

SPRING 2016 - STAT 341 D100

INTRODUCTION TO STATISTICAL COMPUTING AND EXPLORATORY DATA ANALYSIS - R (2)*Class Number: 2959 Delivery Method: In Person***COURSE TIMES + LOCATION:**

Tu, Th 8:30 AM – 10:20 AM

EDB 7618, Burnaby

INSTRUCTOR:**Carl Schwarz**

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PREREQUISITES:

STAT 285 or STAT 302 or STAT 305 or equivalent.

Description

CALENDAR DESCRIPTION:

Introduces the R statistical package. 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 may not take STAT 341 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

Term Test	50%
Final Exam	50%

NOTES:

All grading is subject to change.

Materials

RECOMMENDED READING:***Recommended Text:***

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

DEPARTMENT UNDERGRADUATE NOTES:**Students with Disabilities:**

Students requiring accommodations as a result of disability must contact the Centre for Students with Disabilities 778-782-3112 or csdo@sfu.ca

Tutor Requests:

Students looking for a Tutor should visit <http://www.stat.sfu.ca/teaching/need-a-tutor-.html>. We accept no responsibility for the consequences of any actions taken related to tutors.

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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