

# Syllabus: Calculus I, Math 251, section 1 , Spring 2007

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**Honor Code:** For the tests and quizzes in this class you must not give or receive any aid. For the homework and workshops you are encouraged to work with other students, but the work you turn in should be in your own words and should be understood by you.

**Classroom format:** We meet four times a week as shown

M, W, F 9:00 – 9:50 Knott Hall 007 & T 8:00 – 9:15 Knott Hall 005

In general, most days will start with some time for questions on the homework. Then I’ll present some new material, we’ll discuss it a little bit, and then have you practice it. If we have something that might take a big chunk of time (e.g. quizzes, midterms, workshops, etc.) then I might put that on Tuesday, where we have a longer class period.

**Class material:** The textbook is *Calculus: early transcendentals, sixth edition*, by James Stewart. You can have either the single variable version if you don’t think you are going to take Calc III, or you can have the multivariable version if you think you are going to take Calc III (and you don’t mind carrying around a really big book).

You might also want to have a calculator (for most people this means a TI-8n where  $0 \leq n \leq 6$ ) (see item below too) and access to a computer.

**Grade Breakdown:** Your grade will be based on the following percentages for each category of the course.

Homework	Quizzes	Workshops	Midterms	Final exam
10%	10%	10%	20%, 15%, 10% (highest to lowest)	25%

To calculate your grade you take your average in each category, multiply it by the percentage that category is worth, and add these up. Here’s an example

Your scores	HW	Quizzes	Workshops	MT1	MT2	MT3	FX
	83%	75%	80%	60%	88%	75%	90%
Your grade	$.1(.83) + .1(.75) + .1(.8) + .1(.6) + .2(.88) + .15(.75) + .25(.9) = .8115$						

If you want to calculate your grade part-way through the semester, there is no perfect way to decide how to weight the components, but the simplest thing to do is to use the percentages given above, and then to divide by the total of the percentages in the available categories. For example, after the first two midterms you might have

Your scores	HW	Quizzes	Workshops	MT1	MT2
	83%	75%	80%	60%	88%
Your grade	$\frac{.1(.83) + .1(.75) + .1(.8) + .1(.6) + .2(.88)}{.1 + .1 + .1 + .1 + .2} = .790$				

So what do I do with the total percentage? Here’s how the breakdown works:

A	≥ 93	B+	≥ 87	C+	≥ 77	D	≥ 60
A-	≥ 90	B	≥ 83	C	≥ 73	F	≥ 0
		B-	≥ 80	C-	≥ 70		

**Extra Credit:** I will offer a small amount of extra credit in this class. Each day I will keep track of attendance and participation. Perfect attendance and participation will give you an extra 2 percentage points in your class total.

For people who are really struggling with the class, I sometimes make other offers for a small number of percentage points, usually targeted towards something that I think will help the student.

**How to get the grade you want:** The biggest part of the total grade is from exams. To do well on exams, you really need to practice doing problems; do them until you make no mistakes, and then do one more. Still, most people don't do quite as well on exams as they would like. In this case you need your other scores (including extra credit) to bring your exams up.

Here's a typical example of some grades:

Typical A student: Exam average 88%, Other scores 96%, Extra credit 2%, total average 92.4

Typical C student: Exam average 70%, Other scores 80%, Extra credit 0.5%, total average 73.5

**Attendance:** You do not need to attend this class however:

1. Students who attend regularly always do better than those who do not.
2. Attendance gives extra credit towards the total grade.
3. You're paying huge amounts of money to come to Loyola; maybe \$2000 for this class. Interacting with the other students and me is part of what you are paying for.
4. I'd rather everyone come to class. However, I would rather that you stay home than sleep in class! This is purely personal: you might actually absorb something by sleeping in class, but I find that seeing a sleeping student saps my energy, drains my enthusiasm, makes me feel like I'm failing as a teacher, makes me want to look at the board instead of the class, and starts a horrible swirling vortex of gloom and despair. Ok. Maybe not all of that, but still. . .
5. I'll keep track of what we have covered in class each day, and send out emails with a brief description. I will try not to repeat too much, so if you miss class and an example that we covered, I will suggest that you look at a classmate's notes.

