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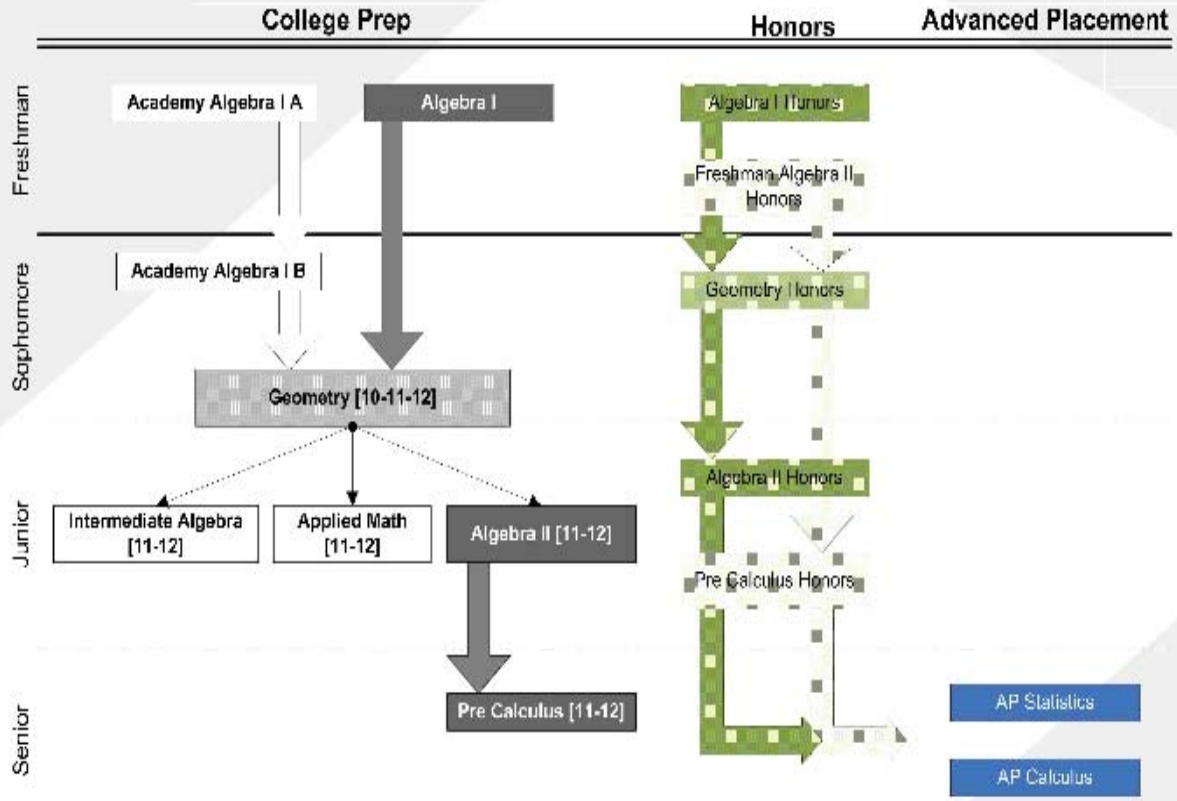
Math 2008-2009



MATHEMATICS

Mr. Jeremy Babel, Chairperson
847/451-3648

The mathematics program is designed for the diversified needs and abilities of our students. Courses are available for those needing mathematics for everyday use, for broad cultural purposes, for employment, for the professions, for research, or for advanced scholarship. The major objectives of any mathematics course are to develop students' abilities to read with understanding, to reason critically, and to analyze with clarity.

ALGEBRA I

MAT111 MAT112 ALG I
Elective: **Grade 9.** **One unit**
Prerequisite: **None**
Grade Weight: **College Prep**
Algebra I is designed to develop skills in using variables, linear equation solving, graphing on the Cartesian Plane, solving linear systems, and exploring the properties of exponents. Additional goals include developing skill in working with quadratics and other polynomial functions. A TI-83 or TI-84 graphing calculator is required.

ACADEMY ALGEBRA I A

MAT101 MAT102 AC ALG I A
Elective: **Grade 9.** **One unit**
Prerequisite: **None**
Grade Weight: **College Prep**
This course covers Algebra I topics over a two-year period. Study skills, organization, and fundamental mathematical concepts will provide students with additional support. A TI-83 or TI-84 graphing calculator is required.

ALGEBRA I HONORS

MAT191 MAT192 ALG I HN
Elective: **Grade 9. One unit**
Prerequisite: **None**
Grade Weight: **Honors**
This course covers topics parallel to Algebra I while at an increased level of depth, rigor, and pacing. Algebra I Honors is designed to develop skills in using variables, equation solving, factoring, graphing and using functions. Problem solving skills will be emphasized and developed. A TI-83 or TI-84 graphing calculator is required.

FRESHMAN ALGEBRA II HONORS

MAT251 MAT252 ALG II HN+
Elective: **Grade 9 . One unit**
Prerequisite: **None**
Grade Weight: **Honors**
This course is only for freshmen that scored exceptionally well on the Mathematics Honors Placement Exam as 8th graders. It covers rigorously Algebra II material in preparation for Geometry Honors and Pre Calculus: graphs of linear equations, equalities and inequalities, matrices, quadratic functions, exponents, and exponential functions. A TI-83 or TI-84 graphing calculator is required.

ACADEMY ALGEBRA I B

MAT103 MAT104 AC ALG I B
Elective: **Grade 10.** **One unit**
Prerequisite: **Academy Algebra A**
Grade Weight: **College Prep**
This course covers Algebra I topics over a two-year period. Study skills, organization, and fundamental mathematical concepts will provide students with additional support. A TI-83 or TI-84 graphing calculator is required.

