

STA 6207 – Regression Analysis – Fall 2013

Instructor: Dr. Larry Winner

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Office Hours: TBA (Will be posted on webpage)

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:

- Intro to Probability Distributions and Inference (Course Notes)
- 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 (Dates will be coordinated with STA 2023 & 6326):

- (Tentative) Exam 1 (7:00AM-8:25AM) - Sept. 25 – 25%
- (Tentative) Exam 2(7:00AM-8:25AM) - Oct. 30 – 25%
- (Tentative) Exam 3(8:00PM-10:00PM) - Dec. 11 – 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.

University Policies:

Academic Dishonesty: All members of the University Community share the responsibility to challenge and make known acts of apparent academic dishonesty. Acts of academic dishonesty will not be tolerated and will be referred to the Student Honor Council.

Academic Accommodations: If you have a documented disability and wish to discuss academic accommodations with me, please contact me as soon as possible.