory assignment. The fundamental principles of this branch of science. This course cannot be elected by Arts and Sciences students for satisfaction of the science group requirement.

**401. Ancient Life (History of Life).** First term. Credit three hours. Mr. MERRIAM. A résumé of organic development during the course of earth history, with emphasis on evolution of vertebrate life from primitive fish to man. Lectures, M W F 9. *McGraw.* Demonstrations to accompany Friday lecture.

The course is designed for the general student who desires a fundamental but not too technical knowledge of evolution and distribution of life, and an understanding of the geologic background from which the human group has emerged.

### Physiology:

**303. Human Physiology.** Either term. Credit three hours. Mr. DYE. Lectures, demonstrations, and discussion periods. M W F 10. *Moore Laboratory 101.*

An introductory course designed particularly for those students who intend to take only one course in physiology, for those who expect to teach biology in the secondary schools, and for those who desire a general knowledge of the physiological processes of the human body.

### Zoology:

**9. General Ornithology.** Second term. Credit three hours. Lecture, W 11, *Fernow 122.* Field work and laboratory, M W 1:40-4 or T Th 1:40-4. *Fernow 210.* MESSRS. ALLEN and KELLOGG.

Introduction to the study of birds, particularly the local species; their songs and habits; designed to give a working knowledge to those wishing to study birds as an avocation, and fundamental to those planning advanced work in ornithology. Laboratory work with bird skins is based on the field work. Laboratory fee, \$3.

## SOCIAL SCIENCE

*The courses listed below are offered cooperatively by the Departments of Economics, Government, and Sociology and Anthropology. They are designed for students who desire a general introductory course in social science. On the completion of a part or all of these courses, students may be admitted to advanced courses in anthropology, economics, government, and sociology under conditions set by these departments.*

*Courses A and B are prescribed for those who expect to become candidates for the degree Master of Education.*

A, B. **Introduction to Social Science.** Throughout the year. Open to freshmen. Course A (first term) is a prerequisite for course B (second term). Credit three hours a term. M W F 10, 12; T Th S 11. Rooms to be announced. Messrs. HULSE, RIEMER, and \_\_\_\_\_.

A study of the social organization of communities and of nations, designed to introduce the students to the fields of economics, government, sociology, and anthropology. Attention will be directed successively toward (1) a primitive community, (2) the New England town of the seventeenth century, (3) modern communities, urban and rural, and (4) the nation as a form of social organization. Fee for materials furnished, \$3 each term.

Freshmen who elect Social Science A, B may substitute for English 2 the inter-departmental course, **Oral and Written Expression**, described on page 9.