WASHINGTON UNIVERSITY.

UNDERGRADUATE DEPARTMENT.

COURSES OF STUDY.
REPORTS OF THE DEANS

OF THE

College and the Polytechnic School

CONCERNING THE WORK OF THE

UNDERGRADUATE DEPARTMENT

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St. Louis:
Nixon-Jones Printing Company.
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Dear Sir: In answer to your request to give you a statement of the nature and scope of work now done in the College of the University, I beg to submit the following report: —

General Plan of our College Courses — The courses of study in the College are two in number, each requiring for its completion four years, leading respectively to the degrees of Bachelor of Arts and Bachelor of Philosophy. For admission to the first of these courses Greek is required and the study of Greek is also required during one year and a half, or three terms, of the College course. For admission to the second a certain amount of Physics is required instead of Greek, which requirement is continued one year and a half, and the general tendency of this course is towards scientific studies. In the arrangement of both courses the greater part of the studies are required, although in the last two years election of studies is allowed to such an extent as seems best for the true development of the student. In referring to these two courses in this report the numerals I. and II. will be used respectively for the courses in Arts and Philosophy.

Latin. — The study of Latin is required in both courses during the Freshman and Sophomore years. Portions of Livy and the odes of Horace occupy the Freshman year; Cicero and selections from Juvenal, Plautus, and Terence, the Sophomore year, each class reciting four times a week. Latin may, however, be pursued as an elective study during the remaining years of the course, and for the past three years Juniors and Seniors have formed classes for more advanced work in that study.
Greek. — Greek is required in course I. during three terms, or until the middle of the Sophomore year. It is then an elective study, but a large majority in every class continue the study of Greek until the end of the year, often taking the alternative study as an extra; and a portion of every Junior and Senior class has, of late years, taken Greek with much apparent interest and profit. The Greek Historians, Homer, Sophocles, Aeschylus, and the great prose writers, Isocrates and Demosthenes are studied during the years when this work is required, the course being varied somewhat year by year as may seem best.

Modern Languages. — Sufficient knowledge of either German or French to read ordinary prose with the aid of a dictionary is required of all candidates for admission to the Freshman class. Three exercises a week in French are given during the Freshman year to those who presented German for admission, and the same in German to those who were prepared in French. All take up German again at the beginning of the Sophomore year and continue its study through the Junior year with three exercises a week. The reading of French authors is also continued with two recitations a week from the beginning of the Sophomore year until the end of the course in connection with the work in History. Lectures on German and French Literature are given during the second term of Junior year, upon which students are examined in writing. The aim in the work in modern languages is (1) to enable students at graduation to read easily at sight any ordinary German or French work; (2) to instruct them in the history of the rise and development of the literature of those languages, and (3) to make easy the acquisition of a speaking knowledge of them if desired. We think it safe to say that in general the results are entirely satisfactory.

English. — Six lectures on the Elements of Ethics are given to the Freshmen in the first term, of which they are required
to make careful abstracts as a part of their work in English Composition. During the remainder of the Freshman year the class writes once in two weeks a composition on some subject suggested by the work in History. Writing compositions is a part of the required work of the first term Sophomore year, and in the second term eight abstracts are required of lectures on English Literature. These abstracts are criticised as exercises in English Composition. This work is required of both College and Polytechnic classes through the first two years of the course. The college Juniors pursue the study of Rhetoric and Early English three times a week during the first term, and write during the year themes upon subjects assigned by the professor in charge. The Senior class has three exercises a week in English Literature throughout the year. Much of this work consists of studies of authors and preparing and reading before the class critiques upon such writers or periods as may be studied. This written work takes the place of the usual theme, or forensic, writing. The Freshman class is required to take two lessons in Elocution weekly during the year. The exercise consists of declamation and reading from standard English authors.

