Stat 215B

Lectures: Tu/Th 2-3:30, 332 Evans
Discussion: F 12-2, 340 Evans
Final Exam: M May 10, 2010; 11:30-2:30

Instructor: Elizabeth Purdom
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        Office Hours: Tu 3:30-4:30, W 9:30-10:30

GSI: Luke Miratrix
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        Office Hours: TBA

Online: Materials, announcements, homework, etc. will be available through bspace

Textbook:
        Extending the Linear Model with R, J. Faraway
                Errata: http://www.maths.bath.ac.uk/~jjf23/ELM/
        Generalized, Linear, and Mixed Models, McCulloch et al (Recommended)
        Linear Models with R, J. Faraway (Recommended)

Prerequisites: 215A, Linear Algebra, Intro. Probability and Statistics

Assignments:
        There will be homeworks (20%), data labs (50%), a midterm (15%) and final
exam/lab (15%).

Scribing:
        Students will pair up and transcribe the notes for assigned class(es). This will
count as points toward the data lab portion of grade.

Policies

Late Assignments:
> Late assignments will not be accepted except with my approval, which will be only given for truly extenuating circumstances. I expect any requests to be done as timely as possible.

Email:
> 1) If you wish me to read your email, the subject of your email must start with 'STAT215B'
> 2) I do not explain material over email and will not respond to emails with such requests. Please come to office hours, discussion section, or GSI's office hours (or schedule another time to meet if you have irreconcilable conflicts with the office hours).
> 3) I respond to email regarding the class roughly once a day, and almost never in the evening nor weekend.

Academic Honesty Policy
> In fairness to students who put in an honest effort, cheaters will be harshly treated. Any evidence of cheating will result in a score of zero (0) on the **entire** assignment or examination.
>
> For assignments, unless otherwise indicated, students may *collaborate* with other students also in this course, but may not do part or all of the assignment for another student. All write ups must be done independently. Nor may students receive help from any other person not affiliated with this course as a student, a GSI, or an instructor. Obtaining and/or using solutions from previous years or from the internet, if such are available, is considered cheating.
>
> For exams, cheating includes but is not limited to bringing notes or written or electronic materials into an exam or quiz, using notes or written or electronic materials during an exam or quiz, copying off another person's exam or quiz, allowing someone to copy off of your exam or quiz, and having someone take an exam or quiz for you.
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> Incidences of cheating will be reported to Student Judicial Affairs, which may administer additional punishment.

Disability
> If you need accommodations for any physical, psychological, or learning disability, please speak to me after class or during office hours.

Syllabus

The course will be divided roughly into 4 modules. An approximate idea of the schedule is given below, but will be adjusted as needed.

ANOVA / Experimental Design (4 weeks)
- Review of Linear Model
- ANOVA: 1,2-way ANOVA, Estimability, Contrasts
- Principles of design
- Overview of common designs
- Randomization Principles

Random & Mixed Models (3+ weeks)
- Estimation and inference in Mixed Models
- Computation
- Important example (repeated measures, split-plot, longitudinal)

In class midterm – **tenatively** March 11

Generalized Linear Models (GLM) (3 weeks)
- General formulation
- Diagnostics, evaluation, AIC, leverage, etc.
- Quasilikelihood

Classification (3 weeks)
- Methods: SVM/CART/LDA
- Bootstrap/Bagging in classification