# AP Calculus AB – Course Syllabus

Instructor: Ms. Fredenberg

School Year: 2025–2026

Grade Level: 11–12

Prerequisite: Precalculus or equivalent

Tutoring: 3:10-3:50pm daily

Planning: 2:20-3:10pm

## Course Overview

AP Calculus AB is a college-level mathematics course that covers the foundational concepts of calculus. Students will learn about limits, derivatives, integrals, and their applications in real-world contexts. This course prepares students for the AP exam in May and provides a strong foundation for future studies in STEM career fields.

## Course Goals

By the end of this course, students will be able to:

* Understand and apply the concept of limits and continuity
* Compute and interpret derivatives and integrals
* Solve real-world problems using calculus
* Communicate mathematical reasoning clearly
* Prepare confidently for the AP Calculus AB Exam

## Units of Study

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| --- | --- |
| Unit | Topics |
| 1. Limits and Continuity | Understanding limits, one-sided limits, infinite limits, continuity |
| 2. Differentiation Rules | Derivative definition, power rule, product/quotient rules, chain rule |
| 3. Applications of Derivatives | Motion, optimization, related rates, curve sketching |
| 4. Integration | Antiderivatives, definite and indefinite integrals, area under curves |
| 5. Applications of Integration | Accumulation functions, area between curves, volume |
| 6. Differential Equations | Slope fields, separation of variables, exponential growth/decay |
| 7. Review and AP Exam Prep | Practice exams, strategies, content review |

## Materials Needed

* Graphing calculator (TI-84 or similar recommended and Desmos Graphing Calculator App)
* Highlighters
* Color Pencils
* Graphing Paper
* 1-inch binder
* 8-tab binder dividers
* Access to online resources (Canvas, AP Classroom, Desmos, etc.)

## Grading Policy

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| --- | --- |
| Category | Weight |
| Minor Assessments (Classwork and Quizzes) | 60% |
| Major Assessments (Tests and Projects) | 40% |

## Late Work Policy

## If you submit late, your score might be reduced. For every school day it’s late, you could lose 5% (up to a maximum of 25%).

## Relearning and Reassessment Plan

## Each major assessment you can retake one time. You will need to fill out the relearning/reassessment plan found on the school website and complete any work required before reassessing.

## Expectations

* Attend class regularly and participate actively
* Complete assignments on time
* Ask questions and seek help when needed
* Prepare for assessments and the AP exam

## AP Exam Date

📅 May 11th, 2026 (subject to College Board confirmation)

**Join Remind**

Remind Code: @464edd

## Cellphone Policy Offenses

## First Offense: If you’re caught using your phone during school hours (the instructional day), your phone will be taken away. You can pick it up at the end of the same school day. The incident will be recorded in your discipline record.

## Second Offense: If it happens again, your phone will be confiscated. Your parent can pick it up on the following Friday. Another record will be added to your discipline history.

## Third Offense: Same as the second offense, but you’ll also get one day of in-school suspension (ISS).

## Fourth Offense and Beyond: Your phone will be taken away for ten school days. Your parent needs to schedule a conference with an administrator to get it back. You’ll receive three days of in-school suspension (ISS).

## Noncompliance: If you refuse to give up your phone, it’s considered insubordination. You’ll get two days of out-of-school suspension. Remember, following the rules helps everyone learn better!

## AI Use Policy in Classroom

## Purpose

Artificial Intelligence (AI) tools like calculators, graphing software, and platforms such as ChatGPT can support learning in mathematics. This policy outlines how students may and may not use AI in this course to ensure fairness, integrity, and meaningful learning.

## ✅ Acceptable Uses of AI

* Check your understanding of math concepts (Looking at additional examples after trying the problem yourself and then completing additional problems to show your understanding not AI’s)
* Explore different ways to solve a problem after attempting it themselves
* Review steps for solving equations or graphing functions
* Practice skills with AI-generated problems (with teacher approval)
* Get help with vocabulary or definitions related to math

## ❌ Unacceptable Uses of AI

* Complete graded assignments, quizzes, or tests by AI and claiming it as yours.
* Copy answers or solutions without understanding the process
* Submit AI-generated work as their own without review or modification
* Bypass learning by relying solely on AI for homework or projects

## 📘 Classroom Expectations

* Students must attempt problems on their own first before using AI tools.
* If AI is used for support, students should note how it helped (e.g., “Used AI to check my steps”).
* Students are encouraged to ask questions about anything AI explains that they don’t fully understand.
* The teacher reserves the right to ask students to explain their work verbally or in writing to show they mastered standards being learned.

## 🧠 Why This Matters

AI can be a powerful learning tool—but only when used responsibly. Our goal is to help students:

* Build strong problem-solving skills
* Develop confidence in their own thinking
* Prepare for assessments where AI may not be allowed (like the AP Exam)

## 📅 Policy Review

This policy will be reviewed periodically and may be updated as AI tools evolve.