

University of California  
Department of Applied Mathematics and Statistics  
Baskin School of Engineering  
Winter 2008

**AMS 7:** Statistics for the Biological, Environmental, and Health Sciences

**Lectures:** Tu-Th 8-9.45am, in Baskin Aud 101.

**Instructor:** Raquel Prado, Baskin Engineering 149; 459-1488; e-mail: [raquel@ams.ucsc.edu](mailto:raquel@ams.ucsc.edu)

**Office Hours:** Tu-Th 10.00-11.00am, in BE 149.

**Lab times:**

Tu 4:00-6:00pm	BE 109
W 12:00-2:00pm	BE 109
W 2:00-4:00pm	BE 109
W 5:00-7:00pm	BE 109

**Discussion Sections:**

01B	Tu 6:00-7:10pm	Soc Sci 1 153
01C	W 7:00-8:10pm	Soc Sci 1 145
01D	Th 4:00-5:10pm	Oakes Acad 222
01E	Th 6:00-7:10pm	Baskin 165
01F	Th 7:30-8:40pm	Baskin 165
01G	Th 11:00am-12:40pm	Baskin 372

**TAs:** Saheli Datta and Daniel Zantedeschi

**Website:** The course website is: <http://www.soe.ucsc.edu/classes/ams007/Winter08/>

**Course Description:** The main goal of this course is to present standard statistical techniques for analyzing data from the life sciences. Examples taken from these fields will be presented. Topics include: descriptive statistics, concepts of basic probability and conditional probability, Bayes theorem, binomial and normal probability distributions, estimation and hypothesis testing, ANOVA, correlation and linear regression.

Basic ideas and statistical methodology will be presented during lectures. I will follow the textbook ideas closely, however, a relatively large number of examples that do not appear in the textbook will also be discussed. It is your responsibility to keep informed and current in regard to day-to-day coverage.

I will use slides in most lectures. The slides for a particular lecture will be available online the day before the lecture. It will be your responsibility to obtain the material before each lecture.

A tentative week-by-week plan of the course is attached. We will cover the topics listed in the plan, however, the schedule may change a bit since the pace of the course may be slower or faster depending on the needs of the class. Slides, homework assignments and handouts will be available online.

**Required text:** *Biostatistics for the Biological and Health Sciences* by M. M. Triola and M.F. Triola, 2006. Pearson, Addison Wesley.

**Homework:** There will be several homework assignments in this course. Homework will be assigned during lectures or online. The homework will not be graded, but it is very important that you solve all the problems since between 70% and 100% of the problems that appear in quizzes and exams will be very similar to those assigned in the homework.

### Exams

- **Quizzes (35%):** There will be a total number of **five (5)** quizzes held in class. The tentative dates appear in the schedule. To compensate for emergencies or bad luck **your lowest score will be dropped from the grade computation.** There will be **no make-up for quizzes.** Quizzes will be based on the homework assignments.
- **Midterm (30%):** There will be one in-class midterm exam. Date: 02/12/08. Although it is **VERY** unlikely, the date of the midterm exam may be changed and in such case you will be notified at least two weeks prior to the new date or to 02/12/08, whatever comes first.
- **Final Exam (35%):** The final will be a cumulative exam. The final will be on Tuesday 03/18/08 from 12-3pm. **The date of the final exam will not be changed.** The only excuses for missing the midterm or the final (this does not apply to quizzes) are a serious illness or a major family crisis. In such cases you must provide proof in the form of an official document. If you miss an exam and do not have a valid excuse you will receive a ZERO for that exam.

**You will need a calculator** for the **all** the exams and quizzes. It is important that the calculator has a square root key and logarithms in addition to the usual arithmetic operations.

**Grading policy:** Your final grade (this does not refer to the lab) will be based on 35% quizzes, 30% midterm and 35% final. Any dispute arising in grading of the quizzes and exams should be submitted in writing. This letter should clearly state the question(s) where you think there has been a grading error and what you think the error is. Note that upon resubmission the entire exam or homework may be regraded and not just the disrupted question.

**Computer Labs:** Enrollment in AMS7L is a co-requisite. Material will be linked, but administratively 7L is a separate course. Each lab will consist of a self-paced worksheet with a cover sheet. You should work through the lab, with personnel available for assistance as needed. There will be several questions marked with the symbol  $\rightarrow$ . After completing all questions up to and including that question, you should raise your hand and get your answers for that section checked. If your answers are sufficient, the course assistant will initial your cover sheet for that question (otherwise, they will let you know what needs to be fixed before you can be signed off). At the end of the lab, you turn in your fully-initialled cover sheet, and keep the rest of your lab. A fully-initialled cover sheet gets you full credit for the lab.

There are no labs on Week 1. Additional information about the labs regarding the software and grading policies will be given on Week 2. Please start attending the labs on Week 2.