History. — Some historical work is done by every class as a part of the required work of the year. A study of the Constitution of the United States, with three recitations a week, is the work of the first term of the Freshman year, preceded by a short course of lectures upon the circumstances attending its adoption. The second half of the year is devoted to the study of some period in the history of England. The Sophomore year is given to the history of France. Three recitations a week are allowed for this work the first term, two of which are employed in reading a history of France in French. The second term a careful study is made of that period of French history from the death of Louis XIV. to the fall of Napoleon. Text books
in both English and French are used and constant reference is made to original authorities so far as the means at hand will allow. Bryce's *Holy Roman Empire* is the book upon which the historical study of the first term junior year is based. Other books upon this subject, especially handbooks of German history, are constantly in use, and selections from Madame De Staël's *De l'Allemagne* are read in the original twice a week. The second term is occupied with a course of sixteen lectures upon the Literature of France, with frequent written examinations, followed by a course of ten lectures on Eastern Europe. The Seniors study the first term the English Constitution, and also, after the comparative method, the constitutions and governments of the chief nations of Europe. Twelve lectures on the Elements of International Law and a review of General European History follow. The work of this year is carried on with both recitations and lectures. The topical plan is used as much as possible in all the College work in history. We have no library at all adequate to the needs of the work in this department. Students in History and Literature use the Mercantile and Public School Libraries, and the private libraries of the professors are also in constant use. But the best methods of teaching History can not be employed to such an extent as would be desirable and possible had the University a good library for daily use, with a fund for its continual increase. The interest and profit of the historical work is much assisted by the constant use of photographic slides, of which the present incumbent of the chair of History has about two thousand, consisting of views of places of historical interest, and several hundred fine portraits of historical characters. These are used freely at all stages of the historical work, and have been found of real and permanent value without in the least lowering the dignity of the work.

*Philosophy.* — Under this head may be included the re-
quired Logic of the second term Junior year, three exercises a week, and the required Metaphysics and Ethics of the first term Senior year with four recitations and lectures weekly. The study of metaphysics is based upon the abridged treatise of Sir Wm. Hamilton, but other writers are discussed and the modern philosophical systems explained. The instruction is in the form of lectures and recitations and discussions in which all in the class participate. Ethics is taught in a course of about twenty lectures of which notes are taken and upon which written examinations are held. The interest in this work manifested by our Seniors, year by year, is most gratifying.

**Political Economy**, as a required study, is also taught with four exercises a week the second term Senior year. In this work a textbook is used for the sake of convenience, but all systems are fully and freely discussed upon their merits. Constant reference is made to the work of such writers as Rogers, Mill, Carey, Perry, and others of different shades of opinion in regard to the leading principles discussed. In short, the attempt is made to give a practical turn to this work which will make it of real use to the students in after life as well as a method of mental discipline while in College.

**Physiology and Anatomy.** — A course of eighteen lectures is given to the Senior class during the second term. Charts, the human skeleton, and subjects from the dissecting room are studied carefully, and a practical bearing given to the whole work. Written examinations are held several times during the course.

**Mathematics.** — Solid Geometry, Higher Algebra, Trigonometry and Analytical Geometry are required studies in both courses, covering two years' work. Integral and Differential Calculus and Applied Mechanics may be studied during the Junior and Senior years, and there are always some who go on with this work. In all the work in pure mathe-
matics no distinction is made between the College and the Polytechnic classes, both receiving their instruction from the same teachers, and usually in the same classes. Mechanics is a required study second term Junior year in course I., and an elective study in Course II. Astronomy is required Senior year first term in both courses. In this study the professor in charge makes use of the Observatory of the University and of the astronomical instruments now available, and also, for purposes of illustration, of a complete set of photographic reproductions, some three hundred in number, the property of a member of the Faculty, to be used with the lantern, and made in London expressly for this purpose.

The Observatory. — The report of the mathematical work of this department would hardly be complete without further mention of the important work of our Observatory. Not only are the instruments there used for illustrating the astronomical work of the College and Polytechnic Classes; a time-service is also maintained in St. Louis and throughout the region reached by the railways radiating from the city. By automatic clock-beats as signals, what is known as Central Standard Time is given to nearly all the railroad towns in the Mississippi Valley from Chicago to the Gulf of Mexico. A time ball is now dropped daily at 10 o'clock a.m. on the main building of the World's Fair at New Orleans.

This is also one of the best determined reference points in the country for the calculation of longitudes west and south, and is constantly made use of by the United States government, through the assistance of the professor in charge, in the prosecution of its geodetic work.

