(b) Second Semester *Advanced Arithmetic.* Review and study of subjects that pupils in the grammar school have difficulty in mastering. By the free use of Algebra, Arithmetic is made easier and the former subject is reviewed.

Open to Sophomores who have completed Course I. Five periods a week.

Course III.—Plane Geometry. The step from the simple geometric discussions in Arithmetic and Algebra to rigorously logical Demonstrative Geometry is not attempted hastily In the beginning the heuristic method predominates. An introductory course covers the first four weeks. Algebra is used to supplement the Geometry. Many original exercises are solved.

Open to Juniors who have completed Elementary Algebra through simple quadratic equations. Five periods a week.

Course IV.—(a) First Semester *Advanced Algebra.* The topics covered in Elementary Algebra are thoroughly reviewed and amplified. The course also comprises Synthetic Division, Graphical Methods, Progressions, Logarithms, Variation, Binomial Theorem for Positive Integral Exponents, Theory of Quadratics, Complex Numbers. Problems from Arithmetic, Geometry, and the physical sciences are made prominent.

Open to students who have completed Algebra through simple quadratic equations and Plane Geometry

(b) Second Semester *Solid Geometry.* Lines and Planes, Polyhedrons, Cylinders, Cones, and Spheres are treated. Easily constructed models are used in the introductory work. Frequent references to Plane Geometry are made.

Open to Junior Middle or Senior Middle students. If college credit is to be given, supplementary work will be assigned. Five periods a week.

Course A.—(1) *College Algebra.* A brief review, followed by a treatment of topics especially helpful in Trigonometry, Analytic Geometry, and the Calculus.

Four periods a week. First Semester

(2) *Plane Trigonometry.* The work consists of Trigonometric Functions and Formulæ, Theory and Use of Tables, Solution of Right and Oblique Triangles (with applications to Problems of Physics and Surveying), Inverse Functions, Trigonometric Equations. The data for several surveying problems is obtained in the field with the transit, tape, etc.

Four periods a week. Second Semester

Course B.—(1) First Semester *Analytic Geometry.* Graphical Representation of Points and Curves in a Plane, Determination of the Properties and Relations of Plane Curves by a study of their Equations and Graphs. The Straight Line and the Conic Sections are fully investigated. The course includes an introduction to Analytic Geometry of three dimensions.

(2) Second Semester *Differential Calculus and an Introduction to Integral Calculus.* Differentiation and Integration of Functions, with the usual Geometric and Mechanical Applications.

Prerequisite, Course A. Four periods a week.

Course C.—History and Pedagogy of Mathematics. Designed especially for prospective teachers of Elementary and Secondary Mathematics.

(1) First Semester *History of Mathematics.* Development from the earliest times, primarily from the biographical standpoint.

(2) Second Semester *Pedagogy of Mathematics.* The best educational thought of the day relating to the teaching of Arithmetic, Algebra, and Geometry

Prerequisite, Course A. Four periods a week.

SCIENCE

In solving the problems of everyday life, a knowledge of the fundamental ideas of Chemistry, Physics, and the Biological Sciences is absolutely essential. In offering these courses here, the aim is to develop the powers of accurate observation by aiding the student to gain first-hand information, to acquaint the student with modern scientific methods and their relation to daily living, and to lay the foundation for further work in these subjects.

Chemistry

Course I.—Elementary Chemistry. Course for beginning students, including a study of the common elements and their important compounds.

Laboratory and Recitation, eight periods. Open to Junior and Junior Middle students.

Course II.—Household Chemistry. A practical course, especially designed for Home Economics students.

Prerequisite, Course I.

Laboratory and Recitation, eight periods.

Course A.—General Chemistry. A college course in Inorganic Chemistry A study of the more important elements—their occurrences, uses, and the laws governing their actions.

Laboratory and Recitation, eight periods. Open to Senior Middle and Senior students.

Course B.—Organic and Household Chemistry. The Chemistry of Foods, preceded by an introduction to Organic Chemistry

Prerequisite, Course I or A.

Laboratory and Recitation, eight periods. Open to Senior Middle and Senior students.