Math 154a: Statistics

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Prerequisites This course follows 154A. We will be covering some of the 154A material just in case your instructor didn't cover it. This course relies heavily on multi-variable calculus, and you are responsible for reviewing that material.

Materials The text is *an Introduction to Mathematical Statistics and its Applications* by Larsen and Marx. You will also need a Bruin Online account. You do not need to pay for this if you plan to use only the campus computers. However, if you have a computer at home and a modem, you will find it extremely useful to invest $29 in the BruinOnline package sold at the ASUCLA store. The BruinOnline account, without the software, is set up by the Office of Academic Computing, on the fourth floor of the MS building. A calculator is also required for this course, although you will not need anything fancy.

Grades Your grades will be based on the following:

1. **Homework** counts for 15% of your total grade.
2. **Quizzes** will be given every Friday, except Fridays on which we have exams. They will count for 10% of your grade.
3. **Midterms** There will be two midterms, and each will be worth 20% of your grade.
4. **Writing Assigments** will count for 10% of your grade. There will be two such assignments, and so each one is worth approximately one-fourth of a midterm. (Together they are worth half a midterm.)
5. **Final Exam** is worth 35% of your grade.

Homepage Once again, we shall have a homepage. The address is http://www.stat.ucla.edu/ 154b1www You should check this page weekly to keep track of any timely announcements. You can find homework assignments, midterm dates, midterm results, office hours, and other information here. Also, there will be a chatroom that allows you to exchange ideas and ask for help with your classmates.

For best results, use a campus computer such as the ones in the third floor lab in the MS building. Your BruinOnline package, if you buy it, also has the software you need to view the homepage on your PC or Macintosh.

Midterms Expect the midterms to be challenging. They will require an understanding of the homework, and will often go slightly beyond the homework by requiring you to solve a problem you haven't seen before. The dates for the midterms will be announced on the homepage. The first will be on or after the fourth week, the second will be approximately four weeks later. **No Makeups** will be allowed **except** for documented medical excuses. However, if you have a time conflict, let me know immediately and perhaps we can reach a compromise. However, I make no guarantees.

Writing Assignments You will be asked to write up solutions to two problems and turn these in on Monday of the tenth week. Problems will be given via the homepage and many will require a fair amount of work, so don't wait until the last minute. Details will be presented along with the problems.

Quizzes will be "inspired" by the homework. Their purpose is to test your knowledge of technical issues and computational skills.

Homework will be collected in class every Friday. Be neat; the reader has been told that she does not have to grade homework she finds illegible.

Final Exam is on Wednesday, March 20, 8am - 11 am.

Outline A (rough) daily outline for the first two weeks is as follows:

1. Confidence Intervals Revisited (5.9-5.10)
2. Testing (6.1-6.2)

3. Size and power of tests (6.3)

4. Likelihood ratio test (6.4) (two lectures)

5. Transforming Random Variables (3.5)

6. The Chi-square and t distributions (7.5-7.6)

7. The t-tests (7.7, 8.1-8.2) (two lectures)

You'll find the lectures easier to understand if you read the book FIRST. Don't worry about understanding everything. Its more important at this stage to make a note of the what you don't understand, and then you can ask about it when the topic occurs in lecture.