Topics in Quantitative Methods: R Programming

Fall 2020|PSYC 259|W 2:00- 4:50pm| Location: Zoom Room

Course Description:

Psychologists are increasingly interested in open science. R is a powerful, open-source tool that allows for easy sharing of data manipulation and analysis. Students in this course will learn basic and advanced R programming. They will learn to apply functions for a range of tasks, including data cleaning, analysis, and presentation. We will also discuss how to incorporate R and R studio into their research workflow.

Your Instructors:
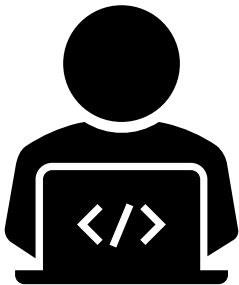
Instructor: Amanda Woodward, PhD

Pronouns: She/Her   Email: amanda.woodward@ucr.edu
Office Hours: Thursdays @ 11am or by appointment*
Office Zoom Room: https://ucr.zoom.us/j/99960284839

TA: Jacob Elder

Pronouns: Email:
Office Hours:
Office Zoom Room:

Note: I am excited to meet you all and am looking forward to seeing you in office hours! The above hours are dedicated solely to meeting with students in this class. However, I know that these times may conflict with other obligations (work, classes, life). If that is the case, I am happy to schedule individual meetings at a mutually agreed upon time. To schedule an alternate time, or to guarantee an individual meeting during my office hours, please contact me via email.

Course Objectives:

By the end of this course, students will be able to:

- Comprehend code written in R
- Use R programming to create data visualizations and analyze data
- Clean and manipulate data
- Create an efficient workflow using R and R Studio
- Interpret and solve coding errors

All R illustrations are courtesy of Allison Horst (https://github.com/allisonhorst)

Grading Information and Course Requirements:

Letter grades will be assigned using the scale below. Final grades will not be rounded. You must fall in an interval to earn the associated grade.

A	93.0 - 100%
A-	90.0 - 92.9%
B+	87.0 - 89.9%
B	83.0 - 86.9%
B-	80.0 - 82.9%
C+	77.0 - 79.9%
C	73.0 – 76.9%
C-	70.0 - 72.9%
D+	67.0 – 69.9%
D	63.0 – 66.9%
F	Below 63%

Weekly Assignments (40%):

Weekly assignments will assess your knowledge of the week's course content. All assignments will be published during class and will be due the following Sunday by 11:59pm. This is intended to give us time to grade assignments and allow you to ask questions in the subsequent class. Weekly assignments will be graded based on good faith effort.

Quizzes (30%):

In addition to weekly assignments, there will be three larger homework assignments. These assignments will include information from prior weeks and will assess your programming ability. These are open note/ open internet and will be graded based on accuracy.

Final Project (30 %)

The final project for this course involves cleaning, analyzing, and visualizing data in an .Rmd file. The project can be done using data from an existing project you are working on, a publicly available dataset, or with simulated data that you create. Additionally, I am happy to supply a dataset if the above options do not work for you. A more detailed assignment sheet will be posted on iLearn.

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Software Requirements:

Zoom:

All lectures and office hours will be held in Zoom. These will be set up as recurring meetings, so you should be able to access them via the links in the syllabus. All links will be posted on iLearn.

Accessing R Studio:

You can download R and R Studio at https://rstudio.com. If you prefer, you can also access R Studio on the cloud: https://rstudio.cloud/projects. We may use other software to facilitate programming and feedback on in class assignments. If this occurs, detailed information will be provided on iLearn.

Helpful Resources:

While there are no required textbooks for the course, you may find the following helpful:

https://rstudio.com/resources/cheatsheets/

http://www.cookbook-r.com

https://stackoverflow.com

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Policies and Expectations

Attendance:

The best way to learn to program is to practice. Each lecture will include example problems and practice problems. If you cannot attend the class, I expect you to try to complete the problems and email me if you have any questions. You are ultimately responsible for the material you miss and completing any assignments.

Self-Care:

I expect you to come to class if you are able. However, life (and 2020) happens. In these cases, I expect you to practice self-care and focus on taking care of yourself. If you require additional resources, please see the following:

- https://ucr.counseling.edu
- https://psychology.ucr.edu/graduate-student-well-being-resources/
- https://studentwellness.ucr.edu/graduate-students#take_a_mental_health_training
- https://casemanagement.ucr.edu

Accommodations:

Please notify me if you have any special needs that you would like to be addressed in or out of the classroom. If you have a disability or require academic accommodations, you can receive support from the Student Disability Resource Center (SDRC) https://sdrc.ucr.edu.

Academic Honesty

Academic misconduct will not be tolerated and University regulations on cheating and plagiarism will be strictly enforced. You may collaborate with other students on assignments, unless otherwise indicated. I expect each person to hand in their own assignment. For more information regarding University policy on academic honesty and enforcement, see https://conduct.ucr.edu.

Class Expectations:

Learning to program can be fun and challenging. In addition to learning the program language, you also need to learn to trouble shoot. While I expect you to put independent effort in to learning R and troubleshooting, I do not expect you to (or want you to!) suffer in silence. I expect that you will ask questions and contact me if you have any issues or problems.

The classroom should be a place where you should feel comfortable and safe. I expect you all to act civilly and professionally.

Technology Etiquette:

Lectures will be held on Zoom. Please remember to mute your mic if you are not speaking.

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Course Schedule:

Week	Day	Date	Content	Class Assignment (s) Due Sunday by 11:59pm
Week 0	Wednesday	09/30	Download R and R Studio	
Week 1	Wednesday	10/07	Introduction to R and R Studio	Weekly Assignment # 1
Week 2	Wednesday	10/14	Basic R Programming	Weekly Assignment # 2
Week 3	Wednesday	10/21	Basic R Programming part 2	Quiz #1
Week 4	Wednesday	10/28	Dataset Manipulation	Weekly Assignment # 3
Week 5	Wednesday	11/04	Stats in R	Weekly Assignment # 4
Week 6	Wednesday	11/11	No Class	Quiz # 2
Week 7	Wednesday	11/18	ggplot	Weekly Assignment # 5
Week 8	Wednesday	11/25	ggplot	Weekly Assignment # 6
Week 9	Wednesday	12/02	Project Flow	Quiz # 3
Week 10	Wednesday	12/09	Catch-up & Advanced R	Weekly Assignment # 7

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