MATH 170E - Introduction to Probability and Statistics 1: Probability

Winter 2026

Instructor: Pablo López Rivera (plopez@math.ucla.edu)
Time and place: MWF 9:00-9:50 a.m.; Public Affairs Building 1234.
Course website: https://bruinlearn.ucla.edu/courses/223268
How to reach me: Contact me after lectures, during office hours, or via email.
Office hours: (Tentative) Monday, 10:30-11:30 a.m. (Room: MS 6903.)
Teaching Assistant: Khunpob Sereesuchart (ksereesu@math.ucla.edu)

Overview

Lecture, three hours; discussion, one hour. Requisites: courses 31A, 31B. Not open to students with credit for course 170A, Electrical and Computer Engineering 131A, or Statistics 100A. Introduction to probability theory with emphasis on topics relevant to applications.

Important Note: You will not be prevented from enrolling in this class, even if you do not meet the prerequisites. It is your responsibility to verify that you are allowed to enroll in this class.

This course aims to provide an introduction to probability theory, which is the field within mathematics that is concerned with randomness and uncertainty, providing a rigorous framework to study these phenomena.

The course will be divided into five big topics: the definition of a probability and its essential properties; discrete probability distributions (Bernoulli, binomial, Poisson, etc.); continuous probability distributions (exponential, normal, Gamma, etc.); bivariate probability distributions; and deviation inequalities and limit theorems (law of large numbers and central limit theorem). More or less, we will follow the course description that can be found on the UCLA website:

`https://ww3.math.ucla.edu/courses/`

I will post lecture notes as I complete them throughout the semester. These will be available in the "Teaching" section of my website:

`https://www.math.ucla.edu/~plopez/teaching.html`

They will be partially inspired by the textbook *Probability and Statistical Inference*, by Hogg, Tanis, Zimmerman (10th Edition). However, we remark that some notations may change and that we may cover additional topics.

Grades

Math 170E is taught in parallel lectures. Grade boundaries will be determined at the end of the quarter through consultation between all Math 170E instructors. This process will ensure that students demonstrating equal levels of mastery will receive equal grades, independent of which lecture they are enrolled in.

Your grade will be the better of the following two schemes:

- **Scheme 1:** Midterm 1: 30%, Midterm 2: 30%, Final exam: 40%.
- **Scheme 2:** Best midterm: 30%, Final exam: 70%.

Homework: Homework sets will be assigned each week and posted on the Bruin Learn course website. Homework will not be graded, but solving it is the most efficient way to prepare for the midterms and the final exam. They will mainly consist of problems from the textbook mentioned above.

Midterms and final exam: There will be two midterms and a final exam. The dates for the midterms are below. While these dates are tentative, they are very unlikely to change. I cannot give make-ups for missed midterms, but if you must miss one midterm, your grade will be computed using the second grading scheme above. The date of the final exam, listed below, was set months in advance by the university and cannot be changed. In accordance with university policies, you must take the final exam in order to pass the class.

- Midterm 1: Friday, January 30, 9:00-9:45 a.m.
- Midterm 2: Friday, February 20, 9:00-9:45 a.m
- Final Exam: Thursday, March 19, 3:00-6:00 p.m.

For the first and second midterms, you are allowed to bring one handwritten cheat sheet, A4 or letter size, and you are allowed to write on one side of it. For the final exam, you are allowed to bring one handwritten cheat-sheet, A4 or letter size, and you are allowed to write on both sides of it.

CAE accommodations

If you are already registered with the Center for Accessible Education (CAE), please request your Letter of Accommodation in the Student Portal. If you are seeking registration with the CAE, please submit your request for accommodations via the CAE website. Students with disabilities requiring academic accommodations should submit their request for accommodations as soon as possible, as it may take up to two weeks to review the request. For more information, please visit the CAE website (www.cae.ucla.edu), visit the CAE at A255 Murphy Hall, or contact them by phone at (310) 825-1501.

Please note that CAE and the instructor can support only reasonable accommodations. In particular, remote proctoring by either CAE or the instructor will not be supported for any exam or quiz administered in this class.