Stat 215B Syllabus (Spring 2026)

Instructor: Amanda Coston
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Units: 4
Lectures: Tuesday/Thursday 2:00pm – 3:30pm in Evans 1011

Office hours:
Instructor: Thursdays 3:30–4:30 pm, Evans 427
GSI: Tuesdays Noon-1:00pm & Wednesdays 1:00pm-2:00pm Evans 444
GSI: Nicolas Sanchez (nicolas_sanchez_ep@berkeley.edu)

This is a course about the theory and practice of applied statistics. This course aims to develop critical thinking skills and advanced statistical techniques necessary for rigorous applied work. The format is discussion-based. Particular attention will be paid to controversial case studies and common fallacies made in applied statistics.

Prerequisites: 215A

This course will use:

- **Course website:** https://stat215b.berkeley.edu/spring-2026/
- Ed for discussion and course announcements
- Gradecope

Grading

- In-class Discussion (50%)
- Project (30%):
  - Final report (15%)
  - Presentation (10%)
  - Mid-semester report (5%)
- Assignments (20%)

Readings

Each class will discuss a series of papers/book chapters. All students are expected to have read the materials before class. Readings will be posted in advance on the course website.

Discussion Format

At the start of each class, I will randomly pair you in groups of 2–3 to discuss question released at beginning of class and/or raised by other students. You may not use any devices during discussions.

You may consult printed materials including print out of paper or other papers, textbooks etc. It is recommended to print out the readings for class since you may not use your device to reference them. After discussing in pairs, we will reconvene as a group and open up for group discussion.

Grading based on discussion will follow three dimensions: engagement, insight, and respect. Full points will be awarded for engagement if you are present and attentive during class. Full points will be awarded for respect if you engage according to the community discussion guidelines we agree on during the first week of class. Insight reflects quality of your engagement in class, and you can contribute this by asking insightful questions, providing thoughtful responses to others' questions, and/or making connections to earlier papers or material from 215a.

Each class will be graded, and the **lowest four class grades will be automatically dropped**. This policy is intended to cover course absences due to illness, conference travel and other emergencies. Talk to me at the start of the semester if you anticipate needing to miss more classes. Otherwise, I will only grant exceptions to this policy with a doctor's note or equivalent.

Assignments

There will be 4–5 assignments throughout the semester that will involve data analysis typically on a dataset represented in one of our discussion papers. Assignments will typically ask you to produce visualizations or tables and then provide a discussion of the analysis and results. You may complete the assignments using R or Python. You are allowed to consult your peers during assignments but the submitted code and responses must be your own.

You are highly encouraged to attempt to code the assignment initially without using generative AI, and then you may use generative AI to check the correctness of your code. You are also highly encouraged to formulate the argument for your written discussion on your own, and then you may use generative AI to aid your exposition. If you choose to use generative AI, you risk losing partial or full points for the assignment if it's clear you did not engage meaningfully. For more on the use of generative AI, see the generative AI section below.

Late assignments will not be accepted. You are encouraged to plan accordingly. I will only grant exceptions to this policy with a doctor's note or equivalent.

Project

You will complete a final project in groups of 2. The project can take one of two forms:

1. **Replication and re-analysis:** Students replicate and re-analyze the results of an academic paper whose original datasets or similar datasets are publicly available. Datasets provided by authors on the publication website are cleaned already and should match the authors published results exactly, so please do not use the cleaned datasets on the publication website unless the paper is an experimental study. As a part of the replication exercise, you and your group should download the original dataset and clean it to approximately match the sample selection used in the published paper.
2. **Applied data analysis:** Students propose an applied research question for a publicly available dataset (e.g., one in an academic paper). Students formulate a scientific question, select method(s) suitable for answering this question, and present results. For this type of project, you may use a cleaned dataset.

For other forms of final project assignments, such as a literature review with simulation studies to

compare multiple methods, please email and schedule an office hour appointment with the GSI.

Students with disabilities please use the DSP to register any accommodations you may need for physical, mental or learning disabilities. The Academic Accommodations Hub provides many resources relevant to accommodations and supportive measures.

Generative AI Use

Thoughtful use of generative AI is allowed. Zombie use is not. You may use generative AI to help you learn but do not use it as a substitute for your brain.

Example zombie use: uploading the assignment pdf and asking generative AI to complete the assignment. This is not allowed.

Examples of thoughtful use: Asking generative AI if your conclusions from a paper reading make sense, asking genAI to find related papers that take a different approach. Asking genAI to review your code and suggest improvements. Asking genAI to explain concepts.

Academic Integrity

Code of Student Conduct is available at https://conduct.berkeley.edu/code-of-conduct/

Wellness

Your mental and physical wellness is important. I encourage you to make mental wellbeing a priority. If wellness feels challenging during the demands of the semester, please don't hesitate to reach out. The university has resources for ensuring basic needs. If you are in a crisis, call a counselor at (510) 642-9494 (Monday – Friday, 8:00AM – 5:00 PM) or (855) 817-5667 (other hours). UHS offers many resources for maintaining mental health. You may find wellness resources on recalibrate. I am also available to chat, listen and share my own wellbeing journey and practices.

Devices in class

No laptops, tablets, or phones allowed in class (first lecture excluded).

Sample course topics

- The Applied Research Process
- Associations and Predictions
- Randomized experiments
- Observational studies
- Nonparametric Regression
- Bias and discrimination audits
- Multiple testing
- Reproducibility
- Empirical Bayes