STAT 342: Introduction to Probability and Statistics 3

Ranjini Grove
Spring 2022

E-mail: grover4@uw.edu
Office Hours: TBD
Class Hours: M/W 11:30-12:20 pm and F 11:30 - 1:20pm

Course Description

STAT 342 is the last course in a three quarter sequence on Probability & Mathematical Statistics. In this course, we will continue our study of statistical inference for a variety of data settings. More specifically, we will cover the following sections from the text. Please note that this list is tentative.

- Estimating variance (§4.6)
- Inference for the mean, variance unknown (§4.7, §4.9)
- Confidence intervals for a proportion (§4.8)
- Maximum likelihood estimators (§5.1)
- Likelihood inference (§5.3 – §5.5)
- Goodness of fit testing (§5.6)
- Inference for two-way tables (§5.7)
- Bayesian inference (§5.9)

Prerequisites

Students must be extremely comfortable with calculus and probability at the level of STAT 340 and the basic concepts of statistical estimation and hypothesis testing. Formally, we require a minimum GPA of 2.0 in STAT 341.

Required Materials

- **Laptop** with access to the Internet.

Course Structure

Most weeks, the course will be divided into 3 lectures and a section on Mondays. The lectures will be taught by the instructor while the TA will lead discussions during section.

Assessments

There will be a written weekly take home assignments due on Tuesday by midnight. Your first take home will be assigned on Tuesday April 5 and will be due on Tuesday April 12. In addition, you will have two in-class quizzes. The dates are as follows.
Quiz 1  Monday  April 25
Quiz 2  Monday  May 16

There will be a comprehensive final on Wednesday, June 8 from 2:30-4:20.

**Grading Policy**

The UW undergraduate grading scale will be used. I reserve the right to curve the scale dependent on overall class scores at the end of the semester. Any curve will only ever make it easier to obtain a certain numeric grade. The grade will count the assessments using the following proportions:

- **20%** of your grade will be determined by 2 in class quizzes (10% each).
- **60%** of your grade will be determined by your homework.
- **20%** of your grade will be determined by the final exam.

I do not have a set grading scale. Typically the mean GPA in the course is around 3.5 - 3.6.

Since your homework is worth a substantial percentage, we will expect more independent effort from you. We may not answer questions that are essentially looking for validation. We will only answer legitimate questions.

**Course Communication**

You are encouraged to use Ed for all course related questions. Please also be mindful that some questions are better suited for office hours, especially open ended questions that ask for concepts to be explained and such.

Students are encouraged to form study groups with their peers. The best way to learn and grow is by teaching.

**Course Policies**

- **Attendance** is strongly encouraged. All sessions will be conducted in person. Please note that we will attempt to provide recordings of class sessions, but this is not guaranteed.
- Homework must be submitted online by midnight on the due date. We will be using GradeScope this quarter for homework submission and grading. More details to follow.
- 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.

- **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 Religious Accommodations Policy (https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy). Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form (https://registrar.washington.edu/students/religious-accommodations-request/)

- **Safety and Health** Take care of yourself. Do your best to maintain a healthy lifestyle this quarter by eating well, exercising, avoiding drugs and alcohol, 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.