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relation of the various parts of a sentence to one another, the construction of individual words in a sentence of reasonable difficulty, and those good usages of modern English which one should know in distinction from current errors. The main test in composition will consist of one or more essays, developing a theme through several paragraphs; the subjects will be drawn from the books read, from the candidate's other studies, and from his personal knowledge and experience quite apart from reading. For this purpose the examiner will provide several subjects, perhaps eight or ten, from which the candidate may make his own selections. He will not be expected to write more than four hundred words per hour.

2. LITERATURE

The examination in literature will include:

(a). General questions designed to test such a knowledge and appreciation of literature as may be gained by fulfilling the requirements defined under (A) *Reading*, above. The candidate will be required to submit a list of the books read in preparation for the examination, certified by the principal of the school in which he was prepared; but this list will not be made the basis of detailed questions.

(b). A test on the books prescribed for study, which will consist of questions upon their content, form, and structure, and upon the meaning of such words, phrases, and allusions as may be necessary to an understanding of the works and an appreciation of their salient qualities of style. General questions may also be asked concerning the lives of the authors, their other works, and the periods of literary history to which they belong.

The examination given at Vassar College consists of a single paper covering the books for reading and the books for study. The experience of our students indicates that the aims proposed by the Conference on Uniform Entrance Requirements are furthered by doing away with a somewhat arbitrary distinction between the two sets of books, and by giving questions that differ in character only in so far as the books on which they are based have been read more or less recently and by more or less mature students. If this exam-

ination is taken before the end of the last school year the student must continue regular class work in English during the last year.

History: Ancient history to 800 A.D. (Required of all candidates).

American history and civil government. (May be substituted for third language or science, see p. 26.)

The study of either Ancient or American history should cover a period of at least one academic year with five classroom exercises a week.

Mathematics: Algebra.—The requirements in algebra embrace the following subjects: factors; common divisors and multiples; fractions; ratio and proportion; negative quantities and interpretation of negative results; the theory of exponents; radicals and some equations involving radicals; the binomial theorem for positive integral exponents; arithmetical and geometrical progressions; the statement of problems by means of equations; elimination from linear equations and solution from systems containing one quadratic; problems solvable by the aid of one quadratic equation. The textbooks used should be equivalent to those of Hall and Knight, Fisher and Schwatt, Wells, Wentworth, or Tanner. Three semesters or more will be requisite for this subject.

Plane Geometry, as presented by any of the best textbooks. Sufficient material, both of theorems and problems, will be found in the plane geometry sections of the following: Holgate's *Elementary Geometry*, Schultze and Sevenoak's *Geometry*, McMahon's *Elementary Geometry*, Plane, Durell's *Plane and Solid Geometry* or the *Geometry* of Webb and Betz. At least one year should be spent on this topic.

In order to pursue successfully the work of the College recent review of the work completed early in the preparatory course is necessary.

Latin: Preparation should include a thorough knowledge of the forms and syntax of the language with vocabulary sufficient to translate Latin into idiomatic English and English into correct Latin. To secure this candidates should read at least four books of Caesar's *Galic War*, seven orations of Cicero (the Manilian Law to count as

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- (1) 1 English Required
- (2) 1 Mathematics Required
- (3) { 1 Latin }
 { or } One required
 { 1 Greek }
- (4) The fourth course should be a continuation of one of the subjects offered for entrance.
- (5) The fifth course may be any one named in the list given above.

REQUIREMENTS FOR THE DEGREE OF A. B.

The following courses are required of all candidates for the degree. Each three hours a week through the year unless otherwise stated.

1 English		Freshman year
1 Mathematics		Freshman year
1 Latin	}	Freshman year
or		
1 Greek		
†French or German		Freshman or Sophomore year
1 History		Freshman or Sophomore year
*Physics or Chemistry		Freshman or Sophomore year
1 Philosophy	First semester	Junior year
2 Ethics	First semester	Senior year

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Freshmen are required to take 15 hours a week:
Sophomores, 15 hours in the first semester, 14 or 15 in the second:
Juniors, 14 or 15 hours a week:
Seniors, 12 to 15 hours a week.

All elections of courses are subject to the approval of the Faculty.

Elections should be made with great care so that changes will not be necessary. Students are held responsible for observing the requirements for the degree and the proper sequence of courses.

All requests for changes of elections for the first semester must be sent to the Dean before September 1. No changes may be made after the beginning of a semester.

†See page 39.

*See page 87.

Students who gain exemption in Physics or Chemistry at entrance must elect a year of science, three hours a week.

Students who present science or American history or elementary Greek for entrance in place of the third language must take during the college course the third language, French or German. This should be taken in the freshman or sophomore year. If the subject is left to be included in the elections of the junior or senior year it will count for only 2 instead of 3 hours in each semester.

