

AP Calculus AB

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Course Description:

AP Calculus (AB) is a challenging, high level mathematics course designed to improve student math abilities and to prepare students for college level mathematics. The main goal of AP Calculus is to actually learn Calculus well and prepare students for the AP Calculus exam in May. The course requires a diligent, consistent effort by each student. The AP Test requires that students can work quickly, remember concepts, and take tests well. By passing the AP test, a student receives college credit. The curriculum for AP Calculus AB is equivalent to that of a first-semester college calculus course and is intended to be challenging and demanding.

Course Objectives:

The course is organized around three big ideas of calculus: limits, derivatives, and integrals. The idea of limits is essential for discovering and developing important ideas, definitions, formulas, and theorems in calculus. Students must have a solid, intuitive understanding of limits. Students should be able to use different definitions of the derivative, estimate derivatives from tables and graphs, and apply various derivative rules and properties. In addition, students should be able to solve separable differential equations, understand and be able to apply the Mean Value Theorem, and be familiar with a variety of real-world applications, including related rates, optimization, and growth and decay models. AP Calculus students should understand the definition of a definite integral involving a Riemann sum, be able to approximate a definite integral using different methods, and be able to compute definite integrals using geometry. They should be familiar with basic techniques of integration and properties of integrals.

Course Requirements:

- Graphing calculator required (TI-84 recommended)
- Math 3 Honors or Pre-Calculus passed with B average or better (you will struggle if this is not the case)
- Materials needed: Post-its, index cards, & correcting utensil

Course Evaluation:

- **Assignments:** Homework will be turned in regularly. An online correction key will be available for students to correct their assignments in google classroom. Each assignment is scored by the student with 3 scores at the top of the paper before they come to class: first, the raw score; second, the decimal score to 3 places to the right of the decimal; and third, a rounded score out of 10. Homework turned in “on-time” in class, properly scored, and work shown will receive a bonus point. Assignments turned in the following class period will receive the score out of 10, but any **late work after that will receive, at most, a score out of 5 points**. Showing work is essential to these assignments, so an assignment lacking work will not receive credit. The AP Test readers expect to see mathematical thought organized and so do I.
- **Labs:** Important calculus concepts may be discovered or taught using group or individual activities.
- **Notes:** Daily class notes are to be written completely in their notebook. Notes are due at the beginning of class on the day of the test. Missed class notes are found on-line and must be copied in the student’s own handwriting.
- **Quizzes:** The daily quizzes will be brief at the beginning of class and test prior topics. The best 10 quiz scores are kept. Any daily quiz missed due to a tardy cannot be made up, but it may be dropped as long as there are at least 10 better scores. Students who miss class often will have difficulty in Calculus. Students who have a school activity on a particular day or other planned activity must make arrangements with me and **take their quiz early**.
- **Tests:** There are two types of tests per term: memorization and content. There are two memorization tests and at least two content tests per term. Students will have one opportunity to take each test within a week of the date it was given in class. There are **NO RETAKES**. All content tests **are comprehensive**. They are formatted similar to AP test (tough). Generally they contain 15 multiple choice and 3 free response questions as well as a calculator and a non-calculator portion. Due to the difficulty level of these tests. There are two safety nets in place: stage two tests & helping in math lab. The class period following a content test, a stage two test will be given where students will work in small groups. Only students who have taken the stage one test at this time will be allowed to take the stage two test. The stage two test adds points to the original test score. Students who help in the math lab each term for one hour will have one test score dropped in that term. Those helping in the math lab are expected to be courteous, productive, and helpful to those they assist for one full hour, otherwise, no test will be dropped.

Course Grade:

Students' grades will be based on

30%	Assignments & Labs
10%	Notes
10%	Quizzes
50%	Tests

The following grading scale will be used:

A	93-100%	A-	90-92%
B+	87-89%	B	83-86%
B-	80-82%	C	73-76%
C+	77-79%	C-	70-72%
D+	67-69%	D	63-66%
D-	60-62%		

Technology:

You must use graphing calculators effectively and efficiently to help you solve calculator-based calculus problems.

Cell Phones are not to be used as calculators nor should they be used during class time. It is expected that cell phones be turned off during class as they tend to disrupt the learning environment.

Teacher Availability:

I am always at school from 7:30 am to 3:00 pm. I am available to assist my students during these times and often stay later after school to assist them as well. Students can contact me by email if unable to come in for assistance, but they should not have unreasonable expectations for my returning the email.

Website:

This site is designed to be a tool for students and parents. Very useful information can be found on my website including: calendars with daily assignments, assignment keys, etc. I recommend students become acquainted with it. It also has videos of the examples and notes from class for those who miss class. The following codes will be necessary to access some items on the website:

Google Classroom:

My AP:

Calculus Assignments

Asgn	Page	Correlating Sections in Calculus Book
1-1	2: 1-27	1.1: 3-7
1-2	7: 1-37	1.2: 12-15
1-3	12: 1-45	1.2: 15-17
1-4	15: 1-47	2.1: 60-65 & 2.3: 78-81
1-5	19: 1-48	
2-1	22:1-51	2.1: 60-65 & 2.3: 78-83
2-2	25: 1-53	2.2: 70-75
2-3	30: 1-30	
2-4	33: 1-23	3.1: 99-102
2-5	37: 1-48	3.2: 109-113, 3.3: 116-119, 2.1: 59, & 3.4: 127
2-6	40: 1-66	
3-1	45: 1-18	3.4: 128-134
3-2	48: 1-29	3.3: 119-121
3-3	50: 1-23	3.6: 148-152
3-4	53: 1-25	3.7: 157-162
3-5	56: 1-19	4.6: 246-250
3-6	59: 1-26	
4-1	63: 1-30	4.1: 187-192 & 4.2: 196-201
4-2	66: 1-29	4.3: 205-207
4-3	70: 1-24	4.3: 207-214
4-4	72: 1-24	
4-5	76: 1-26	
4-6	79: 1-27	
5-1	82: 1-11	4.4: 219-225
5-2	84: 1-17	4.4: 219-225
5-3	86: 1-23	4.5: 233-242
5-4	92: 1-28	6.2: 331-337
5-5	97: 1-30	6.2: 331-337
5-6	101: 1-24	5.4: 294-299
5-7	105: 1-33	

6-1	110: 1-24	5.4: 299-302
6-2	114: 1-27	5.2: 274-282
6-3	117: 1-22	5.5: 306-311
6-4	122: 1-21	7.2: 390-394
6-5	125: 1-27	7.3: 399-400
6-6	129: 1-21	7.3: 400-403
6-7	132: 1-39	
7-1	136: 1-40	1.3: 22-25
7-2	139: 1-33	3.9: 172-173
7-3	143: 1-32	3.8: 165
7-4	147: 1-46	1.5: 37-43
7-5	152: 1-27	3.9: 174-178
7-6	155: 1-32	6.2: 332
7-7	158: 1-37	
8-1	161: 1-28	6.1: 321-323
8-2	164: 1-18	6.4: 350-356
8-3	168: 1-24	6.1: 323-325
8-4	173: 1-33	8.2: 444-450
8-5	178: 1-24	1.6: 46-49
8-6	181: 1-28	
9-1	185: 1-26	1.6: 46-47
9-2	188: 1-39	3.5: 141-145
9-3	192: 1-34	6.2: 332
9-4	196: 1-33	3.8: 165-169
9-5	200: 1-32	6.3: 345-346
9-6	203: 1-31	A7: 612-617
9-7	206: 1-22	