
Lectures: Mondays, Wednesdays, and Fridays, 4:00-4:50 PM, in Center Hall, Room 113
Instructor: Jason Schweinsberg (jschwein@math.ucsd.edu)
Office: 6157 Applied Physics and Mathematics (534-6949)
Office Hours: 1:30-2:30 PM on Mondays and Wednesdays, 3:30-5:00 PM on Thursdays, other times by appointment
TAs Yunxiao Liu (yul208@ucsd.edu), 7:00 PM and 8:00 PM sections Ruibo Ma (rum002@ucsd.edu), 6:00 PM section
Prerequisites: Math 20D, Math 20F or Math 31AH, and Math 180A

Overview of the course: Stochastic processes are used to model systems that evolve over time in some way that involves randomness. Stochastic processes have become important in fields such as Biology, Engineering, and Economics. This course, together with Math 180C, provides an introduction to stochastic processes for students who have taken a course in probability theory. We will spend approximately three weeks on conditional distributions, five weeks on Markov chains, and two weeks on Poisson processes.

Textbook: No textbook for the course is strictly required. However, most students will find it helpful to have an additional reference to consult besides their lecture notes. Two good references are An Introduction to Stochastic Modeling by Mark Pinsky and Samuel Karlin and Introduction to Probability Models by Sheldon Ross. These books are on reserve in the library. Another option is Essentials of Stochastic Processes by Rick Durrett, which is written at a slightly more advanced level but is available online through the UCSD library web site.

Exams: There will be two midterm exams and a final exam. The midterm exams will be held in class on Monday, February 3, and Monday, March 3. The final exam will be held at 3:00 PM on Friday, March 21.

Homework: Homework assignments will consist of Group A problems, on which some consultation with other students is permitted, and up to two Group B problems, on which students must work completely independently. Group B problems will test your understanding of material covered on previous assignments. There will be 10 homework assignments, one due at the beginning of class each Friday. If you are unable to hand in your homework during class, you may put it in the drop box in the basement of Applied Physics and Mathematics before 3:30 PM on the due date. Each week, five of the homework problems, including all Group B problems, will be graded. You should write your homework solutions neatly and carefully and provide full justification for your answers. Answers alone are insufficient and will receive zero credit.

Grading: Homework will count for 35 percent of the final grade. Each midterm will count for 15 percent, and the final exam will count for 35 percent. All ten homework scores will count towards your homework grade; no homework scores will be dropped. Consequently, any missed assignments will most likely have a negative impact on your final course grade. Your letter grade for the course will be based on your performance relative to other students in the class.

Sections: Sections will be held on Tuesday evenings. Sections will give you a good opportunity to discuss problem-solving strategies with the TA, and students should attend their assigned section. Because it is important for students to work on homework problems independently, please do not expect the TA to discuss homework problems during sections.
Office Hours: The instructor and TAs will hold regular office hours. You are encouraged to attend office hours if you have questions about the course material. Please come with your questions prepared in advance. You may ask questions about homework problems during office hours, in which case the instructor or TA will try to determine the source of your difficulties and guide you on the right path. However, because the purpose of homework is to provide you with practice at solving problems yourself, please do not expect the instructor or TA to provide answers or solutions to homework problems during office hours.

Lateness policy: Late homework will not be accepted. Other accommodations will be made only under unusual circumstances that are beyond the student’s control, such as serious illness or the death of a family member. Likewise, make-up exams will be given without penalty only under unusual circumstances that are beyond the student’s control. Please understand that accepting late work in less extreme cases is unfair to other students.

Time commitment: According to the policy of the Academic Senate of the University of California (see http://www.universityofcalifornia.edu/senate/manual/rpart3.html), “The value of a course in units shall be reckoned at the rate of one unit for three hours’ work per week per term on the part of a student.” Math 180B is a four-credit course, so you should expect to spend about 12 hours per week on the course.

Academic integrity: It is essential that all students adhere to the UCSD Policy on Integrity of Scholarship. Cases of academic dishonesty will be reported to the Academic Integrity Coordinator, and students found to be responsible for a policy violation will be subject to academic and administrative sanctions. Students are expected to obey the following rules:

- **Exams:** You will be allowed to use a calculator and one 8 1/2 × 11 page of notes, but no other resources. All devices that can be used for communication or internet access must be put away and out of view during the exam.

- **Group A Homework Problems:** You may consult with other students in the class, the instructor, or the TA while working on these problems. However, the following rules apply:
  - You must write your final homework solutions independently. You may not show another student your full solution to a problem, or use another student’s solution as the basis for your own.
  - You must not consult anyone other than the instructor, TA, or other students in the class. For example, you may not discuss homework problems with tutors in the Calculus Lab or students who completed Math 180B in previous years. Also, you may not make use of web sites that help students with homework problems.
  - If you consult any written sources other than your class notes and the textbooks by Ross and Durrett, or if you discuss homework problems with other students in the class, then you must acknowledge this help on your homework and indicate on which problems you received help.

- **Group B Homework Problems:** You must work completely independently on these problems, just as you would on an exam. You may not consult any other people, and the instructor and TAs will not provide hints.

- **Course Materials:** Some Math 180B exams used in 2012 will be provided in Ted. However, you are not permitted to acquire other materials, such as homework solutions, from previous Math 180B courses. Also, you may not provide homework solutions or other materials from this course to future Math 180B students.