Vassar 1924-25
College

REQUIREMENTS FOR THE A. B. DEGREE

ACADEMIC STANDARDS

1. Hours

The minimum requirement for the degree is the completion of 120 semestral hours and 6 additional hours in Physical Education. In general, a course of four years is required for the attainment of the degree. For the special privilege of graduation in a shorter term petition must be made to the Faculty through the Committee on Privileges and Elections.

Every course elected must be completed even though the course be in excess of the minimum number of hours required for graduation.

Students are expected to elect each semester a course amounting to 14, 15 or 16 hours. An election of 17 hours is permissible if the election includes a 4 hour laboratory course in science and a required course in English Speech or Hygiene. An election involving more or less than the normal number of hours can be made only with the approval of the Committee on Privileges and Elections.

The privilege of electing less than 14 hours in the senior year will be granted only to students who are taking at least 8 hours that require individual work of an advanced type. The privilege of electing courses giving alternate credit of 4 hours will be restricted to students who are taking no more than 16 hours. A maximum of 4 hours of work not necessarily connected with attendance of any class, but under the guidance of an instructor in whose field the student desires to work, will be granted to seniors whose former work indicates that they are capable of independent intensive study and whose entire election does not exceed 16 hours. Such students must be approved by the department in which they wish to work and by the Committee on Privileges and Elections and must file with the department a statement of their proposed course of study.

2. Credits

The ratio of credits to hours required for graduation in 1925 is 1.85. Before the senior year a student whose ratio is 1.8 shall be regarded as having attained standard grade.

[1] For the class of 1926 and after, the ratio of credits to hours required for graduation is 2. In the freshman and sophomore years a student whose ratio is 1.8 shall be regarded as having attained standard grade; but in the junior and senior years the ratio shall be 2.

A credit is the valuation of each semestral hour of work according to the mark received. Each semestral hour with a mark of "a" counts 5 credits; "b", 3 credits; "c", 2 credits; "d", 1 credit. Physical Education and the required course in English Speech are not included in the estimate of credit ratio for graduation grade or standard grade nor in the granting of honors.

3. Required Standard.

Students who fail to complete nine hours or, in elections of less than 15 hours, 60% of the work elected in any semester, are not allowed to remain in college for the following semester. The only ground for exception to this rule is unavoidable absence from examinations, or illness or some extraordinary circumstance.

Freshmen who fail to complete twenty-one hours and to gain forty-two credits during the year may not return the following year. Exceptions to this rule may be made by the committee on students' records in cases in which the failure has been due to causes beyond the control of the student or in the case of students who show decided promise.

Freshmen who do not complete twelve hours of work in the first semester are reported to the committee on students' records. All such students are notified at the beginning of the second semester that failure to complete twelve hours and to gain the necessary number of credits in the second semester may result in forfeiting the privilege of returning the following year.

Continuance in college for sophomores, juniors, and seniors is determined by the Faculty with due consideration of each case.

Incoming juniors who are 20 or more points below standard grade in June must make up in the first semester at least one-half of the points lacking to be entitled to remain in college.

Candidates for senior rank who are below graduation grade will not be entitled to return to college unless there are circumstances involved that warrant favorable action by the committee. In such cases all senior privileges will be withheld.

1924-1925

COURSES REQUIRED

The following new requirements of the curriculum are in force for students admitted in 1922 and thereafter:*

1. Required without choice
   (1) English 1 and 2, freshman year.
   (2) Principles and Hygiene of Physical Education, 1 hour freshman year.
   (3) History 1 and 2.
   (4) For the classes of 1925, 1926 and 1927, English Speech 3 and 4, or 6 and 7. To be completed preferably by the end of the sophomore year. For the class of 1928 and following classes all freshmen who do not pass a test in English Speech during their first semester must take one or two semesters according to their needs, beginning either in the second semester of their freshman year or in the sophomore year. In the case of students who have serious defects in speech, clinical work is required for one hour a week during the second semester of the freshman year as prerequisite to the required course.

