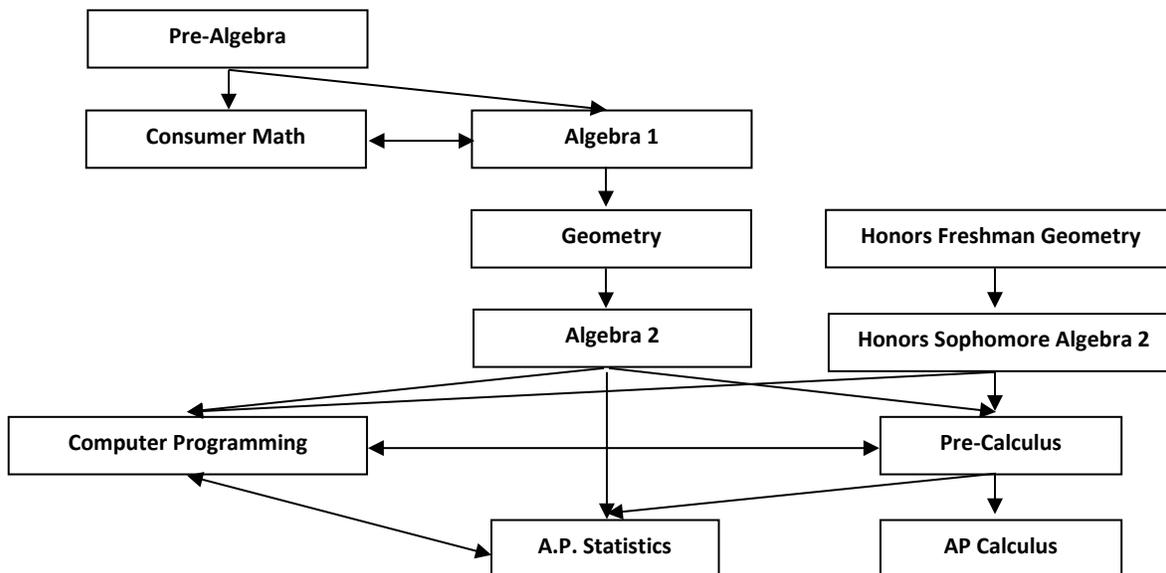# MATHEMATICS COURSE DESCRIPTIONS

Students who do not pass the first semester of a year-long math class will be counseled as to whether continuation in the class is advisable. The student will discuss this matter with both the math teacher and guidance counselor.

Students who do not pass the second semester of a year-long math class may be required to repeat the first semester. This may be necessary to adequately prepare them to repeat the second semester. Credit received during the repeated semester will count towards graduation but not toward the math credit requirement for graduation.

MATHEMATICS COURSE OFFERINGS & SEQUENCES

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                  ┌─────────────┐
                  │ Pre-Algebra │
                  └─────────────┘
                    │         │
        ┌───────────────┐   ┌───────────┐
        │ Consumer Math │◄─►│ Algebra 1 │
        └───────────────┘   └───────────┘
                                 │
                          ┌───────────┐   ┌──────────────────────────┐
                          │ Geometry  │   │ Honors Freshman Geometry │
                          └───────────┘   └──────────────────────────┘
                                 │                    │
                          ┌───────────┐   ┌──────────────────────────┐
                          │ Algebra 2 │   │ Honors Sophomore Algebra 2│
                          └───────────┘   └──────────────────────────┘

  ┌─────────────────────┐                       ┌──────────────┐
  │ Computer Programming│◄─────────────────────►│ Pre-Calculus │
  └─────────────────────┘                       └──────────────┘

              ┌─────────────────┐       ┌──────────────┐
              │ A.P. Statistics │       │  AP Calculus │
              └─────────────────┘       └──────────────┘
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Introductory Mathematics Courses

0210   PRE-ALGEBRA   **GRADE LEVEL: 9, 10**   **CREDIT: 1**

This course is designed to prepare students with the basic skills necessary for success in Algebra 1. Topics to be covered will include basic number operations, introduction to variables, linear equations of one and two variables, ratios and proportions, and beginning properties of Algebra.

0220   CONSUMER MATHEMATICS   **GRADE LEVEL: 11, 12**   **CREDIT: 1**
Instructor consent required

This course is devoted to typical, everyday consumer problems where mathematical skills often must be applied. General contents covered are buying problems, wages and commissions, borrowing money, saving and investing, house expenses, and taxes. Lifetime math skills are emphasized. This course is NOT recommended for students who have passed Algebra 1 with a "C" or better average. *Please note: Students who have taken or are planning to take Personal Finance and/or Intro to the Real World should <u>not</u> take this course.*

0211   ALGEBRA 1   **GRADE LEVEL: 9, 10, 11**   **CREDIT: 1**

This is a one-year course that uses an integrated approach to teaching the beginning concepts of Algebra, the language of mathematics. Students will learn to apply linear and exponential equations and inequalities to real world situations. This course will introduce to students the beginning concepts of statistics and mathematical modeling. Emphasis will be placed on developing those skills necessary to continue in Geometry.

