Fall 2014
Stat 8003: Statistical Methods I
Syllabus

Location: Alter Hall, 0A746
Time: Thursday, 2:30-5:00pm
Webpage: http://blackboard.temple.edu(or via TUportal)

Instructor: Zhigen Zhao
Office: Speakman Hall 346
Phone: (215)-204-6208
Email: zhaozhg@temple.edu. Please indicate [Stat 8003] in the subject line.

Office Hours: Tuesday 2:00pm-3:00pm, or by appointment.

Course Description
This is the first year course on statistical methods for both the Ph.D and master students of Statistics Department. Topics include data management, probability distributions, parameter estimation, hypothesis testing, sampling methodologies, graphical display, analysis of variance, and simple and multiple regression.

Prerequisites
A prior course in applied statistics, essentially the standard introductory course that is part of most undergraduate programs (such as Stat 2021-2022 at Temple), is a prerequisite for Stat 8003. Students enrolled are expected to know algebra, elementary differential calculus (including using derivatives to and maxima and minima and Taylor expansion), and elementary matrix operations (including eigenvalues and eigenvectors). If not, the students are expected to be willing to take extra time in the beginning of Stat 8003 to acquire additional background.

Software
We will primarily use R as the computing language in the class. R is an open-source free software available online. You can download it from http://www.r-project.org/. R is installed on all machines in Speakman and Alter Hall.
You will use LaTeX to submit your homework.

Grading
Homework: 40%
Midterm (March 18th, 2014): 20%
Final (TBA): 40%
Class participation that advances the aims of the course is encouraged and may enter into the calculation of your course grade.

Blackboard All course documents will be placed on Blackboard https://blackboard.temple.edu. You are responsible for checking Blackboard frequently for course announcements and course documents. In

addition, I may broadcast e-mail messages to the class. You need to make sure that your email address known to Blackboard is the one you check frequently.

Textbook and Other References

1. Richard M. Heiberger and Burt Holland. *Statistical Analysis and Data Display: An Interme- diate Course with Examples in S-PLUS, R and SAS.* Springer-Verlag, New York, first edition, 2004.

2. Ronald R. Hocking. *Methods and Applications of Linear Models: Regression and the Analysis of Variance.* A Wiley-Interscience Publication. John Wiley & Sons, Inc.

3. Charles E. McCulloch and Shayle R. Searle. *Generalized, Linear and Mixed Models. A Wiley-Interscience Publication.* John Wiley & Sons, Inc.

4. Nalini Ravishanker and Dipak K. Dey. *A First Course in Linear Model Theory.* Chapman & Hall/CRC.

5. *An Introduction to R.* `http://cran.r-project.org/doc/manuals/R-intro.html#Top`

Students with Special Needs

A disability disclosure statement that invites students to disclose their needs, such as: Any student who has a need for accommodation based on the impact of a disability should contact me privately to discuss the specific situation as soon as possible. Contact Disability Resources and Services at 215-204-1280 in 100 Ritter Annex to coordinate reasonable accommodations for students with documented disabilities.

Student and Faculty Academic Rights and Responsibilities Policy

Freedom to teach and freedom to learn are inseparable facets of academic freedom. The University has a policy on Student and Faculty and Academic Rights and Responsibilities (Policy #03.70.02) which can be accessed through the following link:
`http://policies.temple.edu/getdoc.asp?policy_no=03.70.02.`