STA 6207 – Regression Analysis

Instructor: Dr. Larry Winner
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Office Hours: M 10:00-11:00, Tu 8:30-9:30, W 11:00-12:00
Text: *Applied Regression Analysis, 2nd. Ed*. by Rawlings, Pantula, Dickey

Course Description:
This course provides a survey of theory and applications in linear regression analysis. A full treatment of the linear regression model is covered, focusing on results from mathematical statistics making use of matrix algebra. Computational methods will be used to analyze datasets based on ``canned routines'' as well as a matrix language.

Tentative Topics:

- Simple Linear Regression (Chapter 1)
- Brief Introduction to Matrix Algebra (Chapter 2.1-2.8)
- Multiple Regression in Matrix Terms (Chapter 3)
- Analysis of Variance and Quadratic Forms (Chapter 4)
- Case Study (Chapter 5)
- Model Building: Selection of Independent Variables (Chapter 7)
- Polynomial Models (Chapter 8)
- Models with Class Variables (Chapter 9.6-9.7)
- Problem Areas and Diagnostics (Chapters 10,11)
- Transformations (Chapter 12)
- Intro to Nonlinear Models (Chapter 15.1-15.3)
- Logistic Regression (15.5)
- Random Coefficient Regression Models (Chapter 18.3)

Tests and Grading:

- Exam 1- October 5 – 25%
- Exam 2- November 9 – 25%
- Exam 3- December 15 (5:30-7:30PM) – 30%
- Homework - 20%

Notes:

- Exams will be closed note. I will provide any formulas if necessary
- No make-up exams will be given. Do not plan on leaving town before Final Exam.
- Homework will be assigned on approximately a weekly basis and you will typically have 2-3 class periods to complete them. No late assignments will be accepted, and you must submit paper copies, not e-mail.
- Use e-mail sparingly. It is virtually impossible to answer technical questions via e-mail. E-mail is not a substitute for office hours/lecture.
- SAS and R code for examples in the text are available on class website.