

University of California, Berkeley
Department of Mathematics

Mathematics 104: Introduction to Analysis
Spring 2005

Tuesday, Thursday 11:00-12:30, 71 Evans

Text: Kenneth A Ross, *Elementary Analysis: The Theory of Calculus*

Bob Anderson

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510-642-5248

501 Evans

Graduate Student Instructor:

Aubrey Clayton, aclayton@math.berkeley.edu, 891 Evans

Aubrey will be working with students in all five sections of Math 104 this semester. He will hold workshops and office hours on Mondays and Tuesdays, times TBA

Purpose:

The principal purpose of this course is to train students to create and write proofs on their own. We will give a rigorous development of the theory of calculus.

Prerequisites:

Math 53 and 54.

Course Requirements:

20% Weekly Homework Assignments, due in class each Tuesday (except Tuesday March 15). I will count the best 12 of 15 problem sets

30% Midterm Test **Thursday March 10 5:00-8:00pm (location TBA)**

50% Final Exam **Wednesday May 18 8:00-11:00am (location TBA)**

Office Hours:

Bob Anderson: Wednesday 1-3 in 501 Evans, or at other times by appointment. The best way to reach me outside of class is via e-mail: anderson@econ.berkeley.edu. **All E-mail from students in the class will be answered.**

Aubrey Clayton's office hours will be on Mondays and Tuesdays, times TBA.

Class Web Site:

All class assignments, announcements, and problem set solutions will be posted at <http://emlab.berkeley.edu/users/anderson/Math104/104index.html>. This will be the most convenient way for you to access course materials, and it is strongly recommended that you use it. You can access this site from either Netscape or Internet Explorer.

Homework Assignments:

The homework assignments are the most important part of the course. You can only learn mathematics by doing it yourself; you only really understand mathematics *well* when you can explain it to others. You are encouraged to work with others on the homework assignments, but you should not *copy* someone else's solution, since that defeats the whole purpose of doing

the homework. If you work with others on a homework problem, the best way to ensure you really understand the solution you arrive at jointly is to write out the solution on your own.

Curve:

I don't adhere to a rigid predetermined grade distribution when assembling the final letter grades. I have in mind a particular standard for what constitutes an A, a B, and so on. In principle, I would be willing to award all A's, or all F's, if the performance of the class justified it; accordingly, you should not feel that you are in competition with other students, or that if someone else does well, that will hurt your grade. In practice, there are likely to be lots of A's, B's and C's, and possibly some D's and F's.

If you want an A in this class, you will need ability and hard work—likely 20 hours per week.

Course Outline:

This outline is an approximate indication of the timing of presentation of the course material; we may run slightly ahead of or behind schedule. The lectures will follow the proofs in the text quite closely; hence, it makes sense for you to focus on listening and understanding during the lecture, even if it means your notes are incomplete.

Lecture	Date	Section
1	T 1/18	4
2	Th 1/20	4,5,7
3	T 1/25	7,8
4	Th 1/27	9
5	T 2/1	9,10
6	Th 2/3	10
7	T 2/8	10
8	Th 2/10	11
9	T 2/15	11,12 + handout on Lim Sups and Lim Infs
10	Th 2/17	12,13
11	T 2/22	13
12	Th 2/24	13 + handout on Contraction Mapping Theorem
13	T 3/1	13,14
14	Th 3/3	14,15
15	T 3/8	Question and Answer Session
16	Th 3/10	No class at 11:00; Midterm Test 5:00-8:00pm, location TBA, covers material through section 14
17	T 3/15	15 No problem set due this week
18	Th 3/17	17
	T 3/22	Spring Break
	Th 3/24	Spring Break
19	T 3/29	17,18
20	Th 3/31	18
21	T 4/5	19
22	Th 4/7	20
23	T 4/12	21
24	Th 4/14	23,24
25	T 4/19	25,28
26	Th 4/21	28,29
27	T 4/26	29,32
28	Th 4/28	32,33
29	T 5/3	33
30	Th 5/5	34
31	T 5/10	Question and Answer Session
	W 5/18	Final Exam 8:00am-11:00am, location TBA