Syllabus

STA 3100 Programming With Data in R

Fall 2023

Instructor:

Zhihua (Sophia) Su
Office Hours: Monday 3:00 pm -- 4:00 pm, Friday 3:00pm – 4:00pm or by appointment, 207 Griffin-Floyd Hall.
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Teaching Assistant:

Brandon Causing
Office Hours: Monday, Wednesday 9:30 am – 10:30 am, 234 Griffin-Floyd Hall.
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Course Description:

Introduction to statistical computing and programming with data. Topics include basic programming in R; data types and data structures in R; importing and cleaning data; specifying statistical models in R; statistical graphics; statistical simulation using pseudo-random numbers; reproducible research and the documentation of statistical analyses.

Course Objectives:

You will learn to do the following

1. Import data into R and prepare the data for analysis.
2. Write functions in R making effective use of data structures and control structures.
3. Formulate statistical models in the R language.
4. Perform, document, and interpret common statistical analyses.
5. Carry out statistical/probabalistic simulations.
6. Determine statistical graphics appropriate to a statistical analysis and produce them using R.
7. Document and report the results of data analyses and simulations in a reproducible way.

Reference Books:

- r4ds : R for Data Science: Import, Tidy, Transform, Visualize, and Model Data
- r4ds2e : R for Data Science (2e): Visualize, Model, Transform, Tidy, and Import Data

- rp4ds : R Programming for Data Science
- hopr : Hands-On Programming with R : Write Your Own Functions and Simulations
- ggplot2 : ggplot2: Elegant Graphics for Data Analysis
- advr : Advanced R (2nd Ed)

Course Website:

Canvas
Please check this site regularly. Most course documents and important information, including homework assignment and solutions, and special announcements, will be posted there.

Grades:

The homeworks are weekly or biweekly, typically due on Fridays, and they will count for a total of 40%. No drops are allowed. Three in-class exams (supervised via Honorlock) are tentatively scheduled during regular class periods on **October 4, November 1 and December 6**, and they will count 20% each. You will be permitted to bring one 8.5 by 11 sheet of paper with formulas or notes on both sides to each exam. **No make-up exams will be offered.**

The usual 10 point scale (90% for an A, 87% for an A-, 83% for a B+, 80% for a B, …) is used.

All grades are final and not negotiable.

Homework policy:

The professor and Teaching Assistant make every effort to ensure that grades assigned are scrupulously fair and reflect the quality of the work concerned. Due to this process of consultation and the use of uniform grading criteria, the TA has complete authority in all actions that he undertakes regarding the HW, and the professor is unlikely to rescind any of his decisions. Please see the attached TA's homework policy.

Lecture Attendance:

The course requires steady effort throughout the semester. Classroom lecture attendance is fully expected, even if not strictly enforced. You are responsible for learning all material presented during lecture, and any topic covered in lecture is a potential exam topic (unless otherwise stated).

Reasonable Accommodations:

To request classroom accommodation, please be certain that you have made all necessary arrangements with the Dean of Students Office, and obtain from them documentation to submit to the instructor at the time of your request. A request must be made to the instructor at least one week in advance of the date for which the accommodation is requested. This

course information and policies sheet can be made available in alternative formats to accommodate print-related disabilities. Contact the instructor for more information.

Academic Integrity:

Please familiarize yourself with the Student Honor Code and Academic Honesty Guidelines outlined in your University of Florida Student Guide and at http://www.dso.ufl.edu/sccr/honorcode.php