

## Math 131A/2 Fall 2005 Course Information

**Grading System:** Homework: 20%, Hour Exams 20% each. Final 40%  
**Exams:**

- **There are no make-up exams** If you have an excused absence, your grade will be based on the final and homework.
- Exam dates: October 28, November 18, Final: to be announced.

### Homework:

- This will be collected in lectures (beginning the second week of the term), usually on Wednesdays and will be assigned roughly each week.

**About this course:** This is perhaps the most important undergraduate mathematics course that we offer. In many ways it serves as the gateway to graduate mathematics. Although it is concerned with a specific mathematical discipline, analysis, its most important function is to train students how to read and write mathematics.

This may be the most demanding math course that you will take as an undergraduate. Try not to get discouraged and remember that you are not alone! In order to keep up it will be absolutely critical that you :

- a) Attend all lectures and take notes - it would be best if you reviewed your previous notes before you come to lecture.
- b) Read the book and handouts with the utmost care dont be surprised if you find yourself spending an hour understanding a single page!!
- c) Carefully do the problems (dont just copy them from someone else!) Keep in mind that this we will be much more concerned with theorems and concepts than with computations. On homework and tests: Don't write answers without a justification.
- d) Frequently go to the webpage for assignments, corrections, announcements etc.

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### Assignment 1

1. You plan to spend the night at a hotel with infinitely many rooms. You are told that all the rooms are full. Why is it that they can put you up for the night anyway? Use complete sentences in your explanation.
2. a) You place 100 balls on the ground at 11:00AM and remove the first. You place 100 more balls on the ground at 11:30, and remove the second ball. You replace 100 more balls at 11:45, and remove the third ball. Etc. How many balls will be there at 12 noon? Use complete sentences in your explanation. b) What would happen if you instead removed the 101st ball at time 11:30, the 201st ball at 11:45, etc.?

3. State the denials of the following statements (don't just insert the words "It is not true that ...")
  - a) Either you take me for a fool, or you must be a fool yourself.
  - b) He walked into my office this morning, told me a pack of lies, and punched me on the nose.
  - c) If you are right, then I am wrong.
  - d) You are right if and only if I am wrong.
  - e) Which of the following propositions are true?
    - a)  $1.3 < \sqrt{3}$  or chickens have lips.
    - b) 1955 was a bad year for wine and  $\sqrt{2}$  can be written as a fraction.
    - c)  $6 < 7$  or  $7 < 8$ .
    - d) Ducks have claws  $\Leftrightarrow 1 + 1 = 2$ .
    - e) There are infinitely many primes  $\Rightarrow$  The U. S. debt is \$10.
5. 1.1: 8, 9, 10,
6. 1.2: 1, 2, 4, 5, 7, 10