



Online Courses for High School Students
1-888-972-6237

Course Name	Adv Pl Calculus AB
Subject	Mathematics
Estimated Completion Time	2 Semesters / 36 weeks
Course Description	An interactive text, graphing software and math symbol software combine with the exciting on-line course delivery to make Calculus an adventure. This course is designed to prepare the student for the AP Calculus AB exam given each year in May. With continuous enrollment, students can start the course and begin working on Calculus as early as spring of the previous year!
Scope & Sequence	<p>Topical Outline for the AP Calculus Courses</p> <p>This outline of topics is intended to indicate the scope of the course, but it is not necessarily the order in which the topics are to be taught.</p> <p>I. Functions, Graphs, and Limits Analysis of graphs. Limits of functions (including one-sided limits). Asymptotic and unbounded behavior. Continuity as a property of functions.</p> <p>II. Derivatives Concept of the derivative. Derivative at a point. Derivative as a function. Second derivatives. Applications of derivatives. Computation of derivatives.</p> <p>III. Integrals Riemann sums. Interpretations and properties of definite integrals. Applications of integrals. Fundamental Theorem of Calculus. Techniques of antidifferentiation. Applications of antidifferentiation.</p>

Numerical approximations to definite integrals.

Course
Objectives

Goals:

- Students should be able to work functions represented in a variety of ways: graphical, numerical, analytical, or verbal. They should understand the connections among these representations.
- Students should understand the meaning of the derivative in terms of a rate of change and local linear approximation and should be able to use derivatives to solve a variety of problems.
- Students should understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of a rate of change and should be able to use integrals to solve a variety of problems.
- Students should understand the relationship between the derivative and the definite integral as expressed in both parts of the Fundamental Theorem of Calculus.
- Students should be able to communicate mathematics both orally and in well-written sentences and should be able to explain solutions to problems.
- Students should be able to model a written description of a physical situation with a function, a differential equation, or an integral.

Grading Policy

Grades will be based upon the quality of the student submissions, participation in discussions, and the ability to maintain consistent communication with the instructor. The grading scale that is used for this course is as follows:

A 90-100
B 80-89
C 70-79
D 60-69
F 59 or below

All forms of academic dishonesty are prohibited. This includes, but is not limited to, plagiarism, cheating, furnishing false information, forgery, alteration or misuse of documents or software, and misconduct during a testing situation. Any student cheating on an exam will receive a zero on the exam and may be withdrawn from the class at the instructor's discretion.

Communication
/ Participation

Only through continuous communication can students be successful in an online course. Within each course the

Requirements instructor outlines the weekly minimum work requirements.
It is essential that the student and instructor maintain regular contact. Failure to complete assignments on a consistent basis will result in students being removed from the course.

Materials
Required Design Science, Inc.
800-827-0685 Sales contact
www.mathtype.com
This is a CD that can be purchased.

Interactive Calculus Textbook CD-ROM v 2.0
ISBN#0-395-91102-8
Mcdougal Littell 800-462-6595

Graphmatica Software
Email sales@graphmatica.com for customized pricing information for your school. Graphmatica - a graphing utility used to create graphs in assignments and communications. See <http://graphmatica.com> for more information about this resource.