Mathematics Department
Curriculum Overview

9th Grade	10th Grade	11th Grade	12th Grade
Required	*Required*	*Required*	*Required*
Algebra I (1)	Basic Geometry	Geometry	Math for College Readiness
Algebra I (2)	Geometry	Geometry Honors	Discrete Math
Algebra I Honors	Geometry Honors	Algebra II (1)	Pre-Calculus
Basic Geometry	Algebra II (1)	Algebra II (2)	Pre-Calculus Honors
Geometry	Algebra II (2)	Algebra II Honors	Calculus
Geometry Honors	Algebra II Honors	Pre-Calculus	Calculus Honors
Algebra II	Discrete Math	Pre-Calculus Honors	AP Calculus
Algebra II Honors	Pre-Calculus	Calculus	Calculus II Honors
	Pre-Calculus Honors	Calculus Honors	
		AP Calculus	
Electives			
None	None		
		Statistics	Statistics
		Statistics Honors	Statistics Honors
			AP Statistics

Course Descriptions
(Courses listed by level and sequence)

Algebra I *492* Phase 1 SUS/FBF 1200310 [Year]

This course is offered to students who require a slower-paced math course, while at the same time providing students with the necessary skills to successfully complete the objectives of Algebra I. Students enrolled in this course earn the one credit of high school Algebra I required for college admission.

Prerequisite: departmental placement

Algebra I *412* Phase 2 SUS/FBF 1200310 [Year]

This course aims to acquaint students with the basic how and why of algebraic structures. Topics include: the structure of mathematical systems, properties of real numbers, set notation, equations, inequalities, absolute value, relations and functions, rational expressions, radical expressions, polynomials (operations and factoring), graphing, and the translation of word situations into numerical relations.

Prerequisite: departmental placement

Algebra I Honors *413* Phase 3 SUS/FBF 1200320 [Year]

This rigorous course delivers a full-year honors curriculum and prepares students for Honors Geometry and Honors Algebra II. Beginning with a brief review of pre-algebra concepts, students move quickly through familiar content. Real-life applications help students to understand the importance of algebra in our world. Topics include the real number system, solving equations and inequalities, polynomials and exponents, factoring and applications, rational expressions, graphing linear equations, solving linear systems, roots and radicals, and quadratic equations.

Prerequisite: departmental placement

Basic Geometry *481* Phase 1 SUS/FBF 1206300 [Year]

This course represents an introduction to the fundamentals of Euclidean Geometry without formal proofs.

Prerequisite: 79 or below in Algebra I, Phase 2, *or* successful completion of Algebra I, Phase1

Geometry *482* Phase 2 SUS/FBF 1206310 [Year]

This course is offered to students who have successfully completed Algebra 1. Topics covered include points, lines and planes, initial postulates and theorems and their respective proofs, angle relationships, parallel and perpendicular lines, congruent triangles, similar polygons, areas, circles, construction, loci, and coordinate geometry.

Prerequisite: 98 or better in Algebra I, Phase 1; 80 or better in Algebra I, Phase 2; 82 or less in Algebra I/II Honors, or 82 or less in Algebra II/Trig Honors or departmental placement for ninth graders.

Geometry Honors *483* Phase 3 SUS/FBF 1206320 [Year]

This course is offered as the second course in the Honors Program and is intended as a rigorous preparation for the sequential courses in junior and senior years. The course emphasizes critical thinking and brainstorming in predicting, observing and explaining. Objectives are aligned with the State of Florida Standards and consist of an in-depth study of plane and coordinate geometry, providing an accelerated study of Euclidean Geometry, including formal proofs. The objective is to give the student an in-depth study of Geometry with emphasis on the methods of proofs and the formal language of mathematics. Topics include but not limited to the following: logic and reasoning, lines, planes, angles, triangles, similarity, congruence, polygons and circles, area and volume.

Prerequisite: 83 or better in Alg. I/II Honors, 83 or better in Alg. II with Trigonometry Honors, or departmental placement for ninth graders.

Algebra II *461* Phase 1 SUS/FBF 1200330 [Year]

This course is a continuation of the study of Algebra I and includes equations with three variables, determinants, sequences, and series, complex numbers, analytic geometry, exponents, and logarithms.

