THE
JOHNS HOPKINS
UNIVERSITY CIRCULAR

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J Hopkins 1915-16

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REQUISITES FOR THE DEGREE OF BACHELOR OF ARTS

As evidence that the collegiate course has been successfully completed, the degree of Bachelor of Arts is conferred at its close. The degree signifies in the case of every recipient such instruction in ancient and modern languages, in mathematics and the physical and natural sciences, in literature, philosophy, and history, as is believed to be essential to a liberal education.

The courses of study are selected (as already stated) under the guidance of Advisers; and, expressed in mathematical language, 125 "points" * are required for graduation. At the end of his first year of residence, each student selects some subject called his "major" which he wishes to study with special attention during his remaining years of residence; and during these years he must follow at least two courses in this subject and at least two in some cognate subject approved by his Adviser.

All candidates for a degree must take courses in the following subjects:

English Composition
English Literature
French †
German †
History, or Political Economy, or Political Science
Biology, or Chemistry, or Geology, or Physics
Philosophy
Public Speaking
Physical Exercise

The remaining courses necessary to complete the number of required "points" are chosen by the students subject to the

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* For the definition of a "point" see page 262.
† See footnote on page 273.

regulations of the Board of Collegiate Studies and to the approval of the Adviser.

In their first year of residence all students take the following courses:

a. English Composition.
b. French or German.
c. d. Two of the following: Latin Greek, Mathematics, Physics.
e. Physical Exercise.

It is recommended that the following courses—required of all students—be taken in the second year:

a. English Literature.
b. German or French.
c. One of the following: History, Political Economy, Political Science.
d. Public Speaking.

In their third year, all students are expected to follow a course in Philosophy.

Period of Residence. A student may be admitted to advanced standing, in accordance with the regulations given on page —, but in all cases the candidate must pursue the last year of his undergraduate course in this institution.

In general, four years of residence are necessary for the completion of the courses required for a degree. A capable student may, however, complete this work in three years. Such a student may—

(1) anticipate certain of the courses by special examination at entrance.*

The courses that may be thus absolved are first-year courses in languages (except English), in Mathematics, and in Chemistry. Under ordinary circumstances a student is not allowed to anticipate at entrance more than two courses.

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* A form of application for this privilege is provided and must be obtained from the Registrar.

The examination for absolving courses at entrance will be held at or near the time of the regular matriculation examination in September, and those who wish to anticipate courses *must make application, and take the examination, in the September next preceding entrance into the University.* In case a condition is incurred, it may not be absolved until the September examination of the following year.

The application must be in the hands of the Registrar of the University *at least one week before the examination.*

(2) present himself, at the beginning of an academic year, for examination in a single course, provided the Committee on Admission and Advanced Standing, being satisfied that the student can obtain competent instruction, has authorized him, *in advance,* to prepare this course during the summer vacation.* [Courses helpful in this preparation are given in this University during the summer; see special announcement of Summer Courses.]

In all such cases the instructor must be approved by the examiner before whom the student is to come, and must not be changed except with the examiner's consent, and the instruction must conform to the directions of the examiner in (*a*) the number of hours per week and the number of weeks, and (*b*) the amount and quality of the work done. The instruction must be regular and systematic, and must approximate in number of hours the time given to the course in the University. It must constitute a full equivalent of that course.

The examination will be both oral and written, and must be reported to the Registrar upon the usual blank. The time for the examination will be determined by the Committee.

(3) take, under certain conditions, in any year of residence except the first, a greater number of courses than is called for in the program.

Students who give evidence of especial ability by passing at entrance one or two courses for advanced standing, or by attaining a high grade in the scholarship examination, or by submitting evidence of exceptional proficiency from the schools in which they were

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* A form of application for this privilege is provided and must be obtained from the Registrar.

prepared for college, may be permitted to take in the first year one or more courses additional to the number scheduled for that year.

(4) offer 119 " points " for graduation instead of 125, in accordance with the following provision :

In case a student has an average of not less than 9 for the work of his third year, and has not received a mark as low as 7 for any of his courses since admission to the University, he need offer only 119 " points " for graduation.

A student whose average in his studies for each of his last two years has not been less than 9, and who has not received a mark less than 7.5 in any of his courses during his last three years, shall receive his degree WITH HONOR.

