

AP Calculus AB 2020-2021

Welcome to AP Calculus AB!

My name is Mr. Fisher and I'll be your instructor for this class. I look forward to getting to know you and helping you learn more about the fascinating language of mathematics. Language? Doesn't that just refer to subjects like English, Spanish, and French? Usually it does, but mathematics has a lot of things in common with linguistic languages. For example, mathematics has its own vocabulary and its own "grammatical" rules about how to communicate to others in writing and speech. Mathematics is not only the language of science, it is the language of patterns, logic, and abstract thought that provides a great deal of insight into the world around us. While you may think of mathematics as just memorizing a bunch of formulas, there is a lot of room for creativity in mathematics. There is often more than one way to arrive at the correct solution, and I encourage you to use both sides of your brain in this course. Think of today as the beginning of a journey. I'll be your guide.

Course Description: This course is an introductory course in calculus that is designed to prepare you to take the Calculus AB Advanced Placement examination. The course will incorporate many aspects of algebra, geometry, and trigonometry and introduce the concepts of limits, differentiating, integrating, and many applications.

Everything we do in class will be posted on my canvas site and all slides and home work (with answers) will be provided.

Recommended Course materials:

Graphing calculator – (TI-83 Plus, TI-84, or TI-Nspire CX recommended)

Graphing paper

Notebook paper

3-ring binder

Course Outline

Chapter 1: Limits Goal: You will understand the concepts of limits and continuity and be able to solve limit problems graphically and analytically.

Chapter 2: Differentiation Goal: You will learn how to apply the various methods of explicit and implicit differentiation and be able to apply them to solve related rate problems and problems involving motion in a straight line.

Chapter 3: Applications of the Derivative Goal: You will understand how to interpret derivatives from an analytical, graphical, and numerical perspective. You will also be able to use derivatives to solve applied problems involving optimization.

Chapter 4: Antiderivatives and Integration Goal: You learn how to use antiderivatives to evaluate indefinite and definite integrals. You will also learn how to use approximation methods to estimate the value of definite integrals with numerical and graphical applied problems.

Chapter 5: Exponential, Logarithmic, Inverse Functions; Solving Differential Equations and Slope Fields Goal: You will be able to find derivatives and integrals involving logarithmic and exponential functions. You will be able to use separation of variables and integration to solve simple differential equations and be able to sketch slope fields to sketch the general and particular solutions to differential equations.

Chapter 6: Area, Volume, and Applications of Integration and Differentiation Using the Graphing Calculator Goal: You will be able to use the definite integral to find area of two-dimensional regions and the volume of three-dimensional shapes using various methods. You will be able to use a graphing calculator to assist you in analyzing real-world applications of integration and differentiation.

Academic Integrity:

Please read the Student Handbook regarding the School's policy on academic integrity. Any incident of cheating will result in a grade of zero and a phone call home. Cheating includes, but is not limited to, copying assignments, lending assignments to be copied by others, programming graphing calculators with information you are supposed to know without assistance, use of "cheat sheets" during assessments, etc. Repeated incidents of cheating could result in a zero for the course. Don't jeopardize your integrity. Cheating, in any form, is NEVER worth it.

I have read the Course Expectations for AB Calculus.

Student Signature

Parent/Guardian Signature

Date