PSTAT 100

DATA SCIENCE CONCEPTS AND ANALYSIS; SPRING 2024

Instructor: Ethan P. Marzban (he/him)

Course Site: ucsb-pstat100.github.io

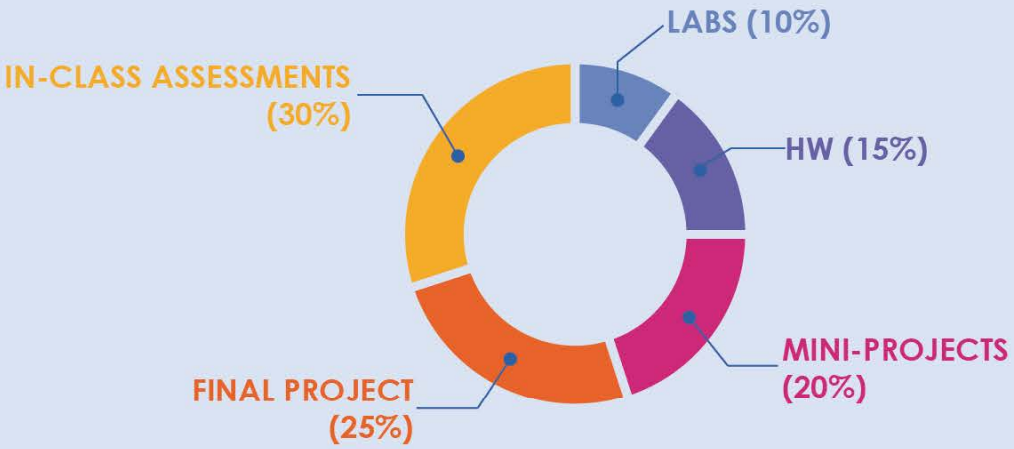
WEEKLY MEETINGS

Tuesdays and Thursdays, 9:30am - 10:45am (PDT)
in Buchanan Hall, 1940

TEACHING ASSISTANTS

- TBD
- TBD

TENTATIVE GRADE BREAKDOWN



Approximate Grade Cutoffs

- A^- – A^+: [90, 100]
- B^- – B^+: [80, 90)
- C^- – C^+: [70, 80)
- D^- – D^+: [60, 70)
- F: [0, 60)

Cutoffs may be adjusted at the end of the quarter, depending on class performance.

OVERVIEW OF REQUIRED ASSIGNMENTS

WE WANT YOU TO SUCCEED! To that end, we have designed a wide array of different assignment types which will be used to periodically check-in with you and your understanding of the course. These assignments are:

LAB ASSIGNMENTS

Designed to give you an introduction to relevant programming concepts, and give you a chance to practice them.

HOMEWORK ASSIGNMENTS

Designed to give you an opportunity to practice both the coding and theoretical concepts learned throughout the course.

MINI-PROJECTS

Open-ended assignments designed to help you engage with a real-world data science application.

FINAL PROJECT

A comprehensive end-to-end endeavor, designed to simulate a real-life data science project.

