Class Information

Differential and Integral Calculus

Math 31A, Lecture 1
Fall Quarter 2011
MWF 10 am–10:50 am, HUMANTS A51

Instructor: Matthias Aschenbrenner

E-mail: `matthias@math.ucla.edu`

> (I will not answer questions by E-mail. *E-mail should only be used to make an appointment.*)

Course webpage: `http://www.math.ucla.edu/∼matthias/31a.1.11f`

Office & office phone: MS 5614; 310-206-8576

Office hours: W 11 am–11:50 am, F 1 pm–1:50 pm, or by appointment.

> (I will *not* hold 'virtual' office hours.)

Discussion sections:

Section ID	Section	Day	Time	Classroom	TA Name
262181201	1A	Tue	10:00 am–10:50 am	MS 5136	Mackey
262181202	1B	Thr	10:00 am–10:50 am	MS 5118	Mackey
262181203	1C	Tue	10:00 am–10:50 am	MS 5118	Buttcane
262181204	1D	Thr	10:00 am–10:50 am	GEOLOGY 6704	Buttcane
262181205	1E	Tue	10:00 am–10:50 am	BOELTER 5264	Lane
262181206	1F	Thr	10:00 am–10:50 am	GEOLOGY 4660	Lane

TA e-mail addresses (all `@math.ucla.edu`):

> Jack Buttcane: `runman`,   Matthew Lane: `mattlane`,   Alan Mackey: `mackeya`
>
> Information about TA office hours are announced by the TAs in the first discussion sections.

Course text: *Single Variable Calculus,* 2nd edition, by Jon Rogawski, W. H. Freeman, New York.

Prerequisites: Successful completion of Mathematics Diagnostics Test or Course 1 with grade of C- or better.

Class meetings: This course meets for lecture three days a week and for discussion section one day a week (four times total). I will conduct lectures on Monday, Wednesday, and Friday. Please feel free to ask questions in lecture, though preferably none regarding homework problems. *Please turn off all cell phones, pagers, and other electronic devices before the lecture.*

On Tuesdays or Thursdays your teaching assistant (TA) will lead a discussion section where he or she can answer any questions, and homework problems can be discussed. The TAs will also help with those problems during their office hours.

Questions concerning homework problems and the course material should first be addressed to the TAs, and then to me, if further clarification seems necessary. Questions concerning grading should be primarily addressed to me, and not the TAs.

Homework: Assigned every week, and collected during lecture on the dates listed below. Homework is due no later than five minutes after the beginning of the lecture.

No late homework will be accepted.

	Due on	Chapter, Section, Problem No.
1	09/30	2.1: 1, 3, 19, 22, 24; 2.2: 1, 9, 20, 38, 48; 2.3: 8, 14, 26, 30; 2.4: 1, 14, 34, 62
2	10/07	2.5: 10, 24, 48; 2.6: 12, 14, 16, 49; 3.1: 2, 28, 30, 44; 3.2: 14, 22, 57; 3.3: 2, 8, 24
3	10/12	3.4: 2, 18, 26; 3.5: 10, 30; 3.7: 4, 8, 62; 3.8: 10, 36, 40, 44
4	10/21	3.9: 6, 15, 18, 29; 4.1: 2, 10, 27, 30, 48; 4.2: 1, 6, 18, 38
5	10/28	4.3: 2, 12, 16, 20, 26; 4.4: 2, 16, 22, 38; 4.5: 2, 10, 26, 52
6	11/04	4.6: 2, 8, 10, 16; 4.8: 16, 34, 40, 50, 68; 5.1: 12, 42, 54, 62, 75
7	11/09	5.2: 14, 16, 46, 56, 75; 5.3: 8, 10, 28, 36, 52
8	11/18	5.4: 4, 6, 12, 25, 30; 5.5: 1, 2, 8, 15, 16
9	11/23	5.6: 8, 14, 30, 70, 79, 82; 6.1: 2, 14, 21, 34, 46
10	12/02	6.2: 2, 6, 10, 26, 56; 6.3: 6, 16, 24, 40, 59; 6.4: 4, 12, 22

Your lowest homework score will be dropped when computing your grade. Homework will be returned the following week in discussion section. The problems will range in difficulty from routine to more challenging. You may work together on the exercises, but any graded assignment should represent your own work.

