

AP Calculus AB Syllabus

Mr. McCorkle

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Course Overview

AP Calculus AB is primarily concerned with developing students' understanding of the concepts of calculus and providing experience with its methods and applications. The course emphasizes a multi-representational approach to calculus, with concepts, results, and problems being expressed graphically, numerically, analytically, and verbally. The connections among these representations are also important. Technology will be used regularly by students, and the teacher, to reinforce the relationships among the multiple representations of functions, to confirm written work, and to assist in interpreting results.

Course Objectives

By the end of the course students should:

- Be able to work with functions represented in a variety of ways and understand the connections among these representations.
- Understand the meaning of derivative and be able to use derivatives to solve a variety of problems.
- Understand the meaning of the definite integral and should be able to 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.
- Be able to communicate mathematics and explain solutions to problems both verbally and in written sentences.
- Be able to model a written description of a physical situation with a function, a differential equation, or an integral.
- Be able to use technology to help solve problems, experiment, interpret results, and support conclusions.
- Be able to determine the reasonableness of solutions, including sign, size, relative accuracy, and units of measure.
- Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

Required Texts and Materials

Texts: Stewart, James. *Single variable calculus: early transcendentals*. 6th ed. Australia: Thomson Brooks/Cole, 2008. Print.

Sullivan, Michael. *Calculus for the AP Course*. 3rd ed. New York, NY: Bedford Freeman & Worth, 2020. Print.

Materials:

- Paper: I recommend that you have a 3-ring binder with loose leaf paper for this class. Inside that binder there should be a separate section for notes and homework. This will help keep you organized and help to make things easy when turning in your week's assignments.
- Pencil

- Texas Instruments TI-83+ or TI-84+

Classroom Rules and Expectations

1. Follow the classroom rules and expectations as posted and as discussed in the class.

2. Be on time to class:

To be on time for class you must be in your seat, with your materials, ready to go when the bell rings.

With your materials means you must have 5 things out and ready to go:

- a. Book
- b. Homework
- c. Paper
- d. Pencil
- e. Calculator

3. If absent, it is your responsibility to find out what you missed.

Grades

Grades will be determined by a weighted average of the work you do during the semester.

1. Classwork, Homework, and Participation (20% of your overall grade)

2. Quizzes and Tests (80% of your overall grade) I understand that this will likely be the most difficult Mathematics course you have taken. As such, I do curve tests and quiz grades. This will always be in your favor. I will explain this process in depth during class.

Grades will be given as follows:

A: 90 – 100%B: 80 – 89.9% C: 70 – 79.9%D: 60 – 69.9%F: < 60%

Homework

Homework will be collected the day of quizzes and tests. Please be organized. Keep your homework in a 3-ring binder. The expectation is that each homework assignment will start at the top of a new page and be labeled appropriately, so that you, or I, can easily identify which assignment we are looking at. Late homework will be deducted 25% of the grade earned. Late work will not be accepted after the late work deadline (see below).

Quizzes and Tests

Quizzes and tests will cover the material from class and from homework. Each Semester Final is comprehensive, covering material that has been covered up to that point in the year. If you miss a test or a quiz due to an excused absence you must schedule a time with me complete the task during Office Hours, at lunch, or before school. It is your responsibility to talk to me about this.

Everyone will take the Semester 2 Final. If you take the AP Test you can choose to not have the Semester 2 Final count towards your grade. If you do not take the AP Test, the Semester 2 Final will count towards your Semester 2 grade. It covers 3 days and is like an AP Test, but with some choice involved with which questions you choose to answer.

The work you do is heavily weighted to the first semester. It is also sometimes takes time for students to adjust to the rigor of Calculus. Because of this, I offer two ways to change your semester grades.

1. If you do better on your Semester Final (by percentage) than you did on one or more of your Unit tests, I will replace the percent on your lowest Unit Test with the percent you earned on your Semester Test.
2. If you improve your letter grade from Semester 1 to Semester 2, **and** you choose to count the Semester 2 Final **and** earn a letter grade better than your Semester 1 letter grade, I will raise your Semester 1 grade by one letter grade.

Google Classroom

Please use the google classroom for all information regarding our class. Weekly I will post to three different tabs: “In Class”, “Homework”, and “Tests and Quizzes.”

- In the “In Class” tab I will post what we will be doing each day during the week. This will also include a list of AP Classroom videos that will help with your understanding of the material.
- In the “Homework” tab I will post your assignment for each day, and will attach any worksheets that are being assigned.
- In the “Tests and Quizzes” tab I will post the dates of our tests and quizzes.

Please make sure you always refer to the google classroom for class information, especially when you are absent. Everything in class is available to you to help you to stay current in the class.

Missing Work Deadlines (Posted in the classroom)

Hellgate High School has late work deadlines for missing work and retakes. Any homework, tests, or quizzes that are not completed by the late work deadlines will be scored a zero. Please make sure to work with me to avoid any of these zeros. I am available during Office Hours and almost every day at lunch to help you. You will be reminded frequently about these deadlines, and given plenty of opportunities to make sure you get your work completed on time.

Academic Honesty

You have decided to take a very demanding course of study. The pressure to do well is present. Please do not allow this pressure to force you into behaviors of academic dishonesty. The governance of this class with regards to academic honesty will follow the academic contract you signed when you registered to be a student at Hellgate High School. Please check the student handbook with regards to how instances of academic dishonesty will be handled.

Contact Information

Please feel free to contact me at any time. I am best reached by email or phone. If you call and I am not available, please leave a message and I will return your call as soon as I am able.

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