

# MATHEMATICS

## Transition Math (9)

1 credit

No Fee

This course is designed to assist students in preparing for Algebra I and other academic math courses. Transition math begins with an extensive review of the four basic operations with integers, fractions, and decimals. It continues with a review of ratios, proportion, and the use of formulas. Basic concepts of Algebra are introduced throughout the course. **To successfully complete the class it will be necessary to take notes, read the text, and complete all homework assignments on time. An OGT or equivalent calculator is required.**

## Algebra I (9-12)

1 credit

No Fee

*Pre-requisite: Transition Math*

This course implements the shift from manipulative skills to Algebra as a means of representation. Students explore the language of Algebra in verbal, tabular, graphical, and symbolic forms. Problem-solving activities and applications encourage students to model patterns and relationships with variables and functions. Algebra I is taught at the level required for the new O.G.T. Below are the topics that are taught:

- 1) Sign numbers
- 2) Laws of exponents
- 3) Absolute value
- 4) Systems of equation
- 5) Roots
- 6) Polynomials
- 7) Factoring
- 8) Unions and intersections
- 9) Application problem
- 10) Modeling

**An OGT or equivalent calculator is required.**

## Geometry (9-12)

1 credit

No Fee

*Pre-requisite: Algebra I*

This course aims to teach logical thinking. It deals with the study of points, lines, angles, polygons, measurement formulas, 3-dimensional formulas, congruence, and similarity. It encompasses its close relationship with Algebra by using coordinate and algebraic means to verify the synthetic representations. Students use algebraic tools to verify properties of figures presented on a coordinate plane. Compass, straightedge, and protractor are tools students will use during the course. Use of geometry in today's world will be discussed. **An OGT or equivalent calculator is required.**

## Honors Geometry (9)

1 credit

No Fee

*Pre-requisite: Honors Algebra I or an "A" in Algebra I + Teacher Recommendation*

This course is designed to expand the topics covered in the basic course. Other topics that will be included are indirect proof, conic sections and vectors. Graphing calculators will be more prevalent than in the basic course. Transformations, coordinate geometry, proofs, and construction will be stressed throughout the course. **An OGT or equivalent calculator is required.**

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**Math Standards (11-12)** 1 credit No Fee

*Pre-requisite: Geometry + counselor recommendation*

The Math Standards course is for those students who need improvement on their math skills and/or want help to pass the state required OGT Math test. In addition, it will provide support for students on math concepts for courses that they have not taken.

**An OGT or equivalent calculator is required.**

**Algebra II (10-12)** 1 credit No Fee

*Pre-requisite: Geometry + Teacher recommendation.*

Algebra II is a brief review of the concepts learned in Algebra I, followed by work with exponents, graphing, solving equations, factoring, systems of equations, radical expressions, imaginary numbers, and an introduction to exponential and logarithmic functions. All of the previously mentioned topics will be related to **application** problems found in advanced mathematics, chemistry, and physics. The **TI 83 Plus or TI 84 Plus Silver edition** or equivalent calculator **is required.**

**Honors Algebra II (10-12)** 1 credit No Fee

*Pre-requisite: Honors Geometry or an "A" in Geometry + Teacher recommendation*

This course extends the scope and sequence of the regular Algebra II course. Being that the pace of instruction is quicker, the students will deal with a greater number of concepts presented in an abstract format. The utilization of technology (TI-83 and the Smart Board) creates a situation in which interesting, relevant and exciting topics can be pursued. The **TI 83 Plus or TI 84 Silver Edition** or equivalent calculator **is required.**

**Advanced Math (11-12)** 1 credit No Fee

*Pre-requisite: Algebra II + Teacher recommendation*

Advanced Math incorporates the concepts of trigonometry and advanced algebra. Trigonometry aims to develop mathematical competence in two areas: the study of triangles and the development of the analytic properties and relationships of the trigonometric function. Trigonometry is quite different from Algebra or Geometry even though a good background in each is required. The course presents the six trig functions and their interrelationships. **To successfully complete the class it will be necessary to take notes, keep a notebook, read the textbook, and complete all homework assignments on time.** Advanced Algebra includes topics from analytic geometry. The purpose of this course is to offer a background for Calculus in college. The **TI 83 Plus, TI 84 Silver Edition** or equivalent calculator **is required.**

**Honors Advanced Math (11-12)** 1 credit No Fee

*Pre-requisite: Honors Algebra II + Teacher recommendation*

Honors Advanced Math will build upon those topics of Trig introduced in Honors Algebra II. The pace will be fast and remediation limited. H.A.M. will cover all topics of Advanced Math and also: mathematical induction, binomial expansion, conic sections, sequences and series, summation notation, graphing in both the rectangular and polar systems with conversion between the two systems. Good attendance and study skills are essential for success. The emphasis in this course is Algebra and Trigonometry at a

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level to be successful in A.P. Calculus. **A TI 83 Plus, TI 84 Silver Edition or equivalent calculator is required.**

### **AP Calculus (11-12)**

1 credit

No Fee

*Pre-requisite: Advanced Math + Teacher recommendation*

Calculus is designed for the serious college-bound student. Topics covered are those usually covered in a college freshman level course. A review of pre-calculus concepts will be followed by a study of limits, derivatives and integrals. Applications of each concept will be supplemented with the use of the graphing calculator. **A TI 83 Plus, TI 84 Silver Edition or equivalent calculator is required** for this course.

### **College Prep Math (12)**

1 credit

No Fee

*Pre-requisite: Passing grade in Algebra II + Teacher recommendation*

This course will give a solid and extensive review of concepts of algebra and geometry as well as offer an introduction to trigonometry. It will be scientific and/or graphic calculator based. It is designed to prepare students for upcoming college math placement tests. **A TI-83 or equivalent calculator is required.**

### **Data Analysis (10-12)**

1 credit

No Fee

*Pre-requisite: Teacher recommendation*

The Data Analysis course will develop the fundamental groundwork that will acquaint the beginning students with the importance of data collection and its measurement. The student will examine data through charts, tables, and data plots. Student projects will be established so that data derived will be practical and model real world situations. **A TI 83 calculator is required.**

### **Consumer Math (11-12)**

1 credit

No Fee

*Pre-requisite: Geometry + Teacher recommendation*

Topics include those needed in real-life situations: checking, savings, insurance, renting versus buying a home, leasing versus buying a car, credit and debit cards, and taxes – federal, state, local, including types of tax issues. Practical retirement planning will also be discussed. Completing applications and interview skills will also be covered. Life projects involving research will be required along with other possible projects. **An OGT or equivalent calculator is required.**