Lakewood High School

AP Calculus BC

Course Overview:

AP Calculus BC is an intense study of college level Calculus. Students who successfully pass the BC Exam in the spring may be eligible for 2 full college course credits. The AP Calculus BC Exam is designed to measure the students' understanding of the concepts of calculus, the application of these concepts, and the knowledge to connect these concepts through the use of graphical, numerical, analytical, and verbal representations of mathematics.

Prerequisites:

Students should have a strong foundation in algebra, geometry, trigonometry, and basic functions for success in this class. A student must obtain a teacher signature for registration. Previous enrollment in Honors Pre-Calculus or AP Calculus AB is needed; however, in special circumstances, students may enroll from a non-honors Pre-Calculus course if they completed this course with a B or better and have a true desire to study calculus.

Course Theme:

All topics of study in AP Calculus AB will be covered (see AB Calculus course overview). In addition, BC students will examine the following topics::

- The Squeeze Theorem for limits
- Integration by Parts
- Integration by Partial Fractions
- Improper Integrals
- Arc Length
- Euler's Method of Approximation
- Logistic Functions
- Series & Sequences
  - Convergence/Divergence Testing
- Power Series
- Taylor and Maclaurin Series
- Vector Functions
- Parametric Equations
- Polar Equations
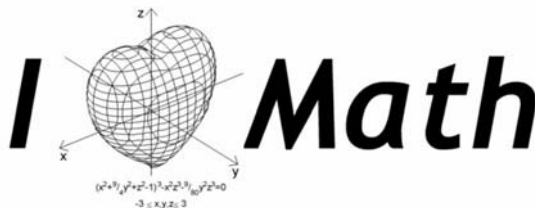
Textbook & Materials Needed:

We will utilize a variety of textbooks for the duration of this course. Students will need a TI-Graphing Calculator, (TI-84 is sufficient).

Additional Information:

It is expected students will spend an additional 5-10 hours of work outside of the classroom setting, per week. Released material from AP Central will make up a large portion of our daily work and exams. An AP practice exam will be offered during testing week in April.