IN-CLASS ASSESSMENTS

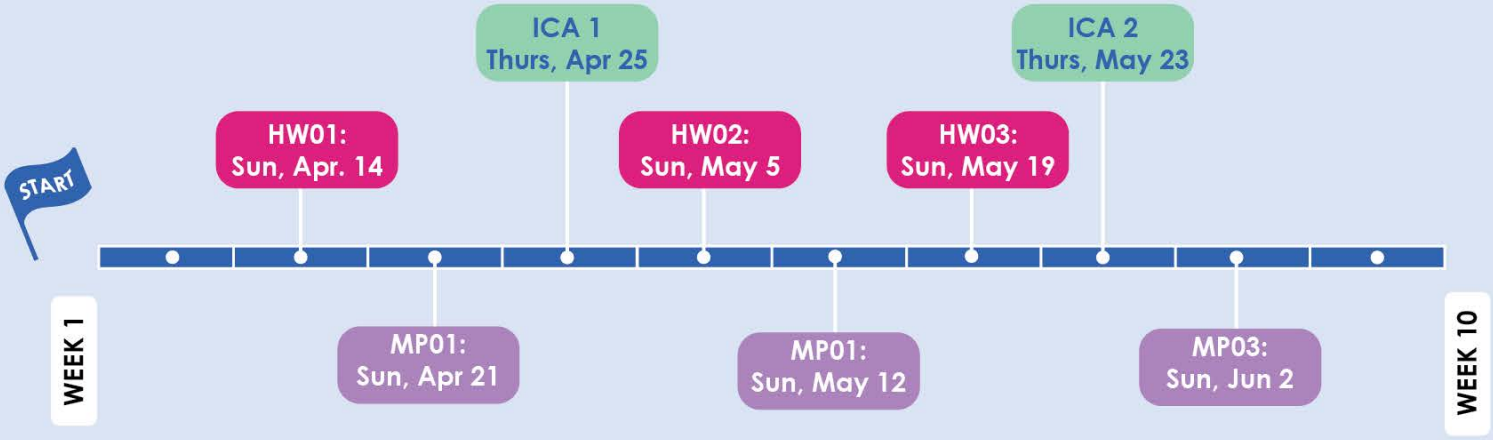
Majority-multiple-choice assignments, designed to assess your understanding and retention of course material.

LATE SUBMISSIONS

We understand that life happens! To that end, you are allowed two late submissions throughout the quarter on labs and homeworks, that must be submitted within 48 hours of the original deadline, no questions asked.

TENTATIVE ASSIGNMENT DEADLINES

Assignment Deadlines are 11:59pm PDT; ICAs take place during lecture time.
Any changes will be announced on Canvas and the Course Website.



SOME POTENTIALLY USEFUL RESOURCES

DISABLED STUDENTS PROGRAM (DSP): https://dsp.sa.ucsb.edu/

If you require accommodations for lectures, in-class assessments, or assignments in general, DSP is a great office to consult in order to get you those accommodations. The DSP office also handles short-term accommodations, for example due to a sprained wrist.

CAMPUS LEARNING ASSISTANCE SERVICES (CLAS): https://clas.sa.ucsb.edu/

Though CLAS does not have a designated resource for PSTAT 100, they do offer extensive support relating to many PSTAT classes (including PSTAT 120A), and can be a great resource to get additional help from outside the course staff.

COUNSELING AND PSYCHOLOGICAL SERVICES (CAPS): https://caps.sa.ucsb.edu/

College can be stressful! CAPS is here to help you navigate that stress, and try and help you navigate the complexities of being a student. In addition to various counseling services, they also have a selection of "egg-chairs" which can provide a nice physical break from the daily grind.

TECHNOLOGY NEEDS: https://basicneeds.ucsb.edu/resources/technology-resources

As a part of this course, you will be asked to program using the language "R". This will necessitate that you have access to a laptop, which we understand is not the case for everyone. Please consult the link above for information on how to obtain a loaner laptop and other technological needs.

PREREQUISITES

PROBABILITY (PSTAT 120A)

LINEAR ALGEBRA (MATH 4A)

</> PRIOR PROGRAMMING EXPERIENCE (eg. CMPSC 9 OR CMPSC 16)

As we will soon see, Data Science lies at the intersection of many fields; most prominently statistics, mathematics, and computer science. As such, a strong introduction to all three of these fields will set you up for great success as a Data Scientist! As such, each of these prerequisites touch upon one of these fields

Additionally, we will be programming in the language "R", but you are not expected to have any prior experience with R specifically.

LEARNING OUTCOMES

At the end of this course, we hope you will be able to:

1. critically assess data quality and sampling design
2. retrieve, inspect, and clean raw data
3. understand the basics of exploratory, descriptive, visual, and inferential techniques
4. interpret and communicate results in context

FOR ADDITIONAL INFORMATION ON POLICIES, COURSE STAFF CONTACT INFORMATION,AND A WEEKLY BREAKDOWN OF TOPICS AND LECTURES, PLEASE CONSULT THE MAIN COURSE SITE. THANKS!