

MATH180C Introduction to Stochastic Processes II, Fall 2019

Instructor: Tianyi Zheng (tzheng2@math.ucsd.edu)
Course Website: <http://www.math.ucsd.edu/~tiz161/180c.html>

Overview of the course: This course is a continuation of the introduction to stochastic processes begun in Math 180B. We study of Markov chains in continuous time and renewal processes. These topics generalize the notion of Poisson process in two different ways. We will cover some fundamentals of queueing theory as an application. The last part of the course will be devoted to an introduction to the Brownian motion, one of the two building blocks of the subject of stochastic processes (along with the Poisson Process).

Prerequisites: The prerequisite for the course is MATH 180A and MATH 180B.

Recommended Textbook: *An Introduction to Stochastic Modeling, 4th Edition*, by M. Pinsky and S. Karlin, Academic Press, ISBN: 978-0-12-381416-6

Exams: There will be two midterm exams and a final exam. The midterm exams will be held in class on Friday Oct 25, and Friday, Nov 22. The final exam will be at 3:00PM-5:59PM on Friday, December 13. Please bring your student ID to the exams.

Homework: Homework will be due each week on Wednesdays. The first homework is due Wednesday Oct 9. You will submit your Math 180C homework using a program called Gradescope, see more instructions on the course website.

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. Homework solutions will become available in TritonEd shortly after the assignment is due.

Grading: Homework will count for 20 percent of the final grade. The lowest homework score will be dropped. Each midterm will count for 20 percent, and the final exam will count for 40 percent; alternatively you may drop one lower midterm and the final exam will count for 60 percent.

Regrade Requests: If you wish to request that a homework assignment to be regraded, you must submit a regrade request on Gradescope. Please understand that while we will correct errors in the grading, we will not modify the grading rubric or negotiate over partial credit after grades are released on Gradescope.

Lateness policy: NO late homework will be accepted. No make-up midterm exams will be given.

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. 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.

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 180C is a four-unit 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 one $8\frac{1}{2} \times 11$ page of notes on exams, and you may write 2 on both sides of the page if you wish. You are also allowed to use a calculator, but you may not share a calculator with other students during the exam. All devices that could be used for communication or internet access, such as cell phones, must be put away and out of view during the exam. You must stop working immediately when time is called, and refrain from speaking with other students until your exams are turned in.
- **Homework Assignments:** You may consult with other students in the class, the instructor, or the TA while working on these problems. However, the following rules apply: 1. You must write your final homework solutions independently. You may not show another student your solution to a problem, or use another student’s solution as the basis for your own. You may not copy or paraphrase the work of another student. 2. 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 180C in previous years. Also, you may not make use of web sites that help students with homework problems. 3. If you consult any written sources other than your class notes and the textbook, 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.