

Statistical Computing in R

Instructor:

Professor Duan
email: li.duan at ufl.edu

Office Hour:

Monday: 3:50 PM- 4:50PM

TA:

Joshua Miles
email: miles.j at ufl.edu

Tuesday: 2:00 PM- 3:00PM (subject to change, email TA first)

Lecture Format:

The course will be delivered both **face-to-face** in the classroom and **synchronously over Zoom**.

The lecture will **NOT be recorded**, therefore no recording will be provided after the scheduled lecture time.

Lecture Time:

M,W,F | Period 8 (3:00 PM - 3:50 PM)

Required Textbook:

Statistical Computing With R
by Rizzo, Maria
2nd Edition

Objective:

The goal of the course is to introduce various important topics related to the modern statistical computing, as an essential requirement for data science. We will focus on both learning the mathematical foundation underpinning the computing methods and the program implementation using R.

Prereq: STA 3100 and STA 4210 and STA 4322 and MAS 4115.

Course Schedule:

The course covers the topics listed the book . We will spend approximately one weeks in each chapter.

A tentative plan is

	Topic
1	Introduction
2	Generating Random Variables
3	Generating Random Processes
4	Visualization of Multivariate Data
5	Monte Carlo Integration
6	Monte Carlo Methods in Inference
7	Bootstrap and Jackknife
8	Resampling Applications
9	Permutation Tests
10	Markov Chain Monte Carlo
11	Density Estimation
12	Numerical Methods in R
13-14	Optimization

Grading and exams:

The total score grade consists of:

Percentage	Source	Date
40%	Homework	Due every two weeks (posted on Canvas)
30%	First Exam	At the beginning of October
30%	Second Exam	Near the end of semester

Note: if there's any disagreement on the score you get for homework / exam, you have *one week of time to appeal* to the instructor after getting your exams back.

The letter grade is tentatively planned as the 10-point scale (90% for an A, 80% for a B, ...), subject to change depending on the final score distribution.

Information on current University of Florida grading policies for assigning grade points is given at: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

Homework:

No late homework will be accepted, except for medical reason with the doctor's note.

Students with Disabilities:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, www.dso.ufl.edu/drc/) by providing appropriate documentation. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Online Course Evaluation Process:

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these evaluations are available to students at <https://evaluations.ufl.edu/results/>.