

Math 280A, Probability Theory, Fall 2023

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Course Web Page: <http://www.math.ucsd.edu/~jschwein/280A.html>

Overview: Math 280A is the first course in a year-long graduate level probability sequence. The primary goals are to develop the foundations of probability theory and to prove the Strong Law of Large Numbers. Measure theory provides the mathematical framework for modern probability theory. Because we will develop measure theory as we go, prior knowledge of measure theory is not required. However, students are expected to be proficient with undergraduate real analysis and experienced in writing proofs.

Textbooks: The course textbook is the 5th edition of *Probability: Theory and Examples* by Rick Durrett. This book contains enough material to last for most of the Math 280ABC sequence and is highly recommended for students who plan to continue to Math 280B. However, students who have not seen measure theory before may find the first chapter to be a bit terse. The book *A Probability Path* by S. Resnick gives a more careful treatment of the material covered in the first half of Math 280A. Links to electronic versions of these two books are available on the course web page.

Podcasting: Podcasts of the lectures will be available to students enrolled in the class. However, the quality of the podcasts can not be guaranteed. This is not intended to be a hybrid class, and viewing the podcasts should not be considered a substitute for attending lectures.

Homework: Homework will be due weekly. You must submit homework in Gradescope before midnight on the due date. Homework completed after the deadline will not be accepted. Homework will count for 70 percent of your course grade.

Final Exam: The final exam will be a take-home exam. It will become available on Friday, December 8, and it will be due at midnight on Friday, December 15. The exam will count for 30 percent of your course grade.

Academic integrity: It is essential that all students adhere to the university's policy on integrity of scholarship. You must work completely alone on the take-home final exam. The following rules apply to homework:

- You may consult the instructor, the TA, or other students while working on homework, but you must acknowledge this help by making a note on your homework. Also, you must write your final solutions independently, and you may not copy or paraphrase homework solutions from other students or look at another student's final solution.
- You may look up general course topics on the internet, but you may not look online for solutions to specific homework problems. In particular, you may not use websites such as Chegg or StackExchange which answer questions about homework problems, and you may not use ChatGPT or any other artificial intelligence tool for help on homework problems.
- Discussing homework problems in any way over Discord or any other social media site or online message board, before the homework is due, is prohibited.