

MATH

1200400 **INTENSIVE MATHEMATICS** **Grades 9 - 12**
1/2 - 1 credit

The focus of the course is to provide instruction and practice in mathematics skills and concepts. The content will include, but not be limited to, test-taking skills and strategies for mathematics. The mathematics content will be identified by a diagnosis of student's needs for instruction. This course is designed to help students with a score below a three on FCAT Mathematics. Course will meet requirements for elective credit.

1200310 **ALGEBRA I** **Grades 9 - 12**
1 credit

The purpose of this course is to provide the foundation for more advanced mathematics courses and to develop the skills necessary to solve mathematical problems. Topics will include, but will not be limited to: sets; variables; structure and properties of the real number system; first-degree equations and inequalities; relations and functions; graphs; systems of linear equations and inequalities; integral exponents; polynomials; factoring; rational algebraic expressions; irrational numbers; radical expressions; quadratic equations.

1206300 **INFORMAL GEOMETRY** **Grades 10 - 12**
1 credit

Prerequisite: Algebra I with teacher recommendation

The purpose of this course is to lay a foundation for the geometry topics that will be covered on the Florida Comprehensive Assessment Test (FCAT) and will cover the geometry of lines, planes, angles, and triangle. It is for the student who needs the concepts taught at a slower pace.

1206310 **GEOMETRY** **Grades 9 - 12**
1 credit

Prerequisites: Successful completion of Algebra I

The purpose of this course is to emphasize critical thinking involving the discovery of relationships and their proofs and to develop the skills to apply the deductive method to mathematical situations. Topics will include, but will not be limited to, logic and reasoning; the study of Euclidean geometry of lines, planes, angles, triangles; similarity, congruence, and geometric inequalities; polygons and circles; area and volume; and constructions.

1206320 **GEOMETRY HONORS** **Grades 9 - 12**
1 credit

Prerequisite: See Honors Criteria

The purpose of this course is to provide a rigorous in-depth study of geometry, supported with hands-on discovery and experimentation. Topics will include, but will not be limited to: angles, perpendicularity and parallelism in a plane and in space; polygons with applications involving similarity and congruence; circles, spheres, platonic solids, area and volume studied through real world applications; coordinate geometry; transformational geometry; Euclidean geometry; and fractal geometry. Topics will be algebra-intensive, while emphasizing the formal language of mathematics.

A graphing calculator is recommended. A scientific calculator is required. This course is designed to prepare the student to take further AP courses in mathematics and to pass AP exams as well as be successful in Dual Credit/Dual Enrollment courses.

1200330 **ALGEBRA II** **Grades 10 - 12**
1 credit

Prerequisites: *Successful completion of Algebra I and Geometry with teacher recommendation*

The purpose of this course is to continue the study of the structure of algebra and to provide the foundation for applying these skills to other mathematical and scientific fields. Topics will include, but will not be limited to, the following: the review and extension of the structure and properties of the real number system; relations, functions, and graphs; polynomials and rational expressions; quadratic equations and inequalities; polynomial functions; rational and irrational exponents; logarithms, complex numbers, and word problems. A graphing calculator is recommended.

1200340 **ALGEBRA II HONORS** **Grades 10 - 12**
1 credit

Prerequisite: *See Honors Criteria*

The purpose of this course is to present an in-depth study of the topics of Algebra II, with emphasis on theory and development of formulas, and circular and trigonometric functions and their applications. Topics include: algebraic structure; first and second-degree equations in one and two variables solved algebraically and graphically; systems of equations and inequalities; functions and relations; polynomials and rational expressions; exponents and radicals; logarithms; complex numbers; conic sections; polynomial equations; sequences and series; permutations, combinations and probability; matrices and circular functions; trigonometric identities and graphs of trigonometric functions. A graphing calculator is required. This course is designed to prepare the student to take further AP courses in mathematics and to pass AP exams as well as be successful in Dual Credit/Dual Enrollment courses.

1208300 **LIBERAL ARTS MATH** **Grades 10-12** **1**
credit.

Prerequisite: *Successful completion of Algebra I and Informal Geometry or Geometry with teacher recommendation*

This course is designed to reinforce basic Algebra and Geometry skills. The goals of this course are to develop proficiency with mathematical skills, expand the understanding of mathematical concepts, improve logical thinking, and promote success in future math courses. Topics will include but not be limited to: structure and properties of real numbers, various means to analyze and express patterns, relations and functions, analyzing tables and graphs, solving equations and inequalities algebraically and graphically, coordinate geometry, graphing, operations with rational algebraic equations, problems involving geometric shapes and their applications. A scientific calculator is required.

