SPRING 2017 - STAT 641 G100

INTRODUCTION TO STATISTICAL COMPUTING AND EXPLORATORY DATA ANALYSIS - R (2)

Class Number: 9291 *Delivery Method: In Person*

COURSE TIMES + LOCATION:

Th 12:30 PM – 2:20 PM
BLU 9660, Burnaby

EXAM TIMES + LOCATION:

Apr 10, 2017
3:30 PM – 6:30 PM
AQ 3182, Burnaby

INSTRUCTOR:

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PREREQUISITES:

STAT 285 or STAT 302 or STAT 305 or equivalent. Open only to students in departments other than Statistics and Actuarial Science.

Description

CALENDAR DESCRIPTION:

Introduces the R statistical package in the context of statistical problems. Data management; reading, editing and storing statistical data; data exploration and representation; summarizing data with tables, graphs and other statistical tools; and data simulation. Students with credit for STAT 340 or STAT 341 may not take STAT 641 for further credit.

COURSE DETAILS:

Course Outline:

R component

1. What is the R programming environment
   - Downloading and installing
   - Basics of writing R functions
   - Basics of loops/if/while and other control-flow constructs
2. Data management in R
   - Reading and writing data: plain text files and spreadsheets, other file formats
   - Using R to query databases with SQL
   - Merging and re-shaping data
3. Data exploration and representation in R
   - Graphical displays. Customizing and extending these displays for your own research purposes.
   - Cross-tabulations and tests of association.
4. Data simulation and resampling in R

   a. Generating data from parametric distributions: uses in evaluating statistical procedures and in understanding classical large-sample results.

   b. Generating data by resampling: introduction to permutation, bootstrapping, cross-validation and their uses.

Grading

Homework Assignments	25%
Term Test	25%
Final Exam	50%

NOTES:

All grading is subject to change.

Materials

REQUIRED READING:

SAS and R, Data Management, Statistical Analysis, and Graphics, 2nd ed, **by Ken Kleinman and Nicholas J. Horton, Publisher: CRC Press**

GRADUATE STUDIES NOTES:

Important dates and deadlines for graduate students are found here: http://www.sfu.ca/dean-gradstudies/current/important_dates/guidelines.html. The deadline to drop a course with a 100% refund is the end of week 2. The deadline to drop with no notation on your transcript is the end of week 3.

REGISTRAR NOTES:

SFU's Academic Integrity web site http://students.sfu.ca/academicintegrity.html is filled with information on what is meant by academic dishonesty, where you can find resources to help with your studies and the consequences of cheating. Check out the site for more information and videos that help explain the issues in plain English.

Each student is responsible for his or her conduct as it affects the University community. Academic dishonesty, in whatever form, is ultimately destructive of the values of the University. Furthermore, it is unfair and discouraging to the majority of students who pursue their studies honestly. Scholarly integrity is required of all members of the University. http://www.sfu.ca/policies/gazette/student/s10-01.html

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