Introduction to Statistical Modeling in Psychology  
PSYC G6006.001  
Spring 2012

Monday (lab) & Wednesday (lecture) 10:10 am – 12:00 pm  
Location: Schermerhorn 200B

Instructors:

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Textbooks and Readings:

Two required textbooks:


We will post additional reading on Courseworks throughout the semester.

Course Description:

This course will cover the full arc of statistical modeling in psychology, from model specification to write-up. In particular, it will be a practical introduction to linear regression, ANOVA, generalized linear models, and statistical mediation.

We will introduce topics in Wednesday lectures and discuss them in the following Monday’s lab section. Students are expected to attend and participate in both.

Throughout the semester, students will be conducting analyses on their own data. At the end of the semester, each student will organize his/her analyses into a final presentation and paper.
**Assignments and grading:**

After each Wednesday lecture, students will have the remainder of the week to prepare the related lab, which will be due the following Monday. For each lab assignment, students will (a) generate two discussion points from the reading, (b) answer any assigned problem sets, and (c) complete an analysis of their own data.

The lab assignments are due in lab on Monday. There will be 12 assignments worth, 60 points in total. Students will receive 5 points for on-time assignments and 4 points for late (after Wednesday) assignments and no points for incomplete assignments.

At the end of the semester, students will summarize the analyses of their own data in a 10-15 minute class presentation and written paper. The paper should (loosely) follow an APA format with a brief introduction to the topic, a detailed methods section, a thorough results section, and a concise discussion.

Presentations will be given on April 30<sup>th</sup> or May 2<sup>nd</sup> and are worth 20 points (all students are expected to attend both presentations days). Papers are due on Monday May 7<sup>th</sup> and are worth 20 points.

**Details of the Lab Assignments:**

(A) Response to the reading  
Students will complete the assigned reading (announced in lecture and posted on courseworks) and generate two responses. These responses should be a short paragraph in length and could be points that the student found interesting, a discussion of a section that was unclear and why, a connection to a previous lecture, etc.—anything that demonstrates active engagement with the reading.

(B) Problem sets  
For most labs, students will be required to answer two textbook questions that will be announced in lecture and posted on Courseworks.

(C) Data analysis  
Following each lecture, students will submit an analysis of their own data that illustrates the analysis method presented in the lecture (if you do not have your own data, we will help you find a dataset of interest to you). We will describe the analysis to be conducted in a post on Courseworks after each lecture. Answers should conform to the following format:

- Explain what the goal of the analysis for your dataset is.
- Provide R code in Courier New Font and use # to explain your code
- Provide the R output
- Write several sentences interpreting your analyses/results/graphs
### Course outline:

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### Additional Resources:

- The Internet (don’t be afraid to ask).
- UCLA has a helpful website: [http://www.ats.ucla.edu/stat/](http://www.ats.ucla.edu/stat/)
- Abstruse help from the R website: [http://www.r-project.org/](http://www.r-project.org/)
- A good matrix/linear algebra class on YouTube: Strang’s 18.06 Linear Algebra
- Inspirational range of R graphics: [http://addictedtor.free.fr/graphiques/](http://addictedtor.free.fr/graphiques/)