1211300 **TRIGONOMETRY**
and
1210300 **MATH ANALYSIS** **Grades 11 - 12**
1 credit

Prerequisites: *See Honors Criteria*

Trigonometry provides students with the study of circular and trigonometric functions, their graphs, and applications. Topics include measures of angles, sectors of circles, right angle trigonometry, circular functions, trigonometric identities, graphs of trigonometric functions, solutions of trigonometric

equations, solutions of right and oblique triangles, word problems, and applying trigonometric concepts. A graphing calculator is required.

Math Analysis explores the concepts of polynomial functions, systems of equations, graphs, applications for various functions, inverse functions, parametric functions, exponential and logarithmic functions, elementary statistics, probability and data analysis. A graphing calculator is required.

1210320 **AP STATISTICS** **Grades 11-12** **1**
credit

Prerequisite: *See Honors Criteria*

The purpose of this course is to introduce students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Students who successfully complete the course and examination may receive credit and/or advanced placement for a one-semester introductory college statistics course.

Students are exposed to four broad conceptual themes:

1. Exploring Data: Observing patterns and departures from patterns.
2. Planning a Study: Deciding what and how to measure.
3. Anticipating Patterns: Producing models using probability and simulation.
4. Statistical Inference: Confirming models.

The AP Statistics course is an excellent option for any student who has successfully completed a second-year course in Algebra, regardless of the student's intended college major. Mathematical maturity, quantitative reasoning, and excellent reading comprehension skills are necessary for success in this course. A graphing calculator is required. All students are expected to sit for the AP exam in May. More information about the AP program can be found at www.collegeboard.com/ap.

1202310 **AP CALCULUS AB** **Grade 12**
1 credit

Prerequisite: *See Honors Criteria*

Topics will include, but not be limited to, real numbers, functions, limits, analytic geometry, elementary differentiation and integration of trigonometric functions, logarithmic and exponential functions and special techniques of integration. A graphing calculator is required. Students enrolled in this course must be capable of using symbolic notation and applying pre-calculus concepts in a variety of problem situations. Students must be mature, independent thinkers with excellent work habits, capable of interpreting material in the text, contributing to class discussions, and have a good attendance record. All students are expected to sit for the AP exam in May. More information about the AP program can be found at www.collegeboard.com/ap.

MAC 1105 **COLLEGE ALGEBRA (3 credits/ECC)** **Grades 11-12**
1 credit
MAC 1147 **PRECALCULUS ALGEBRA/TRIGONOMETRY (5 credits/ECC)** **Grades 11-12**
1 credit

Prerequisite: *See Honors Criteria*

This is a course for well-prepared advanced mathematical students only. First semester topics will include, but not be limited to, exponential and logarithmic functions, circular and trigonometric functions, inverse functions, polynomial functions, sequences and limits, elementary matrices and

selected topics in analytic geometry. A graphing calculator is required for this course. The second semester course is designed to be a rigorous approach to sequence, series, functions and limits leading to an understanding of the derived function. Emphasis is placed on proofs and the use of the graphing calculator. The course is intended for those students who desire to continue with advanced study in the area of calculus.

1298310 ADVANCED TOPICS IN MATHEMATICS Grades 11-12
1 credit

Prerequisite: Successful completion of Algebra II

This course provides students with a general survey of mathematical topics while reviewing fundamental mathematical skills. Areas of study include deductive and inductive reasoning, set theory and Venn diagrams, logic and truth tables, income tax preparation, graph theory, voting methods, probability, statistics and personal finances. Applying mathematics in meaningful problem solving situations that relate to students' lives is emphasized. A scientific calculator is required.

1200700 MATHEMATICS FOR COLLEGE READINESS Grades 11-12
1 credit

Prerequisite: Successful completion of Algebra II

This course is intended to prepare students for College Algebra. For placement into this course, it is recommended that students score within 72-86 on the CPT and/or have passed Algebra II with a grade of C or better.

Calculator Usage in Math Classes

The use of calculators in math classrooms promotes achievement, improves problem-solving skills, and increases understanding of mathematical ideas. All math teachers at PCHS incorporate calculator usage in their courses. Students are expected to supply their own calculators, along with paper, graph paper, pencils, and notebooks.