2. Required with option
   Five subjects from five of the following groups. One of the groups may be omitted; or, if exemption is obtained from the third language, one group in addition to group (3) may be omitted.
   (1) Classical literature: either Latin, which presupposes 3 or 4 units for entrance; or Greek, with a prerequisite of 2 or 3 units for entrance or one year in college.
   (2) Modern foreign literature, with a prerequisite of one year's work in college or 2 or 3 entrance units.
   (3) Third foreign language, a foreign language in addition to the two prescribed for admission to college.
   All students who offered for entrance three foreign languages and all who present to the language department satisfactory evidence of ability to use as a tool a language not offered for entrance are exempt from the requirement of a third foreign language.

*Students admitted prior to 1922 are referred to the catalogue 1921-22, pages 50-52.

   (4) Mathematics.
   (5) Chemistry or Physics.
   Students who have not offered either of these subjects for entrance must elect one of them in college.
   (6) Astronomy, Botany, Geology, Physiology, or Zoology.
   Students who have offered no science for entrance must elect from both science groups (5) and (6).
   Only courses which have laboratory work and which count for 4 hours will satisfy this requirement.

One of the required subjects, provided it is not a subject definitely prescribed for the freshman year, may be deferred until the junior year.

SEQUENTIAL STUDY

Each student must complete the equivalent of sequential study in elective courses, aggregating at least 36 hours in two departments. These may be distributed equally between the two departments, 18 hours in each, or not less than 12 hours in either department, and the remainder in the other. The required number of hours may be chosen in part from work in another department provided that this work bears a close relationship to or is important for advanced work in the sequence, but such substitution must be approved by the department in which the hours are counted.

Elementary language courses and courses that are taken as required studies may not count as part of sequential study. For other special regulations see department announcements under Courses of Instruction.

Students must have from the departments concerned written approval of their election of courses to satisfy the requirement of sequential study. Any change in the plan so endorsed must be resubmitted to the department concerned promptly, and must be filed in the Dean's office not later than the end of the second week of the semester.

GENERAL REGULATIONS

Under certain regulations (see Courses of Instruction) 8 hours of Practice in Art, 8 hours of Applied Music, 8 hours of English Speech, in addition to the 1 hour which may be required in English Speech, may be counted within the minimum requirement of 120 hours, provided that the total elective hours of credit in these courses shall not exceed 8.

113 and 114. Latin Writing. First semester [1], second semester [1].

ASSOCIATE PROFESSOR TAYLOR AND ASSISTANT PROFESSOR COULTER.

Prerequisite: 13 and 14.

Students must consult the instructor before electing this course.

Study of the main characteristics of Latin style with special emphasis on the difference between Latin and English idiom; translation into Latin of passages selected from English authors; conversation and original compositions in Latin; occasional exercises in writing Latin verse.

Hours to be arranged.

IV. COURSES IN ROMAN ANTIQUITIES

Courses 71 and 72 are open to sophomores, juniors and seniors.

71. Roman Life. First semester [2].

PROFESSOR HAIGHT.

[Not offered in 1924-1925.]

The life of the ancient Romans in town and country, their houses and villas, family life, education, occupations, amusements, and religion. Illustration by lantern views and photographs.

Group 11, Mon. Thu.

72. Roman Monuments. Second semester [2].

ASSOCIATE PROFESSOR TAYLOR.

[Not offered in 1924-1925.]

Origin and growth of the city of Rome. A study of the most important monuments of Rome, Pompeii and other sites of the Roman world. Roman architecture, sculpture and painting.

Group 11, Mon. Thu.

Vassar 1924-25
College

[1924-1929]

C

MATHEMATICS

PROFESSOR H. S. WHITE, ASSOCIATE PROFESSOR COWLEY, ASSOCIATE PROFESSOR CUMMINGS, ASSOCIATE PROFESSOR WELLS, ASSISTANT PROFESSOR SMITH.

1. Plane Trigonometry, with Logarithms. Freshman year, first semester [3].

ALL MEMBERS OF THE DEPARTMENT.

Groups 1, 2, 4 and 5.

2. Solid and Spherical Geometry. Freshman year, second semester [3].

ALL MEMBERS OF THE DEPARTMENT.

