

**Falmouth High School
Advanced Placement Calculus
Course Information 2010-2011**

Instructor:	Lisa Lopes; Falmouth High School (llopes@falmouth.k12.ma.us)
Class Meetings:	4 th Period (A, B, C, E, F) and 6 th Period (A, B, C, D, E)
Office Hours:	Wednesday after school; Diagonal and 5 by appointment Evening tutoring hours at Falmouth Teen Center: TBA
Prerequisite:	B+ or better in PreCalculus (H); A in PreCalculus (CP)
Textbook:	Calculus of a Single Variable 8 th Edition; Larson, Hosteteler, Edwards; Houghton Mifflin Company, 2006
Technology:	TI-83 or TI-84 Plus is required

Course Description: Calculus is the branch of mathematics that studies continuously changing quantities. The basic tools of differentiation and integration serve as the foundation of mathematical analysis essential in modern physics as well as other branches of modern science and engineering.

AP Calculus AB is a full year course that is concerned with developing students' understanding of the concepts of calculus and developing, through experience, its methods and applications. The focus of the course is neither manipulation nor memorization of techniques and/or processes. The course will the unifying themes of derivatives and integrals, their applications as well as modeling to develop a cohesive understanding of mathematical analysis.

The pace of the course is not what differentiates the course from the honors curriculum. The depth, breadth, and application of cumulative knowledge is. Students studying AP Calculus are expected to participate in the Collegeboard Advanced Placement exam that is administered in the spring. The curriculum is structured as to prepare students fully for successful completion of the exam.

- Course Goals:** Students should be able to:
- Work with functions graphically, numerically, analytically, and verbally understanding the connections across the representations
 - Understand the derivative as a rate of change, the concept of local linearity, and the use of derivatives in solving problems
 - Understand the definite integral as a net accumulation of change and use the definite integral in solving problems
 - Understand the relationship between the derivative and definite integral through the Fundamental Theorem of Calculus
 - Communicate mathematics in well-written, concise language
 - Model a written physical description or situation with a function, differential equation, or integral
 - Use technology to help solve problems, experiment, interpret results, and verify conclusions.
 - Determine the reasonableness of solutions
 - Develop an appreciation of calculus and analytical mathematics as a coherent body of knowledge and as a human accomplishment

Grading: Grades for the course will be computed as follows:

Homework:	20%
Tests:	45%
Quizzes:	35%
Final Exam:	16% of overall grade

Homework is necessary in the understanding of any mathematics course. Homework checks will be done periodically and will consist of the last assignment given. The grade for that assignment will apply to all assignments since the last homework check. Should the last assignment not be available, a reduction in points will be applied based on how far back the last completed assignment is.

Tests will be developed from actual AP testing materials. Once the study of calculus begins, the tests will be administered in two parts over 2 days. The first part of the exam will consist of 3 free response questions, modeled after the free response section of the Collegeboard Calculus AB exam. The second part, administered the next day, will be a 2-part multiple choice exam. Part A of the exam will be a "no calculator" exam and Part B will be administered with calculator allowed. All testing will be one class period. No extra time, unless stipulated in the student's IEP, will be allowed. This format is a direct correlation to the AP exam format.

There will be no makeup assignments or extra credit. Students missing any test or quiz will be required to makeup the assessment as soon as the maximum allowable days following the absence, as stated in the student handbook, have passed.

Additional Remarks: Advanced placement calculus is designed to be a college level course. Qualified students, as demonstrated on the Collegeboard Advanced Placement exam, will receive college credit as determined by their college of choice. It is expected that students will approach the study of calculus in a mature and responsible manner.