Special students who have been in residence at least two years, and who have completed their work in a satisfactory manner, may receive certificates stating the facts and signed by the President of the University.

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MATHEMATICS

The advanced courses are so arranged that a qualified student gets in three years the more important points of view of the whole subject. The courses are elastic in character, subjects being introduced as they are needed. In general, the plan pursued is to foster independent inquiry on the part of the student. Once embarked on investigation, he uses all the apparatus of lectures and library with intelligent purpose. The seminary, which meets weekly, is primarily intended for the presentation of the results of the student's own thinking. Literature either intrinsically important or opportune is presented and discussed in the reading class, which also meets weekly. The following courses are offered:

ADVANCED COURSES

1. **Mathematical Seminary.**
One hour weekly. Professor MORLEY.

2. **Reading Class.**
One hour weekly. Professor MORLEY.

3. **Higher Geometry.**
Three hours weekly, first half-year. Professor MORLEY.
This is a general course in Geometry, covering in three years such matters as Projective Geometry, the Invariants of Algebraic Forms, Line Geometry, Conformal Geometry, Geometry on an Algebraic Curve and Surface.

4. **Theory of Functions.**
Three hours weekly, second half-year. Professor MORLEY.
Algebraic Functions and their Integrals; Elliptic, Elliptic Modular, and General Automorphic Functions; Theory of the Potential.

*5. **Dynamics.**
Two hours weekly, second half-year (every other year). Professor MORLEY.
Special stress is laid on Rigid Dynamics.

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* Courses thus marked will not be given in 1915–16.

*6. Vector Analysis.

Two hours weekly, first half-year (every other year). Professor MOBLEY.

7. Elementary Theory of Functions.

Two hours weekly. Associate Professor COHEN.

An introduction to the theories of functions of a real and a complex variable.

8. Differential Equations.

Two hours weekly. Associate Professor COHEN.

Including, in three years, Ordinary Differential Equations, their Integral Curves and Singular Points; Partial Differential Equations; Lie's Theory.

*9. Differential Geometry.

Two hours weekly. Associate Professor COHEN.

Including a study of Curves in Space; Surfaces and Lines upon them; Spherical Representation; Applicability of Surfaces.

*10. Calculus of Variations.

Two hours weekly. Associate Professor COHEN.

*11. Theory of Numbers.

Two hours weekly, one-half year. Associate Professor COHEN.

12. Theory of Groups.

Two hours weekly. Associate Professor COBLE.

Including Theory of Equations, Finite Geometries, Theory of Algebraic Forms.

13. * Theory of Correspondence.

Two hours weekly. Associate Professor COBLE.

Including such matters as Cremona Transformations, General Birational Transformations.

14. Theory of Probability.

Two hours weekly, one-half year. Associate Professor COBLE.

Including the applications to statistics and the Theory of Errors.

15. The Differential Equations of Mathematical Physics.

Two hours weekly, first half-year. Dr. BATEMAN.

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* Courses thus marked will *not* be given in 1915–16.

UNDERGRADUATE COURSES

1. Plane Analytic Geometry; Elements of Calculus.

Three hours weekly. Professor HULBURT, Associate Professors COBLE and COHEN and Dr. SHENTON.

Conference.

Two hours weekly.

2. Differential and Integral Calculus.

Three hours weekly. Professor HULBURT and Dr. SHENTON.

Conference.

Two hours weekly.

3. Calculus (special topics); Determinants; Differential Equations; Mechanics.

Three hours weekly. Associate Professors COBLE and COHEN.

Conference.

Two hours weekly.

4. Projective Geometry; Higher Plane Curves.

Three hours weekly. Professor HULBURT.

Conference.

Two hours weekly.

PHYSICS AND ASTRONOMY

The Physical Laboratory offers facilities in the form of apparatus, libraries and machine shops to students who wish to pursue experimental investigations in any field of Physics. If the results of these are to be offered as a dissertation for the degree of Doctor of Philosophy, the work must be done under the general direction of the Director of the Laboratory, or of one of the other professors. For students carrying on experimental researches the laboratory is open daily, except Saturdays, from 9 a. m., until 5 p. m., and on Saturdays from 9 a. m. until 1 p. m.