**Note taking:** The most time-efficient way of learning material is to come to class each day, pay attention in class, take good notes, and then go over the notes later. If you do this, you can learn a huge amount in the four hours we have together each week + 1-2 hours going over notes later. (In contrast a student learning on their own will often spend 5-6 hours just being really frustrated and stuck.)

What are good notes? That will be different for each person. The minimal would be to have a clear record of each example, with explanations. Many people will want to write down everything I put on the board. Some people will also want to write down some of what I say. In any case, you should try to make the notes clear, so that you can look at them later. A lot of people find that it's nice to have a large margin, so that they can insert comments or additional explanations later.

**Homework:** There's a bunch of points to make about homework.

- Mathematics is very experiential. What this means is that you learn it most by doing, not by listening to me. My purpose is just to give you the basic material that you will work with, to point you at the next topic, and to help keep you from getting stuck.
- There'll be two kinds of homework problems:
  1. Textbook problems. These will be collected, some of the problems will be graded, and others will be just checked off.

2. WebWork problems. WebWork is a web-based homework grading system. It has pros and cons. Pros: every problem gets graded, instant feedback, etc. Cons: need to sign on, need to learn which buttons to press, the computer is unforgiving of small mistakes, etc. Obviously I believe that the pros out way the cons, and I will do whatever I can to minimize problems.

- We'll have two assignments per week, we can decide on which days they'll be due together. Each of these assignments will have one WebWork problem and a bunch of problems from the textbook.
- Homework is due at the beginning of class. You can turn it in up to 4:00 pm of the due date and for a 25% penalty. After this it will not be accepted.
- I'll drop the lowest four homework scores. As a result, I will not accept any late homework assignments (except as noted above) unless you notify me ahead of time. Thus, you should count on doing every assignment well and only using the dropped assignments for real emergencies.

**Quizzes:** We will have a 3 quizzes. These are meant to be easier than the midterms, and serve as a chance for me to find out how you're really doing, and for you to find out what sorts of problems I write and how I grade them. I will announce them ahead of time.

**Workshops:** We will have two workshops. These consist of a (hopefully) interesting problem, that gets a thorough write-up with nice graphs, explanations, etc. You should view these as half math, half written report.

**Tests:** We will have three midterms and one Final. The midterms will be about weeks 4, 8 and 12.

**Note Sheets and Calculators:** I will allow the use of graphing calculators (except those with symbolic capabilities like the TI-89, TI-92, etc) on all exams, but not on the quizzes.

I will allow hand written note sheets on the exams, but not on the quizzes. For each midterm exam the notes can have an area of  $93.5\text{in}^2$  and on the final exam the notes can have a total area of  $187\text{in}^2$

**Office Hours:** I'll have regularly scheduled office hours during the following times.

Monday	Wednesday	Thursday
10:00	11:00	2:00

During office hours I am guaranteed to be there and to have my time reserved for you. Everyone should come to my office at least once (In fact, I will give you extra credit if you do!) You are also welcome to drop by my office at other times, but only if you do not get offended if I'm busy with other work (like meetings, grading or research).

**Disabilities:** I will happily accommodate any needs you have based upon a disability that is registered with the office of Disability Support Services (DSS). You need to contact me ahead of time for this accommodation. You can contact DSS at 410-617-2062, or mwiedefeld "at" loyola.edu .

**Outline** We'll cover chapters 1–4, and part of 5. This includes standard material about limits, the definition of derivatives, various rules and formulas for the derivative, applications, and finally a little bit of integrals. We have roughly 40 lectures to cover the material, so on average, this is about one section per lecture.