GEOMETRY

MAT221 MAT222 GEOM
Elective: **Grades 10, 11, 12. One unit**
Prerequisite: **Algebra I**
Grade Weight: **College Prep**
Geometry develops powers of visualization while building a knowledge of the relationships between geometric elements. Furthermore, this course develops deductive reasoning and provides for the integration of plane and solid concepts with an effective use of algebra. A TI-83 or TI-84 graphing calculator is required.

GEOMETRY HONORS

MAT231 MAT232 GEOM HN
Elective: **Grade 10.** **One unit**
Prerequisite: **Algebra I Honors**
Grade Weight: **Honors**
This course covers topics parallel to Geometry, while at an increased level of depth, rigor, and pacing. This is a course of study that will develop powers of visualization while building aknowledge of the relationships between geometric elements. Furthermore, it is a tool to develop deductive reasoning and will provide for the integration of plane and solid concepts with an effective use of algebra. A TI-83 or TI-84 graphing calculator is required.

APPLIED MATH

MAT331 MAT332 APP MATH
Elective: **Grades 11, 12. One unit**
Prerequisite: **Geometry**
Grade Weight: **College Prep**
Applied Mathematics is a course suited for junior level students planning on careers not requiring study at a four-year university. Students will solve problems in real world contexts related to measurement, percentages, ratio, proportion, area, perimeter, data representation, and statistical thinking. Students will further engage in Prairie State Achievement Test preparation and review. A TI-83 or TI-84 graphing calculator is required.

INTERMEDIATE ALGEBRA

MAT351 MAT352 INT ALG
Elective: **Grades 11, 12. One unit**
Prerequisite: **Geometry**
Grade Weight: **College Prep**
Intermediate Algebra develops all of the algebraic concepts from Algebra I and Geometry in greater depth, yet is less rigorous than Algebra II. Emphasis is placed on basic operations associated with the real number system, linear functions, quadratics, matrices, probability and right triangle trigonometry. The course additionally emphasizes PSAE preparation. A TI-83 or TI-84 graphing calculator is required.

ALGEBRA II

MAT311 MAT312 ALG II
Elective: **Grades 11, 12. One unit**
Prerequisite: **Geometry**
Grade Weight: **College Prep**
This course develops the algebraic concepts from Algebra I in greater depth. Emphasis is placed on basic operations associated with the real number system, polynomials and their various operations, graphs of linear equations, equalities and inequalities, matrices, quadratic functions, exponents and exponential functions. This course also develops the properties and concepts essential to Trigonometry. A TI-83 or TI-84 graphing calculator is required.

ALGEBRA II HONORS

MAT241 MAT242 ALG II HN
Elective: **Grades 11, 12. One unit**
Prerequisite: **Geometry Honors**
Grade Weight: **Honors**
This course covers topics parallel to Algebra II, while at an increased level of depth, rigor, and pacing. Emphasis is placed on basic operations associated with the real number system, polynomials and their various operations, graphs of linear equations, equalities and inequalities, matrices, quadratic functions, exponents and exponential functions. This course also develops the properties and concepts essential to Trigonometry. A TI-83 or TI-84 graphing calculator is required.

PRECALCULUS

MAT361 MAT362 PRE CAL
Elective: **Grade 11, 12. One unit**
Prerequisite: **Algebra II**
Grade Weight: **College Prep**
This course emphasizes algebraic techniques with polynomials, fractional expressions, exponents and exponential functions, linear and quadratic equations, trigonometry, and analytic geometry. It is strongly recommended that students who intend to take Advanced Placement Calculus as seniors take PreCalculus Honors as juniors. A TI-83 or TI-84 graphing calculator is required.

PRECALCULUS HONORS

MAT341 MAT342 PRE CAL HN
Elective: **Grades 11, 12. One unit**
Prerequisite: **Freshman Algebra II Honors or Algebra II Honors**
Grade Weight: **Honors**
This course provides an intense study of the topics fundamental to calculus. Emphasis is placed on functions and their graphs with special attention to polynomial, rational, exponential, logarithmic, and trigonometric functions. Upon completion, students should be able to solve practical problems and use appropriate models for analysis and prediction. It is strongly recommended that students who intend to take Advanced Placement Calculus as seniors take PreCalculus Honors. A TI-83 or TI-84 graphing calculator is required.

STATISTICS ADVANCED PLACEMENT

Advanced Placement

MAT371 MAT372 STAT AP
Elective: **Grades 11 or 12. One unit**
Prerequisite: **Must have completed Algebra II or Algebra II Honors, Precalculus, or Trig/Precalc Honors**
Grade Weight: **Advanced Placement**
This course examines how probability and statistics help us make sense of our world. The course deals with graphical and numerical techniques to study patterns in data; characteristics of data such as shape, location, and variability; differences between association and causation; and data collection. Students may take the Advanced Placement exam for college credit. A TI-83 or TI-84 graphing calculator is required. See the Advanced Placement Testing Policy on page 14.

AB CALCULUS ADVANCED PLACEMENT

Advanced Placement

MAT441 MAT442 CALCULUS AP
Elective: **Grade 12. One unit**
Prerequisite: **PreCalculus Honors**
Grade Weight: **Advanced Placement**
This course deals with functions, limits, derivatives, chain rule, continuity, maximum, minimum, sketching graphs, integrals, and natural logarithms. Students taking the course may take the Advanced Placement Exam for college credit. A TI-83 or TI-84 graphing calculator is required. See the Advanced Placement Testing Policy on page 14.