STAT 563: REGRESSION ANALYSIS 16:960:563:01

SPRING 2012, THURSDAY 6:40-9:30 PM, SEC 203 BUS

1. Course Information

- Instructor: Han Xiao
- Office: Hill Center 451
- Office Hours: Thursday 4:30-6:00 pm or by appointment
- Email: hxiao@stat.rutgers.edu
- Text: *Introduction to Linear Regression Analysis*, by Montgomery, Peck and Vining. Wiley, 2006, 4ed.
- Software: R. Free software available at `http://www.r-project.org/`. If you go to `Manuals` on the left panel of the website, you will find a good introduction *An Introduction to R*. A more advanced reference is *Modern Applied Statistics with S*, by Venables and Ripley. Springer, 2002, 4ed.
- Course website: `http://stat.rutgers.edu/home/hxiao/stat563`
- Course work: six homework assignments, one midterm exam and one final exam. Homework is due in class, and no late homework will be accepted.
- Grades: homework (40%), midterm exam (30%), final exam (30%).

2. Syllabus

Week #	Date	Topic	Reading
1	Jan 19	Review of matrix algebra	Supplementary Reading 1
2	Jan 26	Review of multivariate normal distribution	Supplementary Reading 2
3	Feb 02	Simple linear regression	Ch. 2
4	Feb 09	Simple linear regression	Ch. 2
5	Feb 16	Multiple linear regression	Ch. 3
6	Feb 23	Multiple linear regression	Ch. 3
7	Mar 01	Model adequacy checking	Ch. 4
8	Mar 08	**Midterm Exam**	
9	Mar 22	Transformations and weighting	Ch. 5
10	Mar 29	Leaverage and influence & polynomial regression	$\S\, 6.1 - \S\, 6.3$, $\S\, 6.5 - \S\, 6.7$, $\S\, 7.2$
11	Apr 05	Nonparametric regression & Indicator variables	$\S\, 7.3$, $\S\, 8.1$, $\S\, 8.2$
12	Apr 12	Variable selection & Model validation	Ch. 9
13	Apr 19	Generalized linear models	$\S\, 14.1 - \S\, 14.3$
14	Apr 26	Robust regression	$\S\, 12.1$, $\S\, 12.2$
15	May 03	**Final Exam**	

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[0]A=Assigned, D=Due.