Course Syllabus and Information
Biostatistics 201A

Course Times and Locations

This course meets Monday, Wednesday and Friday mornings from 9:00-9:50 in CHS 33-105A. There is also a TA-led discussion section each week on Friday from 8:00-8:50 a.m. in 33-105A and 3 lab sections which meet in the computer classroom, CHS A1-241 Mondays 8:00-9:00 and 10:00-11:00 and Wednesdays 8:00-9:00. If you have a scheduling problem with your current lab session, let me as soon as possible. In general you may attend multiple labs provided there is sufficient space. However, please attend your assigned lab initially so we can get a reasonable headcount.

Instructor: Catherine Sugar

Office: CHS 51-236C
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FAX: (310) 267-2113
E-mail Address: csugar@ucla.edu

Office hours: My official office hours are Wednesday from 1:00-2:00 and Thursday from 10:00-11:00. However, I am always happy to answer questions via e-mail or to meet with you at times outside of office hours. Because of the size of the class and my other obligations this quarter it would be helpful if you e-mail ahead to make sure I am free. On Thursdays from 11:00 on I will usually be in my second office in the Semel Neuropsychiatric Institute, Room 28-252, phone (310) 825-6584. I will frequently not be available on Fridays except via e-mail.

Teaching Assistant: Adam King

Office Location: CHS A1-228
Office Hours: Friday 10:00-11:00.
E-mail Address: aking@ucla.edu

Adam will teach the discussion and lab sessions and help you with the computer packages and homework assignments. He has TAed this course for me before and knows the 201A material very well so you should feel confident that he knows what I am looking for!

Text and Prerequisites

The textbook for the course is *primer of Applied Regression & Analysis of Variance, second edition* by Stanton A. Glantz and Bryan K. Slinker. It is *optional* and will supplement my personal lecture notes and handouts, all of which will be posted on the class web site. This book is also frequently used as a reference for Biostatistics 201B. The prerequisites for this class, either Biostatistics 100A and 100B or Biostatistics 110A and 110B, provide a basic introduction to descriptive statistics, probability, estimation, hypothesis testing and linear and logistic regression. While some of this material, particularly the regression modeling, overlaps the content of 201A, the prerequisite is serious. We will go at a much faster poace and in more depth on these topics and you need to be familiar with the basic concepts. If you are unsure whether you have the necessary background for the course please come see me as soon as possible.

Course Objectives

Regression analysis, the study of the dependence of one variable upon other variables, is a central part of many research projects. Linear regression is one of the most commonly used forms of statistical modeling, and virtually all other regression methods (e.g., logistic regression, Poisson regression, multilevel modeling, Cox regression in survival analysis) are extensions of linear regression. The main objective of this course is to learn when and how to use linear regression and related methods and how to properly interpret the results. This course is designed for masters and doctoral students in fields outside of biostatistics and will have a heavy emphasis on practical applications as opposed to theoretical development. A detailed outline of the lecture topics is provided in the course sechedule handout and the associated ASPH (associated Schools of Public Health) learning objectives and conmpetencies are listed at the end of this syllabus.

Computing

Because the focus of this class is data analysis and statistical modeling, we will make considerible use of statistical computing programs. Through the labs and discussions we will introduce you to both STATA and SAS, two widely used packages. In some instances we will ask you to use a particular package to get you accustomed to its format and in other cases we will let you use the package of your choice. The necessary instructions in both packages will be provided as part of the homework assignments. STATA and SAS are both available on the computers in Technology and Learning Center (TLC) lab in the Biomed Library and the CLiCC lab, or you can purchase a copy for use on your own computer. For additional campus locations and other statistical resources see the links on the class web page. The is also a useful set of tutorials on the UCLA Academic Technology Services website, http://www.ats.ucla.edu/stat/.

Handouts and the Class Web Site

Our class web site is **http://www.biostat.ucla.edu/course/201a/fall2011**. I will post all course materials including the assignments, solutions, lecture notes, practice exams, class notices, etc. on this site, so make sure you check it regularly.

Homework

I consider homework to be the single most important component of this class. It is extremely hard to learn statistics, or enjoy it, without working through a large number of examples. Assignments will be made and turned in on a roughly weekly basis. They will consist of a combination of mathematical problems and mini data analysis projects. **The write-up is as important as getting the "right" answer.** Your homework should always include English explanations of what you are doing, why you are doing it, and what the analysis allows you to conclude. If you do not do so, you WILL lose points! An attempt will be made to choose problems and examples from various areas of public health, medicine and current events to make the class more interesting and relevant.

Generally, I will give out homework assignments on Mondays and they will be due in class the following Monday though I reserve the right to adjust the timing. In case people have a few last questions after working on the homework over the weekend, I will allow assignments to be turned in to the TA's folder in the Biostatistics Department Office, CHS 51-254, up until 3:00 pm on the due date. Other than this grace period, no late homework will be accepted except in extraordinary circumstances and with my prior approval. You may drop your lowest homework score. Solutions to warm-up problems will be posted on the web when the assignment is handed out and solutions to the turn-in problems will be added after the assignments are handed in. Graded assignments will be returned in class and/or your lab session as soon as possible after the due date–in most cases in about a week. Concerns about grading should be reported directly to me. Changes in scores will not be made more than two weeks after an assignment or exam has

been returned. Unclaimed assignments will be kept in a box in my office up until grades have been submitted at the end of the quarter and then discarded.

Final Project

In addition to the homework assignments there will be a final project consisting of an in depth analysis of a real data set. The project will be due in the final week of class. Detailed instructions will be handed out later in the quarter when we have acquired enough modeling techniques to productively begin to work on it.

Academic Integrity

Academic integrity is an important part of university life, and will be taken seriously in this class. You may work on the homework assignments with other students. In fact, interaction with your classmates is strongly encouraged. **However, each student must write up each assignment on their own and in their own words.** There is to be no collaboration during examinations.

Students with Disabilities

Any student requesting academic accommodations based on a disability should register with the UCLA Office for Students with Disabilities. A letter of verification for approved accommodations can be obtained from the OSD. Please be sure the letter is delivered to me as early in the quarter as possible so that I can make any necessary arrangements. The OSD is located in A255 Murphy Hall and their website is http://www.osd.ucla.edu.

Exams

There will be a midterm and a final exam in this course:

Midterm 1: Friday, October 28th, During Discussion/Lecture: 8:00-9:50 a.m. (110 minutes)
Final Exam: Tuesday, December 6th, 3:00-6:00 pm.(180 minutes), location TBA

The exams are closed book, closed notes. However, you may bring 2 sheets of paper (8.5 by 11) with formulas and notes on both sides to the midterm, and your midterm notes plus two additional sheets to the final. You should also bring a calculator and writing instrument. Any additional materials, including numerical tables, will be provided unless specified in class prior to the exam. In general I do not give late, early, or repeat exams except where required by university policy. However I know that this year's midterm falls right before the APHA meeting. Please let me know ASAP if this creates a travel problem for you.

Grades

Grades will be based on:

20% Homework and mini data analysis projects. (There will be 7-8 graded assignments, weighted equally unless specifically noted otherwise, and you may drop your lowest score.)
25% Midterm
20% Final Project
35% Final Exam

If it is to your benefit, you may drop the lower of the your midterm score to 10% and increase the weight of the final exam to 50%. You will automatically be given the optimal score. There are no decisions to make in advance. It is also worthwhile to participate in class. Although it is not part of the numerical grading formula, I do take effort and participation into account when determining the grade cutoffs.

Learning Objectives and Competencies