A student may be released from this requirement if she can satisfy the department concerned of her ability to read and pronounce simple French or German, but she may not take advantage of this special test after the beginning of the junior year.

Courses may not be taken in more than 5 departments in one semester.

Not more than 6 hours may be taken in one department in any semester, except by special permission of the Faculty.

Unless otherwise stated, all courses are open to sophomores.

ADMISSION TO ADVANCED STANDING

Candidates for advanced standing, not coming from accredited colleges, may be admitted, on examination, to the regular course previous to the beginning of the junior year.

Candidates from accredited colleges must submit a statement of honorable dismissal, an official statement of entrance credits and of college credits, and a marked copy of the catalogue showing the courses for which credit is desired. Examinations may be required at the discretion of the Faculty.

No student will be received as a candidate for the degree of Bachelor of Arts after the beginning of the senior year.

In all cases the senior year must be spent in residence.

Intensive reading of Shakespeare's work accompanied by research into the history and literature of the sixteenth and early seventeenth centuries.

Course P. American Literature. Second semester [3].
MISS BALLARD.

Prerequisite: Courses F and FF.

A study of the development of American literature, with some reference to the influences of foreign literature and contemporary American history.

Course Q. Later Victorian Poetry. Second semester [3].
ASSISTANT PROFESSOR WOOD.

Prerequisite: Courses J and JJ or K and KK.

A study of the poets from Arnold to Kipling exclusive of Browning and Tennyson and with emphasis upon Rossetti, Morris, Swinburne and Meredith.

Courses R and RR. Development of the classic and romantic movements in English literature, beginning with Spenser. First and second semesters [3].
PROFESSOR WYLLIE.

Prerequisite: four courses of literature.

Courses S and SS. Advanced composition. Writing and criticism. First and second semesters [1].
PROFESSOR BUCK.

Prerequisite: Course A or B.

The instructor must be consulted before election. The class will be limited to fifteen members. Application must be made at least one week before elections are due.

Course T. Middle English Romances. First semester [3].
ASSISTANT PROFESSOR PEEBLES.

Prerequisite: Courses F and FF.

A study of the development of the romance in England, considered in connection with earlier folk-literature of Germanic and Celtic

origin and with the legendary ecclesiastical literature of the period. The work is largely conducted by means of special reports.

Spoken English

MISS LANDON.

The following courses aim to develop the students' powers of oral expression through training in such essentials as the proper use of the voice, clear enunciation and correct pronunciation in daily speech as well as in public address.

This work does not count toward the degree.

Course A. The fundamental principles of voice production and practical phonetics are brought out in various ways, through reading, extemporaneous speaking and story-telling. First or second semester [1].

Course B. Extemporaneous speaking and story-telling. First or second semester [1].

Prerequisite: Course A.

Course C. The study and oral presentation of plays. First or second semester [1].

Prerequisite: Course A.

MATHEMATICS

PROFESSOR WHITE, ASSISTANT PROFESSOR COWLEY, ASSISTANT PROFESSOR RICHARDSON, DR. CUMMINGS AND MISS SMITH.

REQUIRED

Course 1. Solid and Spherical Geometry. Freshman year, first semester [3].

The subject is taught by the heuristic method combined with lectures, essentially as it is presented in Miss Richardson's textbook on Solid Geometry.

Algebra and Plane Trigonometry. Freshman year, second semester [3].

PROFESSOR WHITE, ASSISTANT PROFESSOR COWLEY, ASSISTANT PROFESSOR RICHARDSON, DR. CUMMINGS AND MISS SMITH.

Apparently no major available

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ELECTIVE

Course A. Analytic Geometry. First semester [3].

PROFESSOR WHITE AND MISS SMITH.

This course includes the definitions, equations and simplest properties, chiefly metrical but partly projective, of the straight line and conic sections. Particular attention is paid to plotting and to numerical problems.

Course B. Advanced Algebra. First semester [3].

ASSISTANT PROFESSOR RICHARDSON.

General properties of the polynomial; applications of the principle of undetermined coefficients, including partial fractions; permutations and combinations; elements of the theory of probability; mathematical induction; binomial theorem, especially proof of the theorem, and properties of the binomial coefficients; determinants; convergence of series; continued fractions.

Course C. Elementary Differential and Integral Calculus. Second semester [3].

PROFESSOR WHITE AND ASSISTANT PROFESSOR COWLEY.

Prerequisite: Course A.

In this course the student becomes familiar with the notions of derivative, differential, indefinite and definite integral; learns to differentiate and integrate the simplest functions formally, and to evaluate numerically certain definite integrals. Brief attention is given to maxima and minima, and to expansion in series.

Course D. Integral Calculus. First semester [3].

