**Mathematics Course Descriptions**

**Revised: 2017**

**Foundations of Algebra**

Foundations of Algebra in an entry level high school course in the Georgia Standards of Excellence.  This course is usually taken by first year high school students who have demonstrated the need of substantial support to bolster success in high school mathematics, specifically students who have reported low standardized test performance in prior grades and/or have demonstrated significant difficulties in previous mathematics classes.

The course covers topics such as number sense and quantities, to include integers, fractions, and proportions, as well as provides fundamental skills to aid in the transition from arithmetic to algebra to include quantitative reasoning and functions.

This course is only offered as a semester long course.

**Algebra 1**

Algebra 1 is the first high school course in the Georgia Standards of Excellence. This course is usually taken in the first year of high school. Students are required to take an End of Course Georgia Milestone in order to receive credit for the course.

This course covers topics such as writing and solving multi-step equations, characteristics and the application of linear, quadratic, and exponential functions, as well as a unit on data analysis.

This course can be taken as a semester or year long course.

**Accelerated Algebra/Geometry**

Accelerated Algebra/Geometry is the first course in a sequence of mathematic courses designed to ensure that students are prepared to take higher - level mathematics courses during  their high school career including Advanced Placement Calculus AB. Students are required to take an End of Course Georgia Milestone in order to receive credit for the course.

this course covers categories including Number and Quantity, Algebra, Functions, Geometry, and Statistics and Probability. Some of the topics are relationship between quantities and expressions, linear equations and inequalities, quadratics, exponential  functions, describing data and transformation of geometric shapes.

This course is only offered as a semester long course.

**Accelerated Geometry /Algebra II**

Accelerated Geometry /Algebra IIis the second in a sequence of mathematics courses designed to ensure that students are prepared to take higher‐level mathematics courses during their high school career, including Advanced Placement Calculus AB.  Students are required to take an End of Course Georgia Milestone in order to receive credit for the course.

This course covers categories including Number and Quantity, Algebra, Functions, Geometry, and Statistics and Probability. Some of the topics are transformation of geometric shapes, similarity and congruence of triangles, special right angles, circles including volume and cross sectional of 3 dimensional shapes, use of coordinate algebra to verify properties of geometric figures, probability, and  polynomials.

This course is only offered as a semester long course.

**Geometry**

Geometry is the second course in a sequence of three required high school courses designed to ensure career and college readiness. Students must have passed Algebra I in order to register for Geometry. Students are required to take the End of Course Georgia Milestone to receive credit for the course.

Geometry includes the study of transformations of geometric shapes, similarity and congruence of triangles, right triangles trigonometry and Pythagorean Theorem, circle formulas and applications, volume and cross sections of three dimensional shapes, use of formulas from coordinate algebra to verify properties of geometric figures, and the use of independent and conditional probability to interpret data.

Geometry may be taken as a semester or yearlong course.

**Algebra II**

Algebra II is the third course in a sequence of four.  Students must have passed Algebra I and Geometry. Algebra II students pull together and apply the accumulation of learning that they have from previous courses, with content grouped into six critical areas, organized into units.  The students apply methods from probability and statistics to draw inferences and conclusions from data. They expand their repertoire of functions to include quadratic (with complex solutions), polynomial, rational, and radical functions. And finally, students bring together all of their experience with functions to create models and solve contextual problems.

This course is only offered as a semester long course.

**Accelerated Pre-Calculus**

Accelerated Pre-Calculus is the third mathematics course for students taking honors math classes. This class is designed to prepare students for AP Calculus and other college level mathematics courses. Previous successful completion of Accelerated Algebra I and Accelerated Geometry is required to take this course.

Pre-Calculusfocuses on standards to prepare students for a more intense study of mathematics. The study of circles and parabolas is extended to include other conics such as ellipses and hyperbolas. Trigonometric functions are introduced and developed to include inverses, general triangles and identities. Matrices provide an organizational structure in which to represent and solve complex problems. Students expand the concepts of complex numbers and the coordinate plane to represent and operate upon vectors. Probability rounds out the course using counting methods, including their use in making and evaluating decisions.

This course is only offered as a semester long course.

**AP Calculus**

AP Calculus is the fourth mathematics course for students taking honors math classes. It is a yearlong course and students are required to take both semesters. Previous successful completion of Accelerated Algebra I, Accelerated Geometry, and Accelerated Pre-Calculus is required to take this course. One of the main goals of this class is to prepare students for the AP Calculus test.

AP Calculus is a college course designed to cover both Differential and Integral Calculus. Topics covered in this class include limits, derivatives, antiderivatives, definite

and indefinite integrals and the Fundamental Theorem of Calculus. Students will develop skills to answer questions numerically, verbally and graphically. Students also learn to use technology to solve problems and verify results.

This course is only offered as a yearlong course.

**Pre-Calculus**

Pre-Calculus is the expected 4th year math for students who wish to pursue a major or career in a STEM-related field. Candidates for Pre-Calculus will have successfully completed Algebra II and have normally not struggled with prior high school math courses.

Pre-Calculus students will enhance their skills in the 8 Standards of Mathematical Practice through the study of Trigonometric Functions and Identities, Matrix Operations, Conic Sections and Probability. These topics are intended to prepare students for postsecondary mathematics courses.

This course is only offered as a semester long course.

**College Readiness Mathematics**

College Readiness Mathematics focuses on key content and practice standards to ensure that students will be ready for post-secondary academic courses (College Algebra) and career preparation in **non-STEM** (Science, Technology, Engineering, Mathematics) fields. The course will revisit and expand the understanding of content standards introduced in earlier mathematics courses and will emphasize the curriculum of  Algebra I & II, in a variety of contexts. This class is taught in a hybrid format with 50% classroom instruction and 50% online study

This course is only offered as a semester long course.

**Mathematics of Finance**

Mathematics of Finance concentrates on the mathematics necessary to understand and make informed decisions related to personal finance. The mathematics in the course will be based on many topics in prior courses; however, the specific applications will extend the student’s understanding of when and how to use these topics. This class is taught in a hybrid format with 50% classroom instruction and 50% online study

This course is suited for the student who is **not** planning to continue his or her education at college level but rather exit directly to the workforce or attend a technical college and obtain a certificate or diploma.

This course is only offered as a semester long course.

**Statistical Reasoning**

This is a 4th math option for students who have completed Algebra II/Advanced Algebra and have had some success with high school mathematics (As to high Cs). This course goes deeper into statistics by allowing students to design experiments, collect data, analyze data and summarize their findings in an appropriate manner. Students will analyze the characteristics of the distribution of sampling data and learn to make predictions, draw conclusions and validate claims.

This course is suited for the student who intends to go to college, but not pursue a major or field in a STEM-related area. This course is suitable for students who wish to pursue degrees in business, education, psychology, other social sciences, etc.

This course is only offered as a semester long course.