MAT 500: Statistical Analysis with R

Instructors

Professor H. Hyune-Ju Kim 304E Carnegie
443-1494, 443-1471(message)
hjkim@syr.edu

Lab Instructor: B. Cortese bcortese@syr.edu
Class Hours May 13, 2013-May 17, 2013, 8 a.m.-5 p.m.

Course Description: This course covers statistical methods and their applications with free software R. We will start with a review of probability distributions and exploratory data analysis. Then we will cover one/two sample inferences for mean(s) and proportion(s), chi-square analysis of counts, analysis of variance, and simple linear regression. We will also cover some beyond basic but frequently used statistical methods. More specifically, students will learn about multiple regression, logistic regression, and selected topics in general linear model, and multivariate analysis if time permits. Students will work in the lab each day analyzing data using R and the methods covered in lecture.

Textbook:


References:

- Statistical Inference, 2nd edition, G. Casella and R. L. Berger (CB)
- R in Action, R. I. Kabacoff (RK)
- An Introduction to Statistical Methods and Data Analysis, 6th edition, R. Lyman Ott and Michael T. Longnecker, Brooks/Cole
- The R Book, 2nd edition, M. J. Crawley

Prerequisite: Course work in introductory probability and statistics would be helpful although not required.

Assignments: There will be a data analysis project for which a written report is required. The project will be assigned on the last day, and will be due in the following week.

Grade: Final project (80%), Class participation and lab activities (20%)
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