Put the following information in the upper right hand corner of the first page:

Your Name (first and last)

Date, homework assignment number

TAs name, time and number of discussion section (1a–1f)

On each additional page, put your name in the upper right-hand corner. Work single-sided, i.e., write on only one side of each sheet of paper. STAPLE homework that is more than one page long. Remove all perforation before submitting. Write legibly. Label the chapter + section number as well as the problem number (e.g., 7.2 #2).

Homework that fails to meet the above requirements will be marked "Unacceptable" and returned unread.

Exams: There will be midterm exams on *Friday, October 14* and *Monday, November 14,* during class time. There will be a final exam on *Thursday, December 8,* 11:30 am–2:30 pm, location to be announced.

No make up exams will be given under any circumstances.

For each exam, you must bring a picture ID. No books, calculators, scratch paper or notes will be allowed during exams.

Disputing midterm grades: We put a lot of effort into grading your exams. If you feel that a mistake was made in grading your midterm exam, you may request a re-grade. After each midterm is returned, a strict deadline will be posted on the web page until which a re-grade can be requested. *Be aware that a re-grade means that your exam will be graded from scratch, and it is entirely possible that you will receive a lower score than originally given, if I decide that the original grade was too high.*

Final exams are kept for one quarter, stored for a second quarter to be picked up, and recycled soon thereafter.

Grading policy: Scores and final grades will be available on the MyUCLA gradebook. Your final grade will be based on the following:

$$10\% \text{ for homework}, \quad 25\% \text{ for each midterm}, \quad 40\% \text{ for final.}$$

Letter grades: Assigned according to the departmental guidelines for Math 31A. Letter grades will only be assigned for your final grade in this course.

Academic dishonesty: Students are expected to be thoroughly familiar with the UCLA policy on academic integrity. UCLA has instituted serious penalties for academic dishonesty. *Copying work to be submitted for grade, or allowing your work to be submitted for grade to be copied, is considered academic dishonesty.* Here, 'copying' does not only refer to producing verbatim copies, but includes slightly adapting and submitting material originally due to someone else.

Additional assistance: Besides the office hours (by the instructor and the TAs), additional help is available Monday-Thursday, in the Student Math Center located in MS 3974, where undergraduate math majors as well as math graduate students will be able to help you. For opening hours please check

    http://www.math.ucla.edu/ugrad/smc.shtml

For a list of private tutors see

    http://papyrus.math.ucla.edu/grad/tutors/index.shtml

Syllabus: You are responsible for reading the textbook. I highly recommend studying the relevant section(s) before each lecture so that you are in a good position to ask questions about anything that was unclear. See the next page for a detailed description of what we'll cover when.

Week	Monday	Wednesday	Friday
1			09/23 Limits, Rates of Change, Tangent Line (2.1)
2	09/26 Limits Numerically and Graphically, Limit Laws (2.2, 2.3)	09/28 Continuity, Evaluating Limits, Trigonometric Limits (2.4–2.6)	09/31 The Derivative (3.1)
3	10/03 The Derivative as a Function, Product and Quotient Rules (3.2, 3.3)	10/05 Rates of Change, Higher Derivatives (3.4, 3.5)	10/07 Trigonometric Functions (3.6)
4	10/10 The Chain Rule, Implicit Differentiation (3.7, 3.8)	10/12 Related Rates (3.9)	10/14 **Midterm 1**
4	10/17 Linear Approximation (4.1)	10/19 Extreme Values (4.2)	10/21 The Mean Value Theorem, Monotonicity (4.3)
5	10/24 Shape of a Graph, Concavity (4.4)	10/26 Graph Sketching (4.5)	10/28 Applied Optimization (4.6)
6	10/31 Antiderivatives (4.8)	11/02 Approximating and Computing Area (5.1)	11/04 Definite Integral (5.2)
7	11/07 Fundamental Theorem of Calculus I (5.3)	11/09 Fundamental Theorem of Calculus II (5.4)	11/11 No class
8	11/14 **Midterm 2**	11/16 Net Change (5.5)	11/18 Substitution Method (5.6)
10	11/21 Area between two Curves (6.1)	11/23 Setting up Integrals (6.2)	11/25 No class
11	11/28 Volumes of Revolution (6.3)	11/30 Method of Cylindrical Shells (6.4)	12/02 Review