

AP Calculus — Fall 2009  
(Math 113 Section 1, MWF 3:05–4:10, Bailey 100)  
(Math 113 Section 2, MWF 11:45–12:50, Bailey 100)  
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Temporary office hours: Thursday, Sep 10, 2–3pm; Friday, Sep 11, 10–11am. Future office hours TBA. Or you can make an appointment by email.

**Overview** In this course, we study the closely related concepts of *derivatives* and *integrals*, which essentially relate a quantity that may vary over time to its rate of change (which may also vary over time). A separate sheet has a detailed schedule, but here is roughly how it will go:

Chapter 0	Precalculus review	1 week
Chapter 1	Limits and Continuity	1 week
Chapters 2–4	Derivatives	4 weeks
Chapter 5–7	Integration	4 weeks

**Webpage** <http://www.math.union.edu/~hardinc/113/>

**Text** The textbook is *Calculus: Early Transcendentals*, **9th edition**, by Howard Anton et al. The book comes in 4 forms based on what binding you get (hardcover or “binder”) and whether you get the single-variable or combined version. The binder version is cheaper and the cover boasts that it will give you higher grades, though I’m not sure how it accomplishes that. The single-variable version contains all the material needed in this course, while the combined version contains five additional chapters on multivariable material. The combined version is more expensive, but could make sense if you are going to take another calculus course beyond this one.

“Can I use the 8th edition?” I will not go out of my way to make your life difficult if you end up with a copy of the 8th edition, but be aware that section numbers and exercises change between editions, so you will want access to the 9th edition to determine what the readings and exercises are.

**Homework** Homework consists of readings, written work, and online work (with WeBWorK), assigned daily. Written homework will sometimes be collected (this will be announced in advance), but frequently not, so the bulk of your homework grade will be determined by the online assignments.

You should read each section and try to work through some of the homework problems *before* the material is covered in class. You are encouraged to work with other students on the assignments, but the work you turn in must be your own. Please staple.

You may turn in one homework assignment (written or online) up to one week late without penalty. If this late assignment is on WeBWorK, you need to tell me about it so that I can get WeBWorK to accept it. Further late assignments receive no credit. (I urge you to save this for when you legitimately need it; if you squander this privilege and then get sick, you’re out of luck. If you have legitimate reasons for turning in more than one late assignment, talk to me. Legitimate: illness, family emergencies, travel for school events. Not legitimate: other work due on the same day.)

**Quizzes and Exams** We will have a 5-minute quiz at the beginning of class on most Wednesdays, typically 1 or 2 problems, covering the last few classes of material. Every quiz question will closely resemble a homework problem. Your lowest quiz grade will be dropped.

There will be two 65-minute in-class tests during the term: Friday, October 2, and Friday, October 30. There will also be a final exam. Each test will be cumulative, although there will generally be a strong emphasis on material covered since the previous test. Please let me know as soon as possible if the dates of the tests conflict with, say, a soccer tournament so that we can try to work something out.

For each quiz and test, you may bring a  $3 \times 5$  card with notes (both sides allowed). For the final exam, you may bring an  $8.5 \times 11$  sheet of paper with notes to the final. Calculators and computers are not allowed on the quizzes, tests, or final exam; this is to avoid giving anyone an unfair advantage over anyone else based on what calculator they own.

**Grading** Your grades on various aspects of the course will be weighted according to the following table. There are two possible schemes; the second allows your final to count for more if you do well on it. I will automatically apply the scheme that is better for you.

Scheme 1	Scheme 2	
5%	5%	Class participation
15%	15%	Homework
20%	16%	Quizzes
20%	16%	Test 1
20%	16%	Test 2
20%	32%	Final exam

You will get at least the grade that the traditional scale would give you (e.g., 82 would be a B–).

**Calculators and Computers** A calculator is not required in this course, though many students find them useful. My personal recommendation is that you learn how to use Mathematica or MATLAB, for a few reasons: (a) most computers on campus have these installed, effectively making them free for you; (b) anything a calculator can do, these can do better; and (c) proficiency in Mathematica and MATLAB can be worth putting on a resume, depending on what job you are applying for. When you start Mathematica, there should be a “10-minute tutorial” available that shows you how to do many basic tasks. Mathematica is symbolically oriented (it will tell you that  $\tan^{-1}(1) = \pi/4$ ) while MATLAB is numerically oriented (it will tell you that  $\tan^{-1}(1) = 0.78540$ ); however, both pieces of software are capable of both approaches. There are alternatives, and I use Sage for symbolic computation and Octave (similar to MATLAB) for numerical computation; both are free software. Although Sage is pretty hefty (1.6GB installed), you can use it online at [sagenb.org](http://sagenb.org) after creating a free account.

**Resources** There are many sources of help outside of class:

- Other students.
- My office hours.
- Free tutoring at the Calculus Help Center, Sunday–Thursday, 7:30–10pm, Sorum House Seminar Room. (Available from this Sunday, September 13 to the last day of the term.)

If you have a specific disability that qualifies you for academic accommodations, please provide a letter from the Support Services Office as soon as possible and then we can meet to discuss any necessary special arrangements.

**Academic honesty** Because it is okay to work with other students while doing the homework in this course, you might be unsure of exactly where the line between collaboration and plagiarism lies. For the purposes of this course, working through a problem with someone is okay; having someone help you through a problem without simply showing you the work they are turning in is okay; copying the work someone else will turn in is not okay.

For tests, the line is much clearer. Cheating or helping someone cheat during a test can result in failing the test or the course.

*Any changes to the syllabus will be announced in class.*