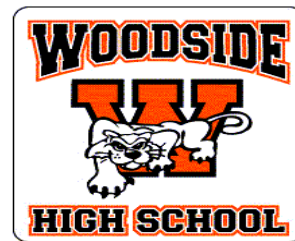# ADVANCED MATHEMATICS COURSES

ADVANCED PLACEMENT CALCULUS (AB) - HP Grades 11, 12

Prerequisite: Completion of Pre-Calculus with a grade of C or better.

This is a college level honors AP course. Topics include differentiation of functions, finding tangents to curves, computing rates of change, solving related rates and problems involving distance, velocity, and acceleration, integration of functions including exponential and logarithmic functions, finding volumes of solids of revolution, computing area under curves, and applying the Fundamental Theorem of Calculus. Students who successfully complete the course will be well prepared for and must take the Advanced Placement Calculus (AB) Exam.

ADVANCED PLACEMENT CALCULUS (BC) - HP Grades 11, 12

Prerequisite: Completion of AP Calculus AB with a grade of B or better.

This is a college level honors AP course. AP Calculus BC provides a more in depth study of the fundamental concepts and methods of single-variable calculus developed in AP Calculus AB, including sophisticated integration and differentiation techniques. Additional topics include analysis of polar and parametric equations, vectors and infinite series.   Students who successfully complete the course will be well prepared for and must take the Advanced Placement Calculus (BC) Exam

ADVANCED PLACEMENT STATISTICS - HP Grades 11, 12

Prerequisite: Completion of Pre-Calculus with a grade of C or better.

This is a college level honors AP course. AP Statistics introduces students to the major concepts and tools for collecting, analyzing, and drawing conclusions from data. Course work includes exploring data, planning a study or experiment, anticipating patterns, and making statistical inferences. Students who successfully complete the course will be well prepared for and must take the AP Statistics exam.

ELEMENTARY FINITE MATHEMATICS –MATH 125, CAÑADA COLLEGE Grades 10, 11, 12

Prerequisites: AP Calculus AB or BC or College Calculus (Cañada Program through Math 252) with B or better & Cañada College Math Placement Test

This one semester course is an introduction to finite mathematics with attention to set theory, counting theory, probability, systems of equations, vector and matrix theory, inequalities and linear programming. This Cañada College class is offered on the Woodside campus through the concurrent enrollment program. Students must complete the concurrent enrollment process including the community college math placement exam.

MULTIVARIABLE CALCULUS – MATH 253, CAÑADA COLLEGE (Cañada Title: ANALYTICAL GEOMETRY AND CALCULUS III) Grades 11, 12

Prerequisite(s): AP Calculus BC or College Calculus (Cañada Program through Math 252) with B or better & Cañada College Math Placement Test

This one semester course is the third in a series of calculus and analytic geometry. This is the calculus of multivariable functions. The course covers topics in vectors, partial derivatives, double and triple integrals, line integrals and vector analysis theory such as Green's, Stokes', and Gauss' Theorems. This Cañada College class is offered on the Woodside campus through the concurrent enrollment program. Students must complete the concurrent enrollment process including the community college math placement exam.

LINEAR ALGEBRA – MATH 270, CAÑADA COLLEGE Grades 11, 12

Prerequisite(s): AP Calculus AB or BC or College Calculus (Cañada Program through Math 252) with a B or better & Cañada College Math Placement Test

This one semester course covers applications of vectors and matrices to systems of linear equations, linear transformations, eigenvectors and eigenvalues, vector spaces and inner products. This Cañada College class is offered on the Woodside campus through the concurrent enrollment program. Students must complete the concurrent enrollment process including the community college math placement exam.

ORDINARY DIFFERENTIAL EQUATIONS – MATH 275, CAÑADA COLLEGE Grades 11, 12

Prerequisite(s): AP Calculus BC or College Calculus (Cañada Program through Math 252) with a B or better & Cañada College Math Placement Test

This one semester course covers applications involving differential equations and analytical, graphical and numerical solutions of linear differential equations and systems of linear differential equations, power-series solutions of nonlinear differential equations, and solution of linear differential equations with constant coefficients by Laplace Transforms. This Cañada College class is offered on the Woodside campus through the concurrent enrollment program. Students must complete the concurrent enrollment process including the community college math placement exam.

Note: The Cañada College math course offerings (Math 125, Math 270, Math 253, and Math 275) will depend on enrollment and student interest. It is anticipated that in any given year, two of the four one-semester courses will be offered. For example, in a given academic year, Math 125 may be offered in the Fall, followed by Math 270 in the Spring. The next year would offer Math 253 in the Fall, followed by Math 275 in the Spring.