STAT 311: Elements of Statistical Methods
Ranjini Grove
Autumn 2020

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Office Hours: TBD
Class Hours: MWF 2:30 pm -3:20 pm

Course Description

STAT 311 is a modern introduction to the discipline of statistics. Students are immersed in realistic
data-driven tasks from the start of the quarter and will learn to navigate their way using a mix of
statistics, computer literacy, and last but not least, good old-fashioned common sense.

Course Objectives

At the end of this course, students should be able to

1. Identify limitations in data collection methods and explain how this limits the scope of in-
ference.

2. Use the programming language R to summarize patterns in data visually and numerically.

3. Explain the unifying logic of statistical inference.

4. Apply estimation and testing methods to analyze single variables, and also the relationship
between a numerical response and a binary predictor.

5. Model a numerical response using a single numerical predictor variable (simple linear re-
gression).


Required Materials

- Open Intro Statistics, 4th edition
- Laptop with reliable internet access
  - The Student Loan Tech Program is a great resource in case you do not have access to a
    laptop.
  - Xfinity WiFi Hotspots will be available for free to anyone who needs them. A map of
    hotspots can be found here. At a hotspot, select the “xfinity wifi” network and then
    launch a browser to connect.
- Chrome internet browser with the extension Proctorio enabled. Please read this page if you
  have any concerns about privacy issues.
Course Structure

The course will cover six themed units from the text, although not necessarily separated out as cleanly as suggested below:

- Introduction to data
- Summarizing data
- Probability
- Foundations for inference
- Inference for numerical data
- Introduction to linear regression

Roughly speaking, each M/W/F class will involve presentation of new material followed by guided practice. The Tue/Thur classes will involve a mix of guided practice and computer instruction.

You will have the option of tuning in live to class or section (synchronous sessions) or to watch the recording afterwards. However, this class is structured as a live class; students who are looking for an asynchronous class should consider STAT 311 C.

Course Communication

Given the large number of students in this class, I ask that you contact the TA in charge of your section for questions related to logistics (e.g., due dates/exam dates, add codes). Contact information for the TAs is below. If it seems helpful, TAs may forward your question and their answer to the class. Please let the TA know if you do not wish them to do so.

- Daniel Suen: dsuen@uw.edu
- Pete Zuckerman: przuck@uw.edu
- Trinity Fan: fansx@uw.edu

Questions asking for clarification on homework content, exam content etc. should be posted on Piazza in CANVAS.

Questions regarding lecture content, regrade requests, due date extensions etc. should be sent to the instructor.

Finally, if you send a question that is in the syllabus, you will be directed to the syllabus. So please take the time to read through it.

Exams and Homework

There will be a written homework assignment (with a separate lab component) due roughly every week.

We will also have three quizzes evenly spaced throughout the quarter. All quizzes will be on CANVAS during the Friday lecture and proctored using the online proctoring tool Proctorio.

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<tr>
<th>Test</th>
<th>Date</th>
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<tr>
<td>Quiz 1</td>
<td>Oct 23</td>
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Grading

Your final grade will be weighted as follows:

- 60% quizzes (3 quizzes, 20% each)
- 10% labs (no lab will be dropped)
- 30% homework (no homework will be dropped)

If you obtain a 60% or higher according to the grading scheme above, you are guaranteed a 2.0.

Course Policies

- **Attendance** is strongly encouraged and expected. All sessions are conducted “live”, but will be recorded. However, if you prefer asynchronous classes, please consider STAT 311 C. STAT 311 A is structured very differently in terms of the expectations of due dates, assignment times, office hours, and response times. It will work best for students who are able to participate despite remote instruction.

- Lab check-ins and homework must be submitted online by midnight on the due date. The drop box will remain open for 12 hours past the due date/time. Any submissions made during this time will be graded, but subject to a lateness penalty of AT LEAST 20% and may be as much as 50%. No further exceptions will be made past the 12 hour mark.

- Late assignments will only be accepted provided the instructor is notified in advance of the due date and it is approved. Please note that extension requests will typically not be approved during weeks in which there is a quiz.

- **Missing a quiz** In the event of illness, please contact the instructor as soon as possible.

- **Academic Accommodations**: Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course.

- **Academic integrity** is essential to this course and to your learning. Violations of the academic integrity policy include but are not limited to: copying from a peer, collaborating where it is not allowed, copying from an online resource, using a solutions manual, and using resources from a previous iteration of the course. If you are unsure about whether a particular action would be construed as academic misconduct, please ask. Anything found in violation of this policy will be automatically given a score of 0 with no exceptions. If the situation merits, it will also be reported to the Office of Community Standards and Student Conduct for investigation.

- Autumn 2020 has also been designated as an **extraordinary circumstance** quarter. This means you can switch to S/NS grading at any time, even after your grade has been posted. Please consult this page for the official University policy.
• **Religious Accommodations:** Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW policy, including more information about how to request an accommodation, is available at Faculty Syllabus Guidelines and Resources. Accommodations must be requested within the first two weeks of this course.

• **Safety and Health** Take care of yourself. Do your best to maintain a healthy lifestyle this quarter by eating well, exercising, getting enough sleep and taking some time to relax. This will help you achieve your goals and cope with stress. All of us can benefit from support during these times of struggle. You are not alone. Asking for support sooner rather than later is often helpful.