AP Calculus AB/BC

**Course Syllabus**

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# AP CALCULUS AB and BC exam date (2 different exams, you will only take one): Monday, May 12, 2025 at 8 AM~noon

**AP practice exams**: Tentatively November 9 (AB), November 16 (AB), December 7 (AB), April 19 (AB or BC), April 26 (AB or BC) and/or May 3 (AB or BC) at CHS. (These are all on Saturdays and optional, but they will give you a better idea of how you will do on the AP exam in May.) You may also stay for FAB to complete 2 out of 4 sections of a practice exam. You may do this as many times as you would like the feedback. Practice exam FAB sessions will start in November.

**Textbook:**

The text assigned to each student is *Calculus of a Single Variable, AP Edition* published by Brooks/ Cole, Cengage Learning. The replacement cost is $131.00. Fines will be assessed for damages other than normal wear and tear. Students may opt out of receiving a textbook since an ebook is available. Digital textbook and homework assignments: Webassign, [www.webassign.net](http://www.webassign.net). Students will be given a code to join the course during class the first week of each semester. Students are expected to have access to a laptop at home or request a laptop from CHS to use for the semester in order to complete daily homework assignments and access the ebook.

**Course Description:**

In AP Calculus AB, students will explore the concepts, methods, and applications of differential and integral calculus. They will work to understand the theoretical basis and solve problems by applying their knowledge and skills. In this course, students will explore the concepts, methods, and applications of differential and integral calculus. They will work to understand the theoretical basis and solve problems by applying their knowledge and skills.

In AP Calculus BC, students will explore the concepts, methods, and applications of differential and integral calculus, including topics such as parametric, polar, and vector functions, and series. They will perform experiments and investigations and solve problems by applying their knowledge and skills.

**Course Objectives:**

During this course the student will learn to…

* Work with functions represented in a variety of ways: graphical, numerical, analytical or verbal. Students should understand the connections among these representations.
* Understand the meaning of the derivative in terms of a rate of change and local linear approximation and be able to use derivatives to solve a variety of problems.
* Understand the meaning of the definite integral both as a limit of Riemann sums and as the net accumulation of change 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.
* Communicate mathematics and explain solutions to problems both verbally and in written sentences.
* Model a written description of a physical situation with a function, a differential equation or an integral.
* Use technology to help solve problems, experiment, interpret results and support conclusions.
* Determine the reasonableness of solutions, including sign, size, relative accuracy and units of measurement.
* Develop an appreciation of calculus as a coherent body of knowledge and as a human accomplishment.

**Supplies:**

\*A graphing calculator is needed for Calculus daily. I recommend the TI 84-Plus or higher.

\*Each student will need at least 1 large spiral bound notebook to store notes and assignments.

**In Class Expectations/Policies:**

* Students are required to have a graphing calculator. I recommend a TI 84-Plus or higher.
* Students will need at least 1 large composition notebook for notes and assignments.
* If a student is absent, the assignment given on the last day present is due the day he or she returns to class. If a student is absent on a test day, the student must make arrangements with the teacher to take the test after school the day following their return to class. It is the ***student’s responsibility*** to promptly check with the teacher regarding make-up work from an absence.
* The CHS Code of Conduct and the CHS attendance policy will be followed in this course.
* All rules as outlined in the CHS Student Handbook will be enforced. Both student and teacher will be on time for class and all 105 minutes will be used for instructional purposes. Students will be attentive during instruction and office announcements.

**Digital Expectations:**

* Log in and complete WebAssign every night for homework.
* On notebook paper, write *every* problem and show the work along with the answer for each problem on the assignment.
* Use the Canes Code and the Mathematics Honor Code when completing digital assignments. This means you should be working independently.
* Maintain a positive attitude.
* Always follow the District and School policies for using technology.

**Discipline Plan:**

The following discipline plan will be used in the event of a classroom disruption:

 1st infraction: Warning and re-assign seat (if appropriate).

 2nd infraction: Phone call home to a parent.

 3rd infraction: Assign 1-day after-school detention (30 minutes).

 4th infraction: Office referral.

 (Fighting and extreme disrespect will be automatic office referrals.)

**Grading Procedures:**

Instruction will begin each day in our class as soon as the bell sounds. Grades are divided into two pieces: semester average and final exam. The semester average counts 90% and the final exam counts 10%. The semester average is further divided into Formative and Summative Assignments.

Formative Assignments are WebAssign assignments/homework and homework quizzes, and AP Assignments. These will count 40% each of your semester average.

WEBASSIGN ASSIGNMENTS/HOMEWORK: You will use WebAssign for practicing each standard. For each assignment you should use notebook paper to copy the problem, show your work, and get an answer. You will then plug in those answers to WebAssign to check yourself. You will be given several attempts to get the correct answer on WebAssign. I will check the written homework daily for completion. You will receive a “plus” for attempting 100% of the assignment. You will receive a “check” for attempting >75% of the assignment. You will receive a “minus” for attempting < 75% of the assignment. Make sure you ask for my assistance for any problems on Webassign that you cannot seem to get a correct answer. It is my intention for you to continue trying to get the correct answer on every problem since the grade from each Webassign assignment will average as part of your Homework Quiz grade.

HOMEWORK QUIZ: Approximately every section or possibly every two sections we will have a Homework Quiz. Your homework quiz will be graded as follows: ~ ½ of points from quiz problems and ½ points from WebAssign average for the material on the quiz. You will receive +2 pts for each “plus” on written homework, +0pts for each “check” on written homework, and -5pts for each “minus” on written homework.

AP ASSIGNMENTS: You will also have outside AP assignments given periodically. The AP Assignments are various multiple choice and free response questions from previous AP exams and also from our textbook.

Summative Assignments are also known as Tests. Tests will be administered once or twice during a chapter. All Tests will average and count a total of 60% of the semester average.

Final Exam: A cumulative final will be given at the end of the each semester and will count 10% of the final course grade.

 Semester Average: *Formative (HW Quizzes/WebAssign, AP Assignments) 40%*

 *Summative (Tests) 60%*

 (Multiply this total by 90%)

 Semester Average 90%

Final Exam 10%

Final Course Grade 100%

**Make-up Work and Extra Help:**

Students who are absent should read and complete the next section of the chapter in the textbook and make arrangements to stay after school to make up any instruction, quizzes or tests missed. Extra help specifically for AP Calculus is available for all students in the afternoons in my classroom. Also you may come for 1 or 2 FAB sessions for Calculus help.