Prerequisite: Successful completion of Informal Geometry, or 79 or lower in Geometry

Algebra II *462* Phase 2 SUS/FBF 1200330 [Year]

The purpose of this course is to continue the study of the structure of Algebra and to provide a foundation for applying these skills to other mathematical fields, including trigonometry. Topics include real numbers, equations and inequalities in one variable, polynomials, systems of linear equations and inequalities, relations and functions, exponents and radicals, quadratic equations and inequalities: in one variable, ration, proportion, variation, verbal problems, and graphing. Students will also be introduced to the study of trigonometry, which will be continued in the next course in the sequence.

Prerequisite: 98 or better in Informal Geometry, or 80 or better in Geometry; 82 or less in Geometry Honors, if student did not enroll in Algebra I Honors.

Algebra II Honors *470* Phase 3 SUS/FBF 12000340 [Year]

This course represents a comprehensive and intensive study of the topics of Algebra II. Topics covered will include: review of Alg. I topics, a study of functions, equations and their graphs, linear systems of equations, matrices, quadratic equations and their graphs, polynomials and their functions; radical, rational, exponential, logarithmic functions, trigonometric functions and conic sections.

Prerequisite: 98 or better in Algebra I (phase 2), 98 or better in Geometry (phase 2) or departmental placement for ninth graders

Pre-Calculus *434* Phase 2 SUS/FBF 1202340 [Year]

The course is designed to provide the student with the study of functions and other algebraic skills needed for the study of calculus. The course represents an intensive study of analytic geometry, elementary functions and introductory calculus. Topics include concepts of algebra, equations, inequalities, functions and their graphs, polynomial and rational functions, and trigonometry. This course is available for dual enrollment credit.

Prerequisite: 80 or better in Algebra II w/ Trig or 67 to 82 in Geometry/Trig Honors, or 80 or better in Math Analysis, 67-82 in Algebra II/Trig Honors.

Pre-Calculus Honors *433* Phase 3 SUS/FBF 1202340 [Year]

This course is designed to provide the student with the study of functions and other algebraic skills needed for the study of Calculus. The course represents an intensive study of analytic geometry, elementary functions and introductory calculus. Topics include concepts of algebra, equations, inequalities, functions and their graphs, polynomial and rational functions, and trigonometry. This course is available for dual enrollment credit.

Prerequisite: 83 or better in Geometry/Trig Honors, or 83 or better in Algebra II/Trig Honors

Calculus I *440* Phase 2 SUS/FBF 1202300 [Year]

This course is intended for students who have a thorough working knowledge of Algebra I, Algebra II, Geometry and Trigonometry. The course begins with a review of Pre-Calculus and then includes an intensive study of the general theory and techniques of calculus. Topics include algebraic, trigonometric, exponential and logarithmic functions; limits; derivatives of algebraic, trigonometric, exponential and logarithmic functions; techniques of integration. This course is available for dual enrollment.

Prerequisite: 77 to 93 in Pre-Calculus or 69 or less in Pre-Calculus-Honors

Calculus I – Honors *443* Phase 3 SUS/FBF 1202300 [Year]

This course is intended for students who have a thorough working knowledge of Algebra I, Algebra II, Geometry and Trigonometry. The course involves an extensive study of the general theory and techniques of Calculus. Topics include algebraic, trigonometric, exponential and logarithmic functions; limits, derivatives of algebraic, trigonometric, exponential and logarithmic functions; techniques of integration; approximation to the definite integral using rectangles; application of the definite integral to find areas between curves and volumes of solids of revolution. This course is available for dual enrollment.

Prerequisite: 93 or better in Pre-Calculus or 70 to 82 in Pre-Calculus Honors

AP Calculus AB *444* $ AP EXAM FEE Phase 4 SUS/FBF 1202310 [Year]

The curriculum for this course, provided by the College Board, is driven by the need to prepare the students for the AP Calculus exam in May. This course is intended for students who have a thorough working knowledge of Algebra I, Algebra II, Geometry and Trigonometry. The course involves an extensive study of the general theory and techniques of Calculus. Topics include algebraic, trigonometric, exponential and logarithmic functions; limits, derivatives of algebraic, trigonometric, exponential and logarithmic functions; techniques of integration; approximation to the definite integral using rectangles; application of the definite integral to find areas between curves and volumes of solids of revolution. Students enrolled in this course **must** take the AP Examination. A fee is required for examination. This course is available for dual enrollment.

