MATH180A Introduction to Probability, Fall 2018

Instructor: Tianyi Zheng (tzheng2@math.ucsd.edu)
Course Webpage: http://www.math.ucsd.edu/~tiz161/180a.html

Overview of the course: Probability theory is the mathematical theory of randomness. While much of the theory has been motivated by simple applications such as coin tossing and gambling, probability is now a mature branch of mathematics with a wide variety of applications in the physical, biological, and social sciences. This course provides an introduction to probability theory for students who have taken calculus. It provides good preparation for the study of stochastic processes in Math 180B and 180C and for upper-division courses in Statistics such as Math 181A, 181B, 185, and 189.

Prerequisites: The prerequisite for the course is multivariable calculus at the level of Math 20C or Math 31BH. Prior or concurrent enrollment in Math 109 is strongly recommended.

Textbook: The recommended textbook for the course is *Introduction to Probability* by Anderson, Seppäläinen and Valkó.

A First Course in Probability by Sheldon Ross, 9th edition is recommended as supplementary reading material.

Exams: There will be two midterm exams and a final exam. The midterm exams will be held in class on Wednesday Oct 24, and Monda November 19. The final exam will be at 3PM-6PM on Friday December 14 if you are enrolled in the 3pm lecture; 3PM-6PM Tuesday December 11 if you are enrolled in the 4pm lecture. Please bring your student ID to the exams. Please bring your student ID to the exams.

Homework: Homework will be due each week on Thursdays. The first homework is due Thursday October 11. Please place homework in your TA's box in the basement of the Applied Physics and Mathematics building before 6PM on the due date. 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 notify the TA from whom you collected the graded work before leaving the room. Please understand that while we will correct errors in the grading, we will not modify the grading rubric or negotiate over partial credit after graded papers are returned to students.

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, time and locations are posted on the course webpage. 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 180A 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.