0222   GEOMETRY   **GRADE LEVEL: 10, 11, 12**   **CREDIT: 1**
Prerequisite: Algebra 1

Geometry is an integrated approach to mathematics where topics of geometry, algebra, and trigonometry will be taught. Students using appropriate mathematics and technology solve real world problems. The objectives of this class are to help students grow in their ability to reason deductively as well as inductively. Analyzing and solving problems involving area, volume, trigonometry, and coordinate geometry will be explored.

0216   HONORS FRESHMAN GEOMETRY   **GRADE LEVEL: 9**   **CREDIT: 1**
Instructor consent required

Honors Freshman Geometry is an algebra-intensive, integrated approach to mathematics where topics of geometry, algebra, and trigonometry will be taught. Real world problems are solved by students using appropriate mathematics and technology. The objectives of this class are to help students grow in their ability to reason deductively as well as inductively. Analyzing and solving problems involving area, volume, trigonometry, and coordinate geometry will be explored. This class is fast-paced, demanding and is designed for highly motivated freshmen that have completed eighth grade advanced math. A recommendation by the eighth grade instructor is also required for admittance to this class.

Advanced Mathematics Courses

0230   ALGEBRA 2   **GRADE LEVEL: 10, 11, 12**   **CREDIT: 1**
Prerequisite: Geometry
A continuation of Algebra concepts, this course consists of a deeper understanding of the real and rational number systems along with a review of polynomials. Other topics include a review and extension of linear functions, second degree functions, systems of equations, exponential functions, logarithmic functions, circular functions, complex numbers, probabilities, matrices, and determinants. This course is NOT recommended for students who have not passed Algebra 1 with a "C" or better average.

0238   HONORS SOPHOMORE ALGEBRA 2   **GRADE LEVEL: 10**   **CREDIT: 1**
Prerequisite: Honors Freshman Geometry
A continuation of Algebra concepts, this course consists of a deeper understanding of the real and rational number systems along with a review of polynomials. Other topics include a review and extension of linear functions, exponential functions, logarithmic functions, common and natural logs, circular functions, conic sections and their relation to quadratic equations, complex numbers, probabilities and some statistics, sequences and series, matricies, and determinants. This course is designed for SOPHOMORES that have been successful in Geometry their freshman year.

0250   COMPUTER PROGRAMMING FOR MATHEMATICS   **GRADE LEVEL: 11, 12**   **CREDIT: 1**
Prerequisite: Geometry and Algebra 2
This course introduces students to the use of computers in real-world science and mathematics applications. Students will learn to write programs and use spreadsheets to create apps as well as solve a variety of problems. This course is designed to integrate all of the mathematics learned through Algebra 2, and will include several projects. This is an excellent class for students who wish to pursue further education in science, engineering, computer programming, or mathematics.

2338   A.P. STATISTICS   **GRADE LEVEL: 11, 12**   **CREDIT: 1**
Prerequisite: Algebra 2
In Advanced Placement[®] Statistics, students will be introduced to the major concepts and tools for collecting, analyzing, and drawing conclusions from real world data. Students are exposed to four main themes: sampling and experimentation, exploring data, probability and random variables, and statistical inference. As an A.P. class, this class will be taught as an equivalent to a college-level statistics class so expectations are high. It is a challenging math course that incorporates reading, analyzing, thinking and writing clearly. The course culminates with the A.P. exam, giving students the opportunity to demonstrate the knowledge and skills required to receive college credit.

0232   PRE-CALCULUS   **GRADE LEVEL: 11, 12**   **CREDIT: 1**
Prerequisite: Geometry, and grade "C" or better in Algebra 2
The primary purpose of Pre-Calculus is to prepare the student for an introductory Calculus course at the college level. Pre-Calculus provides a review as well as further development of topics encountered in Algebra 2 and Geometry. The second semester will be a study of trigonometry. This course requires strong math skills and a thorough understanding of both Algebra 2 and Geometry. Pre-Calculus is a DEMANDING, UPPER-DIVISION, ELECTIVE MATH COURSE requiring a commitment to hard work.

2335   A.P. CALCULUS AB   **GRADE LEVEL: 11, 12**   **CREDIT: 1**
Prerequisite: Pre-Calculus
Calculus is the study of motion and change. Students will study limits, derivatives, and integrals. This course is <u>highly recommended</u> for those anticipating enrollment in Calculus at a college level. As an Advanced Placement[®] course, this class will be taught as an equivalent to a collegiate Calculus I class. As such, students should expect a heavy workload. This course culminates with the A.P. Exam, giving students the opportunity to demonstrate the knowledge and skills required to receive college credit.