

# Math

## Algebra 1

**Grade:** 9 & advanced 7 or 8

**Prerequisites:** Algebra ½ or A average in Math 87 and teacher recommendation

**Course Duration:** Two Semesters

**Subject Area in which graduation credit is given:**

Mathematics

### **COURSE DESCRIPTION**

Algebra 1 is the introduction of variables, constants, expressions and equations. The course covers topics in the following areas: solving linear and quadratic equations and inequalities, simplifying expressions, order of operations, polynomials, factoring, graphing (both linear and quadratic equations). Emphasis is placed on problem solving techniques.

### **BASIC TEXTS AND TEACHING GUIDES**

*Algebra 1* - Glencoe McGraw-Hill Publishers 2008

## Geometry

**Grade:** 10 & advanced 8 or 9

**Prerequisites:** C or higher in Algebra 1

**Course Duration:** Two Semesters

**Subject Area in which graduation credit is given:**

Mathematics

### **COURSE DESCRIPTION**

Geometry provides students with experiences that deepen the understanding of two and three-dimensional objects and their properties. Properties and relationships of geometric objects include the study of: 1) points, lines, angles, and planes; 2) polygons, with special focus on quadrilaterals, triangles, right triangles; and 3) circles. An understanding of proof and logic is developed.

### **BASIC TEXTS AND TEACHING GUIDES**

*Geometry* - Glencoe McGraw-Hill Publishers 2008

## Algebra 2

**Grade:** 11 & advanced 9 or 10

**Prerequisites:** C or higher in Geometry

**Course Duration:** Two Semesters

**Subject Area in which graduation credit is given:**

Mathematics

### **COURSE DESCRIPTION**

Algebra 2 is a course that expands on the basic algebraic concepts involved in solving equations and inequalities, factoring polynomials, graphs, exponents, and solving quadratic equations. In addition, it examines quadratic, logarithmic, and exponential functions, the application of functions to real world problems, conic sections, probability, trigonometric functions, and complex numbers.

### **BASIC TEXTS AND TEACHING GUIDES**

*Algebra 2* - Glencoe McGraw-Hill Publishers 2008

## Precalculus & Trigonometry

**Grade:** 12 & advanced 10 & 11

**Prerequisites:** C or higher in Algebra 2

**Course Duration:** Two Semesters

**Subject Area in which graduation credit is given:**

Mathematics

**COURSE DESCRIPTION**

Precalculus is designed to increase the students' knowledge of mathematics beyond Algebra II. It provides the background needed to succeed in calculus. This course emphasizes the fundamentals of functions through the study of polynomial, rational, power, exponential, logarithmic, trigonometric, and circular functions. Students thoroughly explore composition, inverses, and transformations of functions. TI-83 or TI-84 calculator is required.

**BASIC TEXTS AND TEACHING GUIDES**

*Advanced Mathematical Concepts: Precalculus with Applications* - Glencoe McGraw-Hill Publishers 2006

# Calculus

**Grade:** Advanced 11 & 12

**Prerequisites:** C or higher in Precalculus and Teacher Recommendation

**Course Duration:** Two Semesters

**Subject Area in which graduation credit is given:**

Mathematics

**COURSE DESCRIPTION**

Calculus is designed for students who have completed all pre-calculus material successfully. The function concept is central to calculus. The course studies this concept graphically, numerically, and symbolically. This approach to functions builds a conceptual understanding of limits and continuity, differentiation, integration, and differential equations. TI-83 or TI-84 calculator is required.

**BASIC TEXTS AND TEACHING GUIDES**

*Calculus: Graphical, Numerical, Algebraic* - Pearson Prentice Hall Publishers 2010