

Statistical Computing in R

1. Instructor:

L. Duan email: li dot duan at ufl dot edu

2. Class format and time:

The class will be taught **synchronously over Zoom, with cloud recording** posted after the live lecture.

Time: M,W,F | Period 6 (12:50 PM - 1:40 PM)

Additionally, see [Netiquette Guide for Online Courses](#).

3. Communication:

Although attendance will not be recorded, you are encouraged to actively participate in the class. That includes following the lectures, asking questions during the Zoom sessions, and getting help from TA on homework during the office hour.

If the office hours don't work for your schedule, please email the professor to schedule another time.

You may also use the Canvas discussion board to communicate with each other.

https://ufl.instructure.com/courses/407763/discussion_topics/2604827

4. Required Textbook:

Statistical Computing With R by Rizzo 2nd Edition

5. Objective:

Overview of computational statistics and how to implement the methods in R. Topics include Monte Carlo methods in inference, bootstrap, permutation tests, and Markov chain Monte Carlo (MCMC) methods. Prereq: STA 3100 and STA 4210 and STA 4322 and MAS 4115.

6. Course Schedule and Notes

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

You can find the course notes in the "Modules" tab on Canvas.

A tentative schedule is (**click** to open module)

Week	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

7. Grade

The total score grade consists of:

Percentage	Source	Date
70%	Homework	Due every two weeks (posted on Canvas)
30%	Final project (details to announce during the middle of the term)	Due on Dec 14

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

You can track your grades in the "Grades" tab on Canvas.

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>

8. Homework

You can find the homework in the "Assignments" tab on Canvas (with due data posted).

The homework problems will be from the exercise problems in the Rizzo book, and will be assigned as we progress during the lecture.

To earn full credit for the homework, you will need to submit **both the code and the print result of your code** showing the expected result. Partial credit will be given to a partially correct answer.

A homework discussion session will be provided every two weeks (after the submission) on **Zoom**, with cloud recording available as well. If you can't make it to the live session, feel free to post the question on discussion board, and it'll be addressed in the Zoom session.

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And you are encouraged to attend the TA office hour to get additional help on the homework.

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

9. Supports:

Students with Disabilities:

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565, <https://disability.ufl.edu/>) 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.

Additional Technology Support:

UF computing helpdesk

<https://helpdesk.ufl.edu/>

Office of Academic Support

<https://oas.aa.ufl.edu/>

10. Online Course Evaluation Process:

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

11. Technology requirements

A computer with internet access is required.

You will need to install R and Rstudio for this course.

<https://www.r-project.org/>

All is welcomed --- that includes Mac, Windows and Linux (all variants).

We will hold an R help session during the first week to help you install R.

Additional resources on R:

<https://support.rstudio.com/hc/en-us/articles/201141096-Getting-Started-with-R>

<https://www.computerworld.com/article/2497143/business-intelligence-beginner-s-guide-to-r-introduction.html>

For additional help on getting R running on your computer, you may use UF computing help desk.

<https://helpdesk.ufl.edu>

12. Feedbacks

You are encouraged to send any feedbacks and concerns to the professor.

We can schedule zoom meetings to discuss your grade/performance during the course of the semester.

13. Privacy

Please use UF's edu email to communicate with the professor and TA.

Also, see Canvas's website on their product privacy policy

<https://www.instructure.com/policies/privacy>

14. Zoom recording policy

Our class sessions may be audio-visually recorded for students in the class to refer back and for enrolled students who are unable to attend live. Students who participate with their camera engaged or utilize a profile image are agreeing to have their video or image recorded. If you are unwilling to consent to have your profile or video image recorded, be sure to keep your camera off and do not use a profile image. Likewise, students who un-mute during class and participate orally are agreeing to have their voice recorded. If you are not willing to consent to have your voice recorded during class, you will need to keep your mute button activated and communicate exclusively using the "chat" feature, which allows students to type questions and comments live. The chat will not be recorded or shared. As in all courses, unauthorized recording and unauthorized sharing of recorded materials by students or any other party is prohibited.