



# Math 407, Probability Theory, Fall 2023

**Instructor:** Jianfeng Zhang, KAP 248E, (213)740-9805, [jianfenz@usc.edu](mailto:jianfenz@usc.edu), [dornsife.usc.edu/jianfeng-zhang/](https://dornsife.usc.edu/jianfeng-zhang/)

**Teaching Assistant:** Farhad De Sousa <[fdesousa@usc.edu](mailto:fdesousa@usc.edu)>

**Time and location:**

Lecture (39621D): MWF 12:00-12:50pm, SOSB44  
Discussion(39622R): TTh 10:00-10:50am, DMC105  
Discussion(39623R) : TTh 11:00-11:50am, DMC109

**Office hours:**

Instructor (Jianfeng Zhang): M: 9:30-11:00am, W: 2:00-3:30pm or by appointment, KAP 248E  
TA (Farhad De Sousa ): TBA

You may also get help from [\*Math Center\*](#) (KAP 263).

**Required Textbook:** *A First Course in Probability (10th edition)*, by Sheldon Ross

**Prerequisite:** MATH 226 or MATH 227

**Exam dates:**

Midterm Exam 1 (in class): Friday, Sept. 22  
Midterm Exam 2 (in class): Friday, Oct. 27  
Final Exam: Friday, December 8, 11:00am-1:00 pm

**Course Description:** This course aims to introduce the basic concepts of probability theory, including: set up of probability space, conditional probability and independence, various discrete and continuous random variables, properties of expectation, law of large numbers, and the central limit theorem (CLT). We will cover the first eight chapters of the textbook. If time allows, we may also cover some selected topics in Chapters 9 and 10.

Tentative list of sections, with order:

2.1–2.5, 1.2–1.5, 2.5(continuation), 3.2–3.5, 4.1–4.9, 5.1–5.6, 6.1–6.3, 7.2, 7.4, 7.7, 6.4, 6.5, 7.5, 7.6, 5.7, 6.7, 8.2–8.4

**Grading Policies:** 25% of the grade will be based homework assignments and quizzes, 40% on two midterm exams (20% each), and 35% on the final exam.

**Homework:** Homework will be assigned weekly in lecture (typically on Fridays) and collected in discussion class (typically on Thursdays). It is important to have enough practice. You are allowed and even encouraged to discuss the problems with others (including your classmates, the TA, and the instructor), but each one should write down your final solutions independently.

**Quizzes:** Quizzes will be given in discussion class weekly (typically on Thursdays), except in the first week, the two midterm exam weeks, and the last week. The quizzes are close book, close notes, and non-cooperative. Calculator is allowed.

**Exams:** All exams are close book, close notes, and non-cooperative. You are allowed to bring one cheat sheet (A4 paper, ok for writing in both sides). The Midterm Exam 2 will cover only the materials after the Midterm Exam 1. The final exam will be comprehensive, with an emphasis on the materials covered after Midterm Exam 2. Calculator is allowed.

**Missed Assignments/Exams:** The lowest two homework scores and the lowest quiz score will be dropped automatically. Other than that no make up homework or quizzes will be allowed. There will be NO makeup Midterm Exams. If you miss a Midterm Exam and/or homeworks/quizzes with VALID reason, please talk to me as early as possible, and I may excuse you by rescaling your other exams/assignments.

You must take the Final Exam in order to get the grade. If you cannot take it at the regular time (with a VALID reason), please talk to me as early as possible and I'll arrange a make up exam.

**Feedback and Questions:** It is very useful to get feedback and questions, both inside and outside class. You are very welcome to visit me during my office hours. You can also make appointments to see me (in person or in zoom) at other time.

**Academic Integrity:** The University of Southern California is foremost a learning community committed to fostering successful scholars and researchers dedicated to the pursuit of knowledge and the transmission of ideas. Academic misconduct is in contrast to the university's mission to educate students through a broad array of first-rank academic, professional, and extracurricular programs and includes any act of dishonesty in the submission of academic work (either in draft or final form).

This course will follow the expectations for academic integrity as stated in the [USC Student Handbook](#). All students are expected to submit assignments that are original work and prepared specifically for the course/section in this academic term. You may not submit work written by others or “recycle” work prepared for other courses without obtaining written permission from the instructor(s). Students suspected of engaging in academic misconduct will be reported to the Office of Academic Integrity.

Other violations of academic misconduct include, but are not limited to, cheating, plagiarism, fabrication (e.g., falsifying data), knowingly assisting others in acts of academic dishonesty, and any act that gains or is intended to gain an unfair academic advantage.

The impact of academic dishonesty is far-reaching and is considered a serious offense against the university and could result in outcomes such as failure on the assignment, failure in the course, suspension, or even expulsion from the university.

For more information about academic integrity see the [student handbook](#) or the [Office of Academic Integrity's website](#), and university policies on [Research and Scholarship Misconduct](#).

**Students and Disability Accommodations:** USC welcomes students with disabilities into all of the University's educational programs. [The Office of Student Accessibility Services](#)(OSAS) is responsible for the determination of appropriate accommodations for students who encounter disability-related barriers. Once a student has completed the OSAS process (registration, initial appointment, and submitted documentation) and accommodations are determined to be reasonable and appropriate, a Letter of Accommodation (LOA) will be available to generate for each course. The LOA must be given to each course instructor by the student and followed up with a discussion. This should be done as early in the semester as possible as accommodations are not retroactive. More information can be found at [osas.usc.edu](#). You may contact OSAS at (213) 740-0776 or via email at [osasfrontdesk@usc.edu](mailto:osasfrontdesk@usc.edu).