

Spring 2004

Stats 10: Introduction to Statistical Reasoning

Robert Gould

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Boelter Hall 9410 (see my web page for directions; it's not easy to find.)

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310-206-3381

Stats Dept: 310-285-8430

Office Hours: Monday 1:30-2:30, Wednesday 3-4

Important Web Pages:

<http://www.stat.ucla.edu/~rgould/10s04> Page for this course

<http://my.ucla.edu> For grades, etc.

<http://www.stat.ucla.edu> Statistics Department page with links to course homepage.

Textbook: Intro Stats, DeVeaux & Velleman

Supplementary Tutorial Software The text comes with a "multi-media" CD. You will find this to be a very helpful supplement to the course, and you might be assigned some work on this CD.

Purpose of Course

The purpose of this course is to teach you how to reason when data are involved. Pick up the newspaper and you won't read far before coming across an opinion, decision, or conclusion that was based on data. Today we swim in data. We use it to make decisions about diet, exercise, finance, politics, business and law. Making these decisions is harder than the newspapers might make it seem because the observations themselves are uncertain, incomplete, or filtered through personal bias. Reasoning with data requires an understanding of the validity and integrity of the data as well as the reasoning process used to connect the observations to the conclusions.

In this class you will learn how to reason with data. We begin in the middle: how can you organize data to see patterns and trends? Next, we talk about methods for collecting data so that we can make the types of conclusions we wish to make. We will want to extend any conclusions or discoveries we make beyond the small data set we collected, and so we study Probability as a tool that helps us do this. Finally we will discuss methods for making inferences about the world based on a limited number of observations.

Grading

Your letter grade will be based on a combination of various numerical scores:

Homework: 13%. Midterms: 40%, Final: 45%; surprise quizzes: 2%

I will also compute your score under an alternate scheme in which the midterms are weighted 45% and the final 40% and you will receive the higher of these scores.

The letter grade is determined by a "curve". The median score (you'll know what that means soon enough!) will be awarded a C+.

Homework: Homework is due each Friday. The first assignment is due this Friday, April 9. All assignments are posted on-line and will not be posted in class. Late homework is not accepted for any reason. "Late" means after 11am on Friday. If you are going to be absent, arrange to turn the homework in early. I will drop the lowest scored homework. If you turn in your homework late, or miss an assignment, then (hopefully) that will be your lowest score and it will be dropped. Homework will be graded on an 11 point scale. Each week, I will choose two problems that will be graded carefully. These will be indicated on the assignment web page with a *. Each problem is worth 5 points. Solutions to these problems will be posted the day you turn the assignments in. The additional point will be awarded if the rest of the assignment is complete. You are responsible for checking your work on the rest of the assignment by talking to your TA, to me, or to your peers.

Midterms: Midterms will be held on Friday, April 30 and Friday, May 28. There will be no make-ups or alternate times allowed; the class is too large. If you cannot make those dates, you should drop the class. If you feel you have exceptional reasons for missing the exams, you should talk to me before April 9. You should bring a calculator (with batteries!) to every exam. The calculator should be capable of computing square-roots, at the very least.

Final: The final exam will be on Monday, June 14, 3-6pm. No alternate dates will be provided, and so if you cannot make that date you should drop the course.

Surprise Quizzes: Sometimes, at the end of class, I will give a brief quiz based on that day's or that week's content. These quizzes will take no more than 5 minutes and will not be graded. However, if you turn it in, you will score a point, and these points will count for 2% of your grade. The purpose of these quizzes is to help me see how well you're following the material, and to correct any misperceptions you might have. Solutions to the quizzes, as well as my thoughts about your answers, will be posted on-line.

Regrades

What do you do if you find a mistake in the grading of your midterm? The rules are as follows: you must submit your complaint in writing by the NEXT lecture after the midterm is returned. This requires that you attend lecture so that you can pick your midterm up. Your complaint should clearly point out which items are being challenged and why. Include your exam. The ONLY reason a question will be regraded is if it was correct but marked incorrect. We will be happy to regrade questions that were incorrect but marked correct, but my advice to you is to not bring those to our attention.

Please don't hesitate to ask questions or challenge the grading AFTER the deadline; your grade will not be changed, but one purpose of the exams is to make sure that you understand the material, and these discussions can be very valuable in making that happen.

Computer Work

Your book comes with a CD-rom that has many interesting and useful features. This course, however, uses the textbook as the primary material. None the less, you will find the CD to be quite helpful in learning some of the concepts. And sometimes I might ask that you view particular "videos".

On the first day of class, therefore, you should install the CD rom on a computer that you will have access to all quarter long and go through the Introduction. This will help you navigate the CD and find materials when you need them. The CD also has some nifty statistical software.

Honors Section

I am offering an honors section for this course in which we'll examine ways that the print (and on-line) media cover statistical topics. You must enroll in Stats 89. We will meet every Wednesday at noon (right after class) in Boelter 5514. The honors section will be a seminar format, and in large part your grade will depend on your participating in discussions and leading a discussion. There will be weekly readings, and you will be expected to find a newspaper (or on-line news) story covering a scientific finding, do a little "digging" to answer some questions about the story, and then report to the class on your findings.