During the past season the Observatory, in connection with the U. S. Geological Survey, has determined the longitude of a number of places which are to serve as reference points for State surveys and boundary lines in Missouri, Kansas, Arkansas, Colorado, and New Mexico.
Physics. — The study of Physics is required for one term only in Course I.; viz.: the second term Sophomore year; but the opportunity is given of carrying on this work as an elective study during the two remaining years of the course. Nearly all students take at least one term’s work after that which is required is finished, and there are always some who go on farther still. In Course II., Physics is a required study during the Freshman year and the first term Sophomore year, running parallel with the Greek in course I., for which it is a substitute. Its study may be continued, however, as an elective throughout the course.

Chemistry is required the first term Junior year in Course I., and the whole of the Sophomore year in Course II. It may also be pursued as an elective after the required work is finished. As a matter of fact, seldom does any student, who has had one term’s work in Theoretical Chemistry, fail to take, either as an elective or an extra study, at least one more term for laboratory practice.

Mineralogy and Geology. — Lectures and recitations on this subject belong to the work of the second term Junior year in Course I., and to the second term Sophomore year in Course II., these classes being united for this purpose with the Sophomores of the Polytechnic School. The large and valuable collections of the department of Mining and Metallurgy are at the disposal of the class in this work. An opportunity is also given for the study of Botany and Zoology to such as desire to pursue these branches. Largely increased facilities for prosecution of these studies will probably be given at an early day.

Examinations. — Written examinations are held in all departments of study, usually as often as once a month, and written work is of almost daily occurrence. Examinations in writing are required upon all courses of lectures when this method of instruction is employed, at various stages of each course and at its completion. Thoroughness and quality, not quantity, are insisted upon by all the
members of the corps of instruction as the essential things.

Summary. — A careful consideration of the above statement, which aims to tell not what we would like to do, but what is really done in the various directions of our work, will show how broad is our plan, and how varied are the opportunities given to every student in our College. To sum up briefly:

1. He may study Latin, Greek, and Mathematics — by many persons, even now, supposed to be the only branches studied in a College — throughout the required period, say two years, and then drop one or all of these and turn his attention to Physics, Chemistry, and other so-called practical studies, or to literary work.

2. He may continue his classical studies throughout the four years’ course, taking Mathematics or not as he pleases, and continuing the study of French and German, also, through the Senior year.

3. Whichever of the above courses he may choose to pursue, it will always include the study of Modern Languages, History, Modern Literature, and some work in Physics, Chemistry, Mechanics, and Astronomy.

4. He is able, when graduated, to read easily and with pleasure German and French; he has laid such a foundation in History, General Literature, and the Practical Sciences, that he is prepared after graduation to select intelligently his future line of work or study, and to pursue it with a degree of satisfaction and a prospect of success which could hardly be possible without such preparation.

From what has been said it will appear that the Faculty of the College regard the work of that department as necessarily preparatory in character; that the pursuit of certain studies is, in their judgment, essential in order that a young man may be truly liberally educated; that such studies are, nevertheless, not exclusive, and that a well-arranged curriculum will admit of a judicious choice of
other studies within certain carefully defined limits; in short, that the work of the College is not that of a professional school, nor of a training-school for specialists; its aim is to lay a broad and generous foundation upon which such professional and special work may be based. This, I am sure, is a correct statement of the views which the Faculty of the College of the University have held upon this subject for years, and in accordance with which the work has been carried on.

Such is the work which we try to do in our College. Speaking for those who know best the character of this work and who can compare it honestly and fairly with work of like character done elsewhere, I do not hesitate to say that we need not fear comparisons. We do honest, thorough work, and we need not be afraid to say so. The testimony of those who have fitted themselves here for professional or other work in active life, will sustain this assertion.

I have been unable, of course, in such a sketch of our plan of work to mention in detail many things that would be of interest. It could easily be shown how earnest an effort is made by the various members of our corps of instruction to satisfy the high ideal of educational work which is always before them, but the scope of this report will not permit me to enlarge upon that point. We can see many things in which we are weak; doubtless we shall never be entirely satisfied with the work which we do; but with the excellent spirit that is uniformly shown by our students, with the unselfish, enthusiastic devotion to duty which has always characterized our Faculty, and with the hearty co-operation of the Board of Directors of the University, our hopes can not be too high, nor our expectations too great.

All of which is respectfully submitted. M. S. Snow, Dean of the College Faculty.

WASHINGTON UNIVERSITY, December 16, 1884.