AP Calculus

Course Length: Two semesters

Grade Levels: 12

Prerequisite Courses: Precalculus

Course Description:
This course provides a culmination of the topics in algebra, trigonometry, and analytical geometry, expanding and applying these topics into the fields of differential and integral calculus. This course follows the syllabus of the AP Calculus AB program and provides students with the opportunity to earn dual credit.

AP Calculus Course Standards

As a result of their participation in this course, students will:

- Work with functions represented in a variety of ways: graphical, numerical, analytical, or verbal understanding the connections among these representations.
- Understand the meaning of the derivative in terms of a rate of change and local linear approximation and use derivatives to solve a variety of problems.
- Understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change and use integrals to solve a variety of problems.
- Understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.
- Communicate mathematics and explain solutions to problems both verbally and in written sentences.
- Model a written description of a physical situation with a function, a differential equation, or an integral.
- Use technology to help solve problems, experiment, interpret results, and support conclusions.
- Determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measurement.
- Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.