The subject is taught by the heuristic method combined with lectures, essentially as it is presented in Richardson's textbook on Solid Geometry. Elementary terms and principles of logic are employed in analyzing typical demonstrations.

Groups 1, 2, 4 and 5.

4. Analysis. Second semester [3].

ALL MEMBERS OF THE DEPARTMENT.

The elements of Analytic Geometry and the theory of limits; derivatives and integrals of the simpler algebraic functions. This course will give some definite knowledge of modern progress in mathematics, with some precise notions concerning its practical applications.

Groups 1, 2, 4 and 5.

11. Analytic Geometry. First semester [3].

ASSOCIATE PROFESSOR COWLEY AND PROFESSOR WHITE.

[Not open to students who have completed Course 4].

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

Groups 1 and 6.

12. Elementary Differential and Integral Calculus. Second semester [3].

ASSOCIATE PROFESSOR COWLEY AND ASSOCIATE PROFESSOR WELLS.

Prerequisite: 4 or 11. [See also Course 23.]

1924-25

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.

Group 1.

13. Advanced Algebra. First semester [3].

Associate Professor Cummings.

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; the theory of irrational numbers; continued fractions.

Group 6.

14. Theory of Equations. Second semester [3].

Assistant Professor Smith.

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

Group 1.

15. Analytic Geometry of Three Dimensions (Snyder and Sisam). First semester [3].

[Not given in 1924-1925.]

Assistant Professor Smith.

Prerequisite: 11.

The geometry of planes and quadric surfaces, with a brief study of twisted curves of the third and fourth orders.

Group 7.

17. Calculus of Finite Differences. First semester [3].

Associate Professor Cummings.

[Not given in 1924-1925.]

Prerequisite: 11 and 12.

This course considers in detail the mathematical theory of interpolation. This is essential in the use of tables of numerical values, calculated or empirical, dependent upon one or upon several independent variables (Astronomy, Geodesy, chemical, physical, and other statistics).

Group 6.

18. Theory of Mortality, Investments, and Insurance. Second semester [3].

Prerequisite: 12 or 24.

[Not given in 1924-1925.]

Processes of calculation of constant use in life insurance, and of value in related topics.

Group 6.

19 and 20. Introduction to Descriptive Geometry and Mechanical Drawing. First semester [3], second semester [3].

Associate Professor Cowley.

Prerequisite: 1 and 2 or 4.

The discussion of the theory of graphical representation of lines, surfaces, and solids, accompanied by practical drawing.

Group 5.

21. Integral Calculus. First semester [3].

Professor White.

A continuation of 12 or 23.

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

Group 1.

23. Differential and Integral Calculus. First semester [3].

Assistant Professor Smith.

Prerequisite: 4 or 11. [Not open to students who have completed Course 12.]

Derivatives of trigonometric, logarithmic and circular functions and the inverse integrals. Application to the areas of plane figures, length of curves, volumes of solids and centers of gravity.

Group 7.

24. Integral Calculus. Second semester [3].

Assistant Professor Smith.

A repetition of Course 21.

Prerequisite: 23 or 12.

Group 7.

1924-25

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

ASSISTANT PROFESSOR SMITH.

Prerequisite: 12.

Hours to be arranged.

26. Synthetic Projective Geometry. Second semester [3].

PROFESSOR WHITE.

Prerequisite: 11.

The course includes the essential topics of elementary projective geometry, developing systematically the principal theorems on conic sections and ruled surfaces of the second degree. This course is designed as a supplement to 1, 11 and 15.

Group 5.

29. Descriptive Geometry and Mechanical Drawing. First semester [1].

ASSOCIATE PROFESSOR COWLEY.

Prerequisite: 1 and 2 or 4.

Group 9, Tu.

33. Development of European Mathematics since A. D. 1500. First semester [2].

PROFESSOR WHITE.

Prerequisite: 12 or 23, and one year of Physics or Astronomy.

