Math 644: Regression Analysis Methods

Wenge Guo

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General Information

- Introduction
- Go through the syllabus and other important information about the course
- Big picture of the course
- Office: 210B Cullimore Hall
- Contact information: most convenient way is email
- Office hours: T and F 2:00 pm - 3:00 pm or by appointment

Textbook

- Textbook: (Required) *Applied Linear Regression Models* 4th Ed., by Kutner, Nachtsheim, and Neter. McGraw-Hill, 2004.
- Reference book: (Recommended): *Linear models with R*, by Julian J. Faraway. Boca Raton: Chapman & Hall/CRC, 2005.

Email List

- Email list for the class, to deliver syllabus, lecture slides, homework/solutions, exam/solutions and some important notifications.
- Computing: **R** will be used throughout the course and the assignments.
- Will talk more about computing when we need it.

Big Picture of the Course

- Part I: Simple Linear Regression
  - Linear Regression with One Predictor Variable
  - Inferences in Regression and Correlation Analysis
  - Diagnostics and Remedial Measures
  - Simultaneous Inferences and Other Topics in Regression Analysis
- Part II: Multiple Linear Regression
  - Matrix Approach to Simple Linear Regression Analysis
  - Multiple Linear Regression I and II
  - Regression Models for Quantitative and Qualitative Predictors
  - Building the Regression Model I
- Part III: Nonlinear Regression
  - Nonlinear Regression
  - Logistic Regression, Poisson Regression and Generalized Linear Models
- Midterm (Parts I – II)
- Project (Parts I – III)
- Final (Parts I – III)

Course Evaluation

- Letter grade will be given based on Homework (20%)+Midterm(25%)+Project(20%)+Final(35%)
- Homework: bi-weekly. 6 homework in total. A few R programming exercises.
- Midterm: one and a half hours, in-class, closed book. Tentatively scheduled at 10/26
- Final: two hours, in-class, open book. Will be on 12/14.

Project

- Find an interesting dataset yourself, real data
- Interesting and a little complicated to some extent
- Analyze the data by using regression analysis methods
- Write a report, 8-10 pages
- A group of 2 people is recommended

Any questions/comments?