

Course Policies and Syllabus

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Web page: <http://www.soe.ucsc.edu/classes/engr113/Winter03/>

Lectures: Tuesday, Thursday 10:00-11:45am, Earth & Marine Sciences B210

Required Text: *Basic Business Statistics: Concepts and Applications*, Mark L. Berenson, David M. Levine, and Timothy C. Krehbiel, Eighth Edition (2002).

Prerequisites: The formal prerequisites are Econ 1, Econ 2, and one of {Econ 11B, Math 11B, Math 19B}. In practice, the key required skills are the ability to integrate and differentiate standard functions (polynomials, exponentials, logarithms, etc.).

Course Objectives: To introduce the basic ideas of probability and statistics with emphasis on case studies and examples drawn from information sciences and business applications. While we will learn how to do calculations by hand and with the computer, the primary goal is understanding of concepts, including the ability to interpret results. Topics are detailed in the schedule on back, and these fall into four main areas: exploratory data analysis, probability, inference, and regression.

Homework: Homework will be due every Tuesday in class (except Feb. 11). You may discuss homework freely with other students, but you must write up assignments on your own. You must show your work for full credit. The material in this course will build upon itself, so it is important for you to keep current. Assignments will also contain optional problems which are good practice for exams, but will not be graded and do not need to be turned in. Your overall homework grade will be computed by dropping your lowest homework score and averaging the remaining seven scores.

Computing and Labs: We will be using the statistical package “R”. There will be several computer labs throughout the course that are meant to give you practice with computing skills. They are self-paced, and you are to do them on your own time. They will not be collected or graded, but you will be expected to have learned those skills for the regular homework assignments and exams.

Reading: There is a lot of material in this course and it will go quickly. It is expected that you will stay up to date in reading the relevant sections of the text (the schedule is on back).

Exams: There will be an in-class midterm on Thursday, February 6, and a final exam on Wednesday, March 19 from 12-3pm, as designated by the registrar. Both exams are closed book, but you may bring one 8½in by 11in. piece of paper with notes on both sides. Be sure to bring a calculator. The midterm will cover material from chapters 1-8 of the text, and the final will be comprehensive.

Course Grade	Homework:	45%
	Midterm:	20%
	Final Exam:	35%

Date	Sections	Topics
Jan 7	1.1-1.4 1.6-1.9	Intro to the course. Why study statistics? Data types
9	2.1-2.6	Looking at data Using R
14	3.1-3.6	Descriptive statistics, exploratory data analysis (HW #1 due)
16	4.1-4.4	Introduction to Probability
21	5.1-5.4	Discrete distributions – binomial and Poisson (HW #2 due)
23	6.3	Continuous distributions – exponential and uniform Use of calculus in probability
28	6.1-6.2 7.1-7.2	Normal distribution Sampling distributions (HW #3 due)
30	8.1-8.6	Confidence intervals
Feb 4		Review (HW #4 due)
6		Midterm Exam
11		Advising Day (no class)
13	9.1-9.5 9.8	Hypothesis tests
18	10.1-10.3 11.1	More on hypothesis tests ANOVA (HW #5 due)
20	13.1-13.5	Linear regression
25	13.7-13.9	More on simple linear regression (HW #6 due)
27	14.1-14.5	Multiple regression
Mar 4	14.6-14.7 15.1	More on multiple regression (HW #7 due)
6	15.2-15.6	Yet more on multiple regression
11	18.1-18.5 18.7	Quality control (HW #8 due)
13		Review