Prerequisite: 83 or better in Pre-Calculus Honors; **the student must take the AP test at the end of the year. Fee is determined by the College Board.**

Calculus II – Honors *486* Phase 3 SUS/FBF MAC1473 [Year]

This is the second of three courses in the basic calculus sequence. Topics include different techniques of integration and improper integrals. Polynomial approximations of sequences and infinite series are included. Parametric equations and the use of plane curves and polar graphs are part of this course. Concepts of vectors within planes, lines and surfaces in space are also discussed. This course is available for dual enrollment in the spring.

Prerequisite: 75 or better in Calculus I, Calculus I Honors, or AP Calculus

Statistics *459* Phase 2 SUS/FBF 1210300 [Year]

This course is designed to explore the concepts of probability, elementary statistics, and hypothesis testing. Specific topics include binomial distribution; combinations and permutations; descriptive, inferential, and nonparametric statistics; correlation and regression; hypothesis testing; measures of central tendency; normal distribution, randomness; and sampling theory. This course is available for dual enrollment in the fall.

Prerequisite: 77 or better in Pre-Calculus, 70 or better in Pre-Calculus Honors, 77 better in Math Analysis, or 80 or better in Algebra II/Trig; 77 or better in Alg. II/Trig Honors

Statistics Honors *456* Phase 3 SUS/FBF 1210300 [Year]

The course involves an extensive study of probability, elementary statistics, and hypothesis testing. Specific topics include binomial distribution; combinations and permutations; descriptive, inferential, and nonparametric statistics; correlation and regression; measures of central tendency; normal distribution, randomness; and sampling theory. This course is available for dual enrollment in the fall.

Prerequisite: 83 or better in Pre-Calculus or 77 or better in Pre-Calculus Honors, 93 or better in Math Analysis, 93 or better in Algebra II /Trig, or 83 or better in Algebra II/Trig Honors or successful completion of Calculus

AP Statistics *458* $ AP EXAM FEE Phase 4 SUS/FBF 1210320 [Year]

The course is an intensive study of probability, elementary statistics, and hypothesis testing. Specific topics include binomial distribution; combinations and permutations; descriptive, inferential, and nonparametric statistics; correlation and regression; measures of central tendency; normal distribution, randomness; and sampling theory. Students enrolled in this course **must** take the AP Examination. This course is available for dual enrollment in the fall.

Prerequisite: 90 or better in Pre-Calculus or 83 or better in Pre-Calculus Honors. **The student must take the AP test at the end of the year. Fee is set by the College Board.**

Discrete Math *408* Phase 2 SUS/FBF 1220910 [Year]

This course is intended for the student who has completed a fundamental sequence of required mathematics courses. It introduces higher-level topics and an intense review for successful study of the mathematics required in college. New topics include logic, probability, and statistics. Particular attention will also be paid to algebraic operations, informal geometry, and the history of math.

Prerequisite: 70 - 79 in Algebra II/Trig (66 or lower in Geometry/Trig Honors, successful completion of Math for College Readiness, 98 or better in Algebra II (phase 1) or 66 or lower in Algebra II/Trig Honors

Math for College Readiness *491* Phase 1 SUS/FBF 1209800 [Year]

The purpose of this course is to strengthen the skill level of high school seniors who have completed Algebra I, II, and Geometry and who wish to pursue credit generating mathematics courses at the college level. Specific topics covered include Functions and Relations , Polynomials, Rational Expressions and Equations, Radical Expressions and Equations, Quadratic equations, Logarithmic and Exponential Functions, Matrices, Simple and Compound Interest, Descriptive Statistics, Vocabulary and Strategies for College Readiness.

Prerequisite: successful completion of Algebra II (phase 1), 69 or below in Algebra II/Trig or 73 or lower in Math Analysis