

5608 W. Friendly Ave
Greensboro, NC 27410
(336) 316-2860

Fall 2024 Advanced Placement Calculus AB Syllabus

Course Title: Advanced Placement Calculus AB. **Credit:** One.

Classification and Maximum Weight: Advanced Placement. 5 Quality Points.

Prerequisites/Co-requisites: Honors Precalculus or permission of instructor.

Instructor Information: Bryan Haywood
haywooj2@gcsnc.com or haywoodjb@guilford.edu

Office Hours – 8:45 am each morning (Tuesdays excluded) or by appointment. Lunchtime sessions are available most days except Wednesday.

Course Description: This course is designed to introduce students to the concepts of Calculus, the mathematical study of change, speed and area. There are three main topics to be covered in this course: the limit and continuity of functions, the derivative, the integral. In this course, students will begin to see connections that bind together mathematical concepts they have encountered previously.

Student Learning Outcomes: Students will develop the background mathematical knowledge in order to be successful in a Calculus course. Students will learn how to use a variety of strategies to solve problems in many disciplines; develop the craft of constructing a proof and using appropriate reasoning; improve ability to communicate ideas about mathematics in writing and speaking; and begin to realize how mathematical ideas relate to each other and contribute to the mathematical structure.

Teaching Strategies: Teaching strategies will include but not be limited to class discussion, exploratory lab activities, exercise sets, group practice activities, as well as formal and informal assessments to drive instruction. We will incorporate a flipped classroom model where students will often watch a video and practice a few example problems before class, making whole-group discussions more productive. Also, we will be utilizing problems in AP Classroom in increasing frequency as we progress through the course to make connections and apply the concepts we are learning.

Evaluation Methods and Guidelines for Assignments: Evaluation will include but will not be limited to teacher observation, progress checks, quizzes, tests, and projects. The student who *prepares* appropriately (takes thorough notes, works with classmates to understand concepts, attempts all problems, troubleshoots their work) and takes advantage of class *practice* time (by participating in board work and using mastery checks as opportunities for improvement) will see success in this class and will *perform* well on tests.

Per district policy, the overall semester grade breakdown is as follows:

40% First Quarter, 40% Second Quarter, 20% Final Exam

Quarter grades will be based on the following percentages:

Tests.....70%

Other Categories.....30%

(including investigative labs, problem sets, quizzes, and other assignments deemed appropriate)

Tests. Advanced Placement Calculus tests are cumulative examinations that take place at the end of every unit. These tests are opportunities for students to communicate their knowledge of mathematics, to demonstrate their problem-solving skills and to make connections between the mathematical concepts of a unit, the course, and other disciplines. The student who properly prepares (organizes his/her notebooks, attempts and completes homework) and takes advantage of classroom practice time (quizzes, board work) will find success when taking tests. While tests certainly aren't the end all measure of success, it is important to realize that tests are generally the best measures of whether a student has appropriately prepared and practiced mathematical skills over the course of a unit.

All of the tests in this class will be formatted similar to an Advanced Placement test. Each test will generally have two sections: Calculator Active and Calculator Inactive with a mixture of multiple choice, short answer, and free response questions.

Guilford County Schools Grading Scale (Policy IHA):

A = 90-100

B = 80-89

C = 70-79

D = 60-69

F = 59 AND BELOW

I = INCOMPLETE

Required Texts/Readings/References: Sullivan and Miranda (2020) *Calculus for the AP Course* (3rd ed.). New York: Bedford, Freeman & Worth

Other Resources: [Flipped Math](#), [AP Classroom](#), [DeltaMath](#), as well as a variety of other resources

Required Supplies: TI-84 plus Calculator, Paper, Graph Paper, Pencils/Pens, One pack of Dry Erase Markers

Topical Outline: This topical outline is for planning purposes and is subject to change. A detailed calendar will be updated daily on the class Canvas Page. Please refer to the canvas page for links to assignments and due dates. You can find more information about the course [here](#).

Unit	Topics
One 8/4 – 8/26	Limits & Continuity
Two 8/27 – 9/13	Differentiation Definition and Basic Derivative Rules
Three 9/14 – 9/24	Differentiation: Composite, Implicit, and Inverse Functions
Four 9/27 – 10/7	Contextual Applications of Differentiation
Five 10/8 – 11/3	Analytical Applications of Differentiation
Six 11/4 – 12/9	Integration and Accumulation of Change

Honor Code: All students must abide by the Early College at Guilford Honor Code. Cheating and plagiarism will not be tolerated.

ELECTRONIC DEVICES POLICY

- The administration, faculty, and staff of The Early College at Guilford acknowledge the value of electronic devices as tools in the learning process.
- Electronic devices may **ONLY** be used for instructional purposes as directed by content area teacher.
- Students should turn cell phones off or silence them and put them in their backpacks (not in pockets, on the desk, etc.). When cell phones may be used for instructional purposes, the teacher will instruct students to get them out.
- ANY unauthorized use of a cell phone or other device during a test or exam, for any reason, is prohibited and may constitute an honor code violation.
- Students are not allowed to answer the phone, text, or check the phone at any point during class.
- If a cell phone is out of a backpack when the teacher has not approved its usage, consequences will be as follows:
 - **1st offense:** Phone confiscated until end of period
 - **2nd offense:** Phone confiscated until end of day
 - **3rd offense:** Phone confiscated until parent picks it up (from then on, student must turn in cell phone at the beginning of class and get it back at end of class)
- Parents/guardians or family members must contact the main office and/or a designated school official to contact a student during instructional time.
- **The Early College is NOT responsible for the items are lost, damaged, and/or stolen.**

ATTENDANCE POLICY

Each student will receive a Guilford County Schools Student Handbook. The GCS Handbook contains vital information regarding the attendance policy. The policy can affect course credit; therefore, it should be read carefully. Please address questions with the main office.

Additional Information:

Late Work: The Early College at Guilford policy is that no late work is accepted for AP courses. Exceptions can be granted in extenuating situations with a consultation with the instructor. If you find that you are getting behind in a class, please communicate with me so that we can work out an appropriate plan.

Make-Up Work and Late Work:

Students are responsible for missed work when absent. Please communicate with your teacher as soon as possible regarding any planned or unexpected absence. Email may be the fastest method of communication. Students must create a plan to make up all work missed in a timely fashion.

A student who misses the day before a test or quiz is still expected to take the test or quiz on the appropriate day. Exceptions may be made on a case-by-case basis for students who have extenuating circumstances. A student who misses a test or quiz date must discuss a makeup date with Mr. Haywood.

Signatures required

Students are required to return this form signed.

I have read and understand this syllabus for the course, AP Calculus AB.

Student name (PRINT): _____

Student signature: _____ **Date:** _____

Parent name (PRINT): _____

Parent signature: _____ **Date:** _____

Parent email address: _____

Parent contact numbers: _____
