Course overview

Online coursebook

https://geanders.github.io/RProgrammingForResearch/

[graphic—getting these slides]

[graphic]

Time, place, and secondary instructor

- Time: Mondays and Wednesdays, 10:00 am–11:50 pm
- Exceptions:
    - There will be no meeting on Labor Day (Monday, Sept. 2).
    - There are no course meetings the week of Thanksgiving (week of Nov. 25).
- Place: Military Sciences building, first-floor classroom
- Additional Faculty: Dr. Nicholas Good

Office hours

- Office hours: Fridays, 10:00 am–11:00 am, Environmental Health Building, Room 120
- I will arrange a second time for weekly office hours to accomodate those who have a course or other formal obligation (regular lab meeting, regular experimental schedule) during the Friday morning office hours.

Course book

- There is an online book for this course available at:
  https://geanders.github.io/RProgrammingForResearch/
- This book includes course information, course notes, links to
  download pdfs of lecture slides, in-course exercises, homework
  assignments, and vocabulary lists for quizzes.
- This online book is still in development, so it will be evolving
  throughout the semester.

Laptops

- Please plan to bring a personal laptop to all classes.
- If you do not have access to a laptop you can bring to class, talk to me and we can try to figure something out.
- If you are taking 535 or planning to continue to 581A4, we will be working with some large datasets. Please talk to me before the fifth week of class if you have limited space on your laptop.

Content

We will cover four large themes in this course:

- Entering and cleaning data
- Exploring data
- Reporting data results
- Reproducible research

Content

The first week covers preliminaries, and after that there will be "cycles" of covering these topics:

- **Preliminaries** Week 1
- **Basic** Weeks 2–5 (ERHS 581A3 ends here)
- **Intermediate** Weeks 6–9
- **Advanced** Weeks 10–15
- **Final** Week 16

A detailed course schedule is available in the online course book.

Grading—ERHS 535

If you are taking ERHS 535, your grade will be determined based on the following components:

Assessment component	Percent of grade
Final group project	30
Weekly in-class quizzes, weeks 2–10	25
Homeworks 1–6	25
Attendance and class participation	10
Weekly in-course group exercises	10

Grading—ERHS 581A3

If you are taking ERHS 581A3, your grade will be determined based on the following components:

Assessment component	Percent of grade
Weekly in-class quizzes, weeks 2–5	40
Homeworks 1 and 2	30
Attendance and class participation	10
Weekly in-course group exercises	20

Attendance and class participation—ERHS 535

Because so much of the learning for this class is through interactive work in class, it is critical that you come to class.

If you are in **ERHS 535**, out of a possible 10 points for class attendance, you will get:

- **10 points** if you miss two or fewer classes
- **8 points** if you miss three classes
- **6 points** if you miss four classes
- **4 points** if you miss five classes
- **2 points** if you miss six classes
- **0 points** if you miss seven or more classes

Attendance and class participation—ERHS 535

If you are in **ERHS 581A3**, out of a possible 10 points for class attendance, you will get:

- **10 points** if you miss one or fewer classes
- **8 points** if you miss two classes
- **6 points** if you miss three classes
- **4 points** if you miss four classes
- **2 points** if you miss five classes
- **0 points** if you miss six or more classes

Attendance and class participation

Excused absences:

- CSU-related: This is typically missing to attend a conference or for a field study for your research. To be excused, this requires a letter from your advisor.
- Serious medical issue: To be excused, this requires a letter from a doctor or other medical professional.
- For an absence to be excused, you must email me a copy of the letter by the Friday afternoon of the week of the class you missed.

Weekly in-course group exercises

- As long as you are in class and participate in these exercises, you will get full credit for this component.
- **If you miss a class,** to get credit towards this component of your grade, you will need to turn in a few paragraphs describing what woas covered in the exercise and what you learned.
- To get credit for this, you must submit it to me by email by 5:00 pm the Friday afternoon of the week of the class you missed.
- All in-class exercises are included in the online course book at the end of the chapter on the associated material.

Weekly in-course group exercises

[In-course exercise graphic]

Homework

- In the first five weeks, there will be two homework assignments (see detailed schedule in the online course book).
- These should be done individually.
- Homeworks will be graded for correctness, but some partial credit will be given for questions you try but fail to answer correctly. Some of the exercises will not have "correct" answers, but instead will be graded on completeness.

Homework

[Homework graphic]

Homework

- Homework is due to me by email by 5 pm on Fridays (Friday, Sept. 13, and Friday, Sept. 27 are the due dates for the first five weeks of class).
- Your grade will be reduced by 10 points for each day it is late, and will receive no credit if it is late by over a week.

In-class quizzes

- You will have quizzes weekly, starting next Wednesday (Sept. 4)
- Quizzes will be on Wednesdays at the start of class (first 10–15 minutes)
- For students in ERHS 535, quizzes will continue until week 10 of the course

In-class quizzes

- Quiz questions will be multiple choice, matching, short-answer, or similar styles of questions. The questions are designed so that each can be answered fairly quickly.
- If you miss a class with a quiz, you may make it up during office hours on the week of the missed quiz. Except in exceptional circumstances, this will be the only time when make-up quizzes will be offered.

In-class quizzes

- There will be *at least* 10 questions per quiz. Usually, there will be 12–15.
- If you get, on average, 10 correct questions per quiz, you will get the maximum possible points for the quiz component of your grade.

For ERHS 535 (nine quizzes total):

$$\text{Quiz grade} = 25 * \frac{\text{Number of correct quiz answers}}{90}$$

For ERHS 581A3 (four quizzes total):

$$\text{Quiz grade} = 40 * \frac{\text{Number of correct quiz answers}}{40}$$

Note: You can not get more than the maximum of for this component quiz component (25 points for ERHS 535 students, 40 points for ERHS 581A3 students).

In-class quizzes

- The "Vocabulary" appendix of our online book has the list of material for which you will be responsible for this quiz.
- Most of the functions and concepts will have been covered in class, but some may not.
- You are responsible for going through the list and, if there are things you don't know or remember from class, learning them. To do this, you can use help functions in R, Google, StackOverflow, books on R, ask a friend, and any other resource you can find.

[Quizzes graphic]

In-class quizzes

An example of the vocabulary list:

- `mean()`
- `read_csv`, argument `skip =`
- R object
- open source software
- Hadley Wickham

In-class quizzes

- Using R frequently in your research or other coursework will also help you prepare.
- Working on your homework assignments will also help you prepare.

What you have due soon

- Wednesday, Sept. 4, during class: First in-class quiz. The "Vocabulary" appendix of our online book has the list of material for which you will be responsible for this quiz (Quiz 1 list).
- Friday, Sept. 13: First homework is due by 5:00 pm by email.