

Mathematics Courses.continued

ALGEBRA 1A
(1 Credit - 1 Year)

Grade 09 **194**
 195

Grade 10-12 **203**
 204

This yearlong course is designed for students who want to take Algebra but at a slower pace. Algebra 1A and 1B take two years to cover the same material covered in a traditional one-year Algebra class. This course will include an introduction to Algebra, addition, subtraction, multiplication, and division of signed numbers, solving equations, polynomials, factoring, and some work with Algebraic fractions.

ALGEBRA 1B
(1 Credit - 1 Year)

Grade 10 -12 **206**
 207

This yearlong course covers the second half of a traditional Algebra course and picks up where Algebra 1A leaves off. This course will include: review of Algebra 1A, applying fractions, linear equations, systems of equations, functions, inequalities, rational and irrational numbers, and quadratic functions.

***Prerequisite: Algebra IA**

MATH EXPLORATIONS
11-12
(1 Credit - 1 Year)

213
214

Students who have been turned off by the drudgery of arithmetic will find this class both challenging and engaging. We will explore patterns, probability, number theory, logic problems, and other big ideas in mathematics. Students will leave this class equipped with various techniques of problem solving.

ALGEBRA
(1 Credit - 1 Year)
Grade 09-12

197
198

Colleges and universities require mastery of Algebra in preparation for studying not only sciences, but also a variety of professional fields. Therefore, it is the first course in the usual main sequence for college and technical bound students. The course includes, solving equations, polynomials, factoring, algebraic fractions, linear equations, systems of equations, and other algebraic topics. Students who receive a "C" or better in Algebra should be prepared to move into Geometry.

Mathematics Courses.continued

GEOMETRY (1 Credit - 1 Year)

Grade 09 200
 201

Grade 10-12 222
 223

***Prerequisite: Must have earned a “C” or better in Algebra or Algebra IB to register for Geometry**

Geometry is a study of mathematics, which is concerned with the properties and measured relations between lines, angles, surfaces, and solids. Although it would not be correct to say that the study of geometry requires no arithmetic or algebra, for much of the course, the emphasis is on discovery, logical reasoning, insight into the cause of things, and the presentation of sound convincing arguments. Students who receive a “C” or better in Geometry should be prepared to move into Advanced Algebra.

ADVANCED ALGEBRA (1 Credit - 1 Year)

Grade 10-12 225
 226

***Prerequisite: Must have earned a “C” or better in Geometry to register for Advanced Algebra**

Advanced Algebra is the second year of Algebra, in which the skills and concepts learned in Algebra I are reinforced and extended: solving equations, factoring, polynomial arithmetic, concepts in trigonometry and problem solving are among the major topics considered. Any student considering college or technical school, especially any one anticipating a career in a science or a technical area, should take (at a minimum) high school mathematics coursed through Advanced Algebra. This course is a prerequisite for Precalculus, and it is strongly recommended before taking Trigonometry.

Note: A yearly average grade of “C” or better in Algebra and Geometry is **REQUIRED**.

TRIGONOMETRY 11-12 (1/2 Credit - 1 Sem) 228

***Prerequisites: Algebra or Algebra IB, Geometry & Advanced Algebra**

Trigonometry is intended for those students who have taken algebra, geometry, and advanced algebra, but desire an additional course in mathematics. It will consist of study of trigonometric functions and their graphs, trigonometric identities, radian measure, the solution of triangles, and many practical applications. Trigonometry provides a review of fundamental algebra and is a good preparation for more advanced math courses. This is a good class for seniors who are not taking another math class during their final year. It will help keep their skills sharp for college.

PRECALCULUS 10-11-12(Honors Course) (1Credit - 1 Year) 229 230

***Prerequisites: Advanced Algebra**

Precalculus, as the name indicates, is a mathematics course geared toward preparing a student to study Calculus. Precalulus includes the study of the trigonometric functions, logarithmic and exponential functions, and analytic (coordinate) geometry.

This course is recommended for any student expecting to take Calculus in College.

► College in the Schools
(CTIS) page 4

Mathematics Courses.continued

AP CALCULUS
11-12(Honors Course)
(1 Credit - 1 Year) 232
233

***Prerequisite: Algebra,
Geometry, Advanced
Algebra & Precalculus**

****Teacher Signature
Required From Current Pre-
Calculus Teacher**

**► College in the Schools
(CTIS) page 4**

Calculus, normally a college mathematics course, is offered as a two-semester equivalent of the first semester college course for qualified students. Adequate preparation for Calculus consists of completion of normal mathematics curriculum: Algebra, Geometry, Advanced Algebra and Precalculus. Students who wish to prepare themselves to take the Advanced Placement Calculus (AP) test will be offered the opportunity to so.

The study of Calculus will include a discussion of limits, derivatives of elementary functions and definite and indefinite integrals. Since the material is challenging, Calculus is an honors course and a Teacher Signature is required. Students wishing to study Calculus should “have a thorough knowledge of college preparatory mathematics, including algebra, axiomatic geometry, trigonometry, and analytic geometry. (Rectangular and polar coordinates, equations, and graphs, lines and conics).” From the AP Course Description booklet.

**COMPUTER
PROGRAMMING**
9-10-11-12
(1/2 Credit - 1 Sem) 235

***Prerequisite: Algebra or
Algebra 1B**

Computer Programming 1 is a one semester introductory course for students interested in learning to program using the BASIC language. The course covers such introductory concepts as operations, variables, input and output, looping and arrays. This course, or its equivalent, is a prerequisite to the other computer programming courses at SHS.

COMPUTER SCIENCE
10-11-12
(1 Credit - 1 Year) 236
237

***Prerequisite: Computer
Programming**

**** Teacher Signature
Required From Mr. Frisbe**

Computer Science is a two semester course featuring the Pascal programming language. This course is intended for those who will be pursuing a post-high school career of studies in science, math, computer science, or other fields in which computer programming is necessary. The emphasis in this course will be on correct programming techniques, top-down design of programs, and data structures.