PROFESSOR WHITE.

A continuation of Course C. Some review and further study of differential calculus; auxiliary methods of formal integration; multiple integrals, areas, volumes, lengths of curves, and problems in mechanics.

Course E. Second course in Analytic Geometry. Second semester [3].

PROFESSOR WHITE.

Prerequisite: Course A.

The most important metric properties of conics. Pencils of conics, coaxial circles, confocal systems, special roulettes and involutes. Polar systems and duality; elements of projective geometry.

Courses F and FF. Integral Calculus and Differential Equations. First and second semesters [3].

PROFESSOR WHITE.

[Course F not given in 1914-15.]

For the work of the second semester, in Differential Equations, Courses C and D are sufficient preparation.

Course H. Theory of Equations. Second semester [3].

MISS SMITH.

Cajori's Theory of Equations is used as the basis of the work, supplemented by lectures.

Course I. Curve Tracing. Lecture course with daily practice in curve tracing. First semester [3].

MISS SMITH.

Prerequisite: Courses A and C.

Course J. Analytic Geometry of Three Dimensions (C. Smith). The geometry of planes and quadric surfaces, with a brief study of twisted curves of the third and fourth orders. First semester [3].

ASSISTANT PROFESSOR RICHARDSON.

[Not given in 1914-15.]

Courses L and LL. Modern Methods of Analytic Geometry. First and second semesters [3].

ASSISTANT PROFESSOR COWLEY.

This course traces the evolution of the sharply defined notions, transformation and group, in nineteenth century geometry. Emphasis is laid upon method but not to the exclusion of content. Collineation, reciprocation, and quadric transformation are studied in detail, and the general relations of polarity and involution in a plane. The aim is, by extending elementary notions and bringing together particular topics under more general theories to exhibit the mutual relations of algebra and geometry. This course is introductory to a division of modern mathematics.

Course M. Synthetic Projective Geometry. Second semester [3].
ASSISTANT PROFESSOR RICHARDSON.

Prerequisite: Course A.

The course includes the essential topics of elementary projective geometry, developing systematically all the principal theorems on conic sections and ruled surfaces of the second degree. This course is particularly useful to those intending to teach geometry.

Courses O and OO. Analytic Mechanics. First and second semesters [3].
DR. CUMMINGS.

Prerequisite: Courses A, C and D.

The elements of statics and dynamics, applications to practical problems, the fundamental principles of mechanics and the elements of the theory of the potential. Students taking Course D may elect this course, after consultation with the instructor.

GRADUATE COURSES

Graduate courses with personal direction in research problems are offered to qualified students who may apply.

ASTRONOMY

ASSOCIATE PROFESSOR FURNESS AND MISS FULLER.

The courses in Astronomy are presented under three main divisions, descriptive, observational and mathematical. Courses A and B are descriptive; C, D and H observational; E, F and G mathematical; I and J graduate.

Course A. Descriptive Astronomy. The Celestial Sphere. The Solar System. First semester [3].

ASSOCIATE PROFESSOR FURNESS.

A general study, without mathematical processes, of the phenomena of the sky and of the relations of the solar system. Lectures and topical reading. A limited amount of sky observation.

Course B. Descriptive Astronomy. The Stellar System. Astrophysics. Second semester [3].
ASSOCIATE PROFESSOR FURNESS.

No prerequisite.

A study of the luminous bodies of space from the point of view of astronomy; of their nature and constitution by the methods of spectroscopic investigation. The latter part presents in an elementary form the principles and methods of the new astronomy. Observational work with the spectroscope.

Course C. Observational Astronomy. First semester [2].

MISS FULLER.

No prerequisite.

The course is conducted by observational and laboratory methods. Study of stellar and planetary positions and motions; surface phenomena of sun, moon and planets. Use of portable and mounted telescopes. Study of almanacs, maps and globes. Evening work required.

Course D. Observational Astronomy. A continuation of Course C. Second semester [2].
MISS FULLER.

Students desiring to elect Course D, who have not had a previous course in Astronomy, must consult the department.

Course E. General Astronomy. Second semester [3].

ASSOCIATE PROFESSOR FURNESS.

A mathematical treatment of the principal branches of astronomy. Spherical trigonometry is briefly presented in introductory lectures. The course presupposes the required mathematics of the college curriculum. Astronomy A is recommended as a preliminary course, but it is not required.

Course F. Theory and use of the Transit Instrument. First semester [3].
ASSOCIATE PROFESSOR FURNESS.

Prerequisite: One course in Astronomy and Mathematics Course C.

This course involves the determination of time and of right ascension, and leads up to the problem of the motion of the solar system.

Course G. Theoretical Astronomy. Second semester [3 or 1].

ASSOCIATE PROFESSOR FURNESS.