STATS 100A

Introduction to Probability

MW 9:30 – 10:45 AM, Royce Hall 362

Instructor: Xiaowu Dai
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Office Hours: M 3:30 – 4:30 PM

Teaching Assistant: Jiale Han
TA Email: jialehan@g.ucla.edu
TA Office Hours: F 10:00-11:00 AM at Zoom.
TA Zoom: https://ucla.zoom.us/my/jialehan

Dis 1A: 11 – 11:50am, Tues, Physics and Astronomy Building 1749
Dis 1B: 12 – 12:50pm, Tues, Physics and Astronomy Building 1749

*This syllabus is subject to change. Changes, if any, will be announced in class.

Course Description:

This course gives an introduction to probability theory and its applications in science and engineering.

Requirement:

- Undergraduate calculus and linear algebra.

Credit Hours: 4

Textbooks

- Lecture slides and videos will be uploaded.
- Ross, S.M., 2020. *A First Course in Probability*. Pearson. (Optional)

Course Topics:

1. Basic concepts and axioms.
2. Random variable, probability distribution, expectation and variance
3. Joint distribution, covariance, correlation and regression
4. Conditional distribution, conditional expectation and variance
5. Law of large number, central limit theorem
6. Markov chain, Markov jump process, diffusion

Course Grades:

There will be lecture notes scribing, lecture attendance, biweekly homeworks, and a final exam.

1. **Class Attendance (5%)**. You are expected to attend lectures and, more importantly, actively participate in class discussions with questions.

2. **Homework (60%)**. Homework (total 4 times) will be assigned every other week on Gradescope (which can be accessed via Bruinlearn) and due in two weeks on Gradescope. Using Latex or R Markdown to write your homework. For problems that require coding, please submit your original codes. Late homework will not be accepted. You are expected to complete each homework independently.

3. **Final (35%)**. Late exams will not be accepted. Make-up final will not be given. You are expected to finish the final exam by strictly following the academic integrity.

Course Policies:

Please remember to turn off cell phones. You are expected to adhere to the honor code and code of conduct. If you have a disability that will require academic accommodation, please contact the UCLA Office for Students with Disabilities (OSD).

Academic Integrity:

As a student and member of the University community, you are here to get an education and are, therefore, expected to demonstrate integrity in your academic endeavors. All students must uphold University of California Standards of Student Conduct as administered by the Office of the Dean of Students. Students are subject to disciplinary action for several types of misconduct, including but not limited to: cheating, multiple submissions, plagiarism, prohibited collaboration, facilitating academic dishonesty, or knowingly furnishing false information. For more information about academic integrity, please go to http://www.deanofstudents.ucla.edu/.

Communication:

Please keep a current e-mail address with my.UCLA.edu in order to receive class announcements and reminders.