Math 181A   Introduction to Mathematical Statistics I

Lectures: We will not hold live lectures in the regular class time, but use pre-recorded lecture videos. Lecture notes and pre-recorded lecture videos will be posted every Sunday. Office hour is not mandatory if you can learn the materials well with the provided slides and videos.

You can always contact the professor and TAs by email for any questions if you happen to miss all the online office hours via Zoom provided below. Please do not hesitate to let the professor know if you have any questions or concerns regarding this class. If possible, please include your section number (A01-A04, B01-B04) in your email. All the time slots indicated below are Pacific Time.

Instructor: Danna Zhang (daz076@uscd.edu)

> **Zoom ID:** 688-901-3060 or the link https://ucsd.zoom.us/j/6889013060
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> Online office hours on Zoom: Mondays 6:00 - 8:00pm, Wednesdays 1:00 - 3:00pm

Discussion sessions: Live discussion sessions via Zoom will only be held in Week 1 and Week 5. The one in Week 1 is for the instruction of R basics and the one in Week 5 is for some free help with the midterm. For the other 8 weeks, pre-recorded videos of the discussion session will be posted on Monday and the regular time for the discussion session will be part of TAs' office hours.

TAs: **Zian Wang** (ziw105@ucsd.edu): **A01, A04**

Zoom ID: 958-799-3086 or the link https://ucsd.zoom.us/j/9587993086

Online office hours on Zoom: Tuesdays 5:00 - 7:00pm, Friday 12:00 - 2:00pm

Jason Lin (jasonlin@ucsd.edu): **A02, A03**

Zoom ID: 926-6153-4536 or the link https://ucsd.zoom.us/j/92661534536

Online office hours on Zoom: Tuesdays 6:00 - 8:00pm, Thursday 6:00 - 8:00pm

Yanyi Wang (yaw019@ucsd.edu): **B01, B02**

Zoom ID: 968-5660-7273 or the link https://ucsd.zoom.us/j/96856607273

Online office hours on Zoom: Tuesdays 11:00am - 1:00pm, Wednesday 6:00 - 8:00pm

Linbo Liu (l7liu@ucsd.edu): **B03, B04**

Zoom ID: 427-836-8001 or the link https://ucsd.zoom.us/j/4278368001

Online office hours on Zoom: Tuesdays 1:00 - 3:00pm, Thursday 1:00 - 3:00 pm

Prerequisites: MATH 180A, not any other statistics or probability oriented courses like ECON 120A, Math 183, ECE 109. Students without taking MATH 180A generally will NOT obtain this instructor's consent to enroll in the course.

Textbook: "An Introduction to Mathematical Statistics and Its Applications" (6th edition) by Larsen and Marx. The textbook will be followed pretty closely. Since the homework problems mainly come from the textbook, it is very important that you have the right edition (the 5th edition has some mismatch on the problem numbers). Another good reference (not necessarily required) is "Mathematical Statistics and Data Analysis" by Rice.

Overview of the course: It is intended to be taken as a sequence with MATH 181B. Applied Math and Prob/Stat majors will be required to either take both or take another stand-alone course. These courses serve as good preparation for MATH 185 which focuses on the more applied and computational aspects of statistics. The core materials of this course are chapters 5, 6, 7 in the textbook. Materials in Chapter 3 that was not covered in MATH 180A, will be covered as needed. **Statistical programming language and environment R** will be taught in some discussion sessions, and there will be a little bit R practice in homework (but not required in exams).

Homework:
- **Posting:** Canvas $\longrightarrow$ Assignments (or Canvas $\longrightarrow$ Files $\longrightarrow$ Homework)
- **Due time:** Due time will be indicated clearly in each homework and where it is posted. Weekly homework is due on Fridays (Midnight, Pacific Time). No homework is due on Week 5 (our midterm week); see the calendar of the course for the due dates.
- **Submission:** Please submit your homework onto Gradescope, not via Canvas. You do not have to type the solutions. Just make sure your (hand or Apple pencil) writing and the submitted version is clear enough. Please provide full justification for your answers. Final answers alone are insufficient and will receive zero credit. For R simulation problems, summarize the relevant results in the "main solution" part and append your R codes.
- **Solution:** Solutions will become available in Canvas after the assignment is due.
- **Help:** You are strongly encouraged to first attempt the homework assignments on your own. After that, you may consult the TAs or the professor. However, the professor and TAs will only help you understand what the question is asking and how to approach the problem, but will not help you check the correctness of your solutions step by step. You must produce your final solutions independently. You must NOT copy solutions from another student or from any other sources.
- **Late homework:** Late homework will not be accepted. Even if you are still on the waitlist, you should submit the homework in the first few weeks on time before official enrollment.
- **Back up:** Please keep a copy of your homework solutions each time in case your online submission is not successful, the submitted version is not clear or the grade is missing.

Exams: There will be one midterm exam (1.5 hours) and one final exam (3 hours). The way of exam proctoring is to be determined later.

- The midterm takes place on Feb 4 (Thursday of Week 5) for both sections.
- For Section A (A01-A04), the final is on March 19. For Section B (B01-B04), the final is on March 17. We will have different versions of exams (with similar difficulty) for Section A and Section B. To keep the consistency and fairness of the class, we will not allow a late exam. For example, if you are enrolled in Section B, you can neither take the exam later than March 17 nor take the exam for Section A. Since all the other course materials are the same, please make up your mind which final exam date works better for you and decide the right section for your enrollment at the start of the quarter.
- We are planning to provide a relatively long window on the exam date to accommodate different time zones so that you can start the exam any time at your convenience.
- Each exam is closed-book. You can only refer to one letter-sized sheet of notes (one-sided for the midterm and two-sided for the final), but no access to any other online/offline resources. Each exam will be published on Gradescope and your solutions should be submitted onto Gradescope for grading and regrading.
- Make-up exam will not be given if you missed the exam on the scheduled exam date.

Grading: 25%*Homework + 25%*Midterm + 50%*Final. One lowest homework will be dropped.

Regrade Requests: You can always ask for regrading on Gradescope for each homework and exam. The deadline for submitting a homework regrading request is one week after the due time of that homework. The deadline for submitting the midterm regrading request is two weeks after the midterm date. For the final exam regrading, since the TAs have limited grading time, to discourage unnecessary regrading requests, we have the policy:

- For each problem, you can only ask for regrading at most once.
- TAs have the final right of interpretation by making the final grading consistent to the class. The professor may not interfere with the deduction rules if your answer is not fully correct.

Academic integrity: It is essential that all students adhere to the UCSD Policy on Integrity of Scholarship. **Any 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. You are strongly encouraged to report any dishonesty you observe. Any information of the reporters will be kept strictly confidential, so no harm will be caused to the reporters. Please take careful reading of the complete UCSD Policy on Integrity of Scholarship at: http://senate.ucsd.edu/Operating-Procedures/Senate-Manual/Appendices/2.

Fortune cookie comments by the professor: A slightly higher letter grade for one college course obtained with cheating cannot change your career path and life. Hard work and a clear conscience will never let you fail in life.