The modern revival and immense extension of natural science have been accompanied by rapid development of old and new mathematical theories. A summary sketch of these advances, in brief lectures, will give elementary notions and discoveries in Algebra, Theory of Numbers, Analysis of Infinitesimals, Analytical Geometry, Synthetic Projective Geometry, Invariants, and the Theory of Groups. Collateral reading will be expected, chiefly biographical and historical.

37. Mathematics of Finance. First semester [3].

ASSOCIATE PROFESSOR CUMMINGS.

Prerequisite: 1, and 2 or 4.

The mathematical theory of interest, refunding of debts, valuation of bonds, depreciation, loan associations,

theory of probability and its application to simple problems in life annuities.

The aim of this course is to illustrate the applications of mathematics in financial transactions to such an extent as may be of value to the general student, and to acquaint the student with the technique of financial calculation.

Group 2.

41. Shades, Shadows, and Perspective. First semester [3].

ASSOCIATE PROFESSOR COWLEY.

Prerequisite: 19 and 20.

Application of the methods and constructions of Descriptive Geometry to the study of Shades, Shadows, and Perspective. Largely, but not exclusively, practical.

Group 11.

101 and 102. Modern Methods of Analytic Geometry. First semester [3], second semester [3].

ASSOCIATE PROFESSOR COWLEY.

Prerequisite: 12 or 23.

This course traces the evolution and application of the notions, transformation and group, in recent 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 utility of algebra and geometry. This course is useful to those intending to teach or to pursue advanced studies.

Group 10.

111 and 112. Advanced Integral Calculus and Differential Equations. First semester [3], second semester [3].

ASSOCIATE PROFESSOR WELLS.

For the work of either semester, 12 and 21 are sufficient preparation.

111, Hours to be arranged; 112 in Group 4.

Vassar 1924-25
College

113. Partial Differential Equations. First semester [3 or 4].

ASSOCIATE PROFESSOR WELLS.

Prerequisite: 112.

This course makes a brief study of the four noted equations of Legendre, Bessel, Riccati and Gauss, and takes up some of the topics of partial differential equations with special reference to the potential.

Group I.

114. Theory of Functions of a Complex Variable. Second semester [3 or 4].

ASSOCIATE PROFESSOR WELLS.

Prerequisite: 21 or 24.

The fundamental ideas of the algebra and calculus of complex numbers; their geometric representation; and introduction to the theory of power series and the properties of analytic functions.

Hours to be arranged.

115 and 116. Analytic Mechanics. First semester [3], second semester [3].

PROFESSOR WHITE.

Prerequisite: 21 or 24.

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 21 may elect this course at the same time, after consultation with the instructor.

Group I.

MINERALOGY

(See Geology.)

MUSIC

PROFESSOR GOW, PROFESSOR DICKINSON, PROFESSOR GEER, PROFESSOR CHITTENDEN, MR. NICHOLS, MISS LITTLEHALES, MISS NORTH, MISS STEEVES, MISS WOODRUFF, MISS LEACH, MR. SEVASTA; MISS DAVIS, (Marston Fellow).

For courses in Applied (practical) Music, see page 184.

Students electing music courses as a part of the required sequential study (see page 99), may count in such study any credit courses, including courses in Applied Music, with the following restriction: of 18 and 28, one only may be reckoned as a part of the sequential study.

Beginning with the class of 1926, students electing music courses as a part of the required sequential study, may count in such study, with due regard for prerequisites, any of the following courses: 13 and 14, 13 and 20, 17, 21 and 22, 23, 24, 25 and 26, 33, 34; and Applied Music courses as follows:

Pianoforte beginning with 121

Organ beginning with 123

Singing beginning with 125, *and excepting* 155, 156.

Violin beginning with 127

Violoncello beginning with 129

THEORY AND COMPOSITION

13 is prerequisite to all other courses in Theory and Composition. After 13 there is a division of purpose: students who have interest and ability in constructive theory and composition may take 14, 23, 24, 33, and 34; students who do not wish to carry on the creative side of musical theory, but who value an understanding of the structure of music, may continue with 20 and supplement it with the advanced courses 25 and 26.

13. Elementary Theory. Open to all classes. First semester [3].

MISS WOODRUFF AND MISS DAVIS.