



## ~MATHEMATICS~

### **ALGEBRA I**

Two Semesters Grades 9-10

This course studies the algebra of the real number system and guides the student in the use of previously learned concepts to the discovery of new mathematical concepts and their application. Traditional teaching methods as well as applied math labs, manipulatives, computer labs and cooperative learning will be used.

### **GEOMETRY**

Two Semesters Grade 9-11

*PREREQUISITE: Algebra I*

This is the study of Euclidean geometry, plane and solid, with emphasis on application and practical problems. Concepts include congruent triangles, parallel lines, quadrilaterals, circles, similar figures, the Pythagorean theorem and special triangles, perimeter, area, volume, regular polygons, and right-triangle trigonometry. The course integrates standard approaches, discovery lessons and hands-on teaching methods. A system of logical thought is developed through basic geometric concepts and their application.

### **HONORS GEOMETRY**

Two Semesters Grades 9-11

*PREREQUISITES: Min. B+ in Algebra I and department approval.*

An honors section of Geometry is offered, in which students apply the concepts of Geometry at a more advanced level and at a faster pace.

### **ALGEBRA II**

Two Semesters Grades 9-12

*PREREQUISITE: Algebra I and Geometry.*

This is a second year course in Algebra, emphasizing linear, quadratic and polynomial functions as well as solving systems of equations. Emphasis is placed on understanding key mathematical ideas and applying them to problem solving. Students will be introduced to graphing calculators and will use them extensively. Trigonometry will not be covered.

### **HONORS ALGEBRA II/TRIG**

Two Semesters Grades 9-12

*PREREQUISITE: Min. B+ in Geometry and Algebra I and department approval.*

This is a continuation of the structure of the Algebra or the real number system with emphasis on linear, quadratic and polynomial functions. An introduction to circular and trigonometric functions is also provided. Concepts will be reinforced with extensive use of graphing calculators.

### **PRECALCULUS**

Two Semesters Grades 9-12

*PREREQUISITE: C grade in HATT or B grade in Algebra II and department approval*

This course is designed for students who have completed a second year of Algebra; the course covers a series of topics that use skills learned in Algebra and Geometry. Topics covered will include functions, logarithms, vectors, matrices, polar graphs and equations, sets, logic and trigonometry. Graphing calculators will be used extensively.

### **HONORS PRECALCULUS**

Two Semesters Grades 9-12

*PREREQUISITES: Min. B+ in Algebra II/HATT and department approval.*

An honors section of Precalculus is offered, in which students learn and apply the concepts at a more advanced level and at a faster pace.

### **CALCULUS**

Two Semesters Grades 9-12

*PREREQUISITE: B in Pre-Calculus or HATT and Department Approval*

This course is concerned with developing the students' understanding of the concepts of calculus and providing experience with its methods and applications. Topics covered include limits, differentiation, integration, logarithmic, exponential, trigonometric and hyperbolic functions, applications, and infinite series. Concepts, results and problems are expressed graphically, numerically, analytically and verbally.

**AP CALCULUS AB**

Two Semesters Grade 9-12

*PREREQUISITE: Department approval.*

This course is an advanced version of Calculus for highly motivated students preparing for the AP Calculus exam. Topics covered include limits, differentiation, integration, logarithmic, exponential, trigonometric and hyperbolic functions, applications, and infinite series. Concepts, results and problems are expressed graphically, numerically, analytically and verbally. The AP exam is required for all students enrolled in this course.

**AP STATISTICS**

Two Semesters Grade 11-12

*PREREQUISITE: Department approval.*

This course is a college-level introduction to Statistics that covers the following areas: exploration and interpretation of data (categorical, quantitative, univariate, bivariate), graphs to represent statistics (bar graphs, pie charts, histograms, ogives, scatterplots), normal distributions, sampling methods, experiments and design, simulations, probability, random variables, binomial and geometric distributions, sampling distributions and statistical inference. The AP exam is required for all students enrolled in this course.