MATH 3160 - Probability - Spring 2026

Syllabus

- **Instructor:** Sean Li, sean.li@uconn.edu.
- **Office hours:** T 12:30-1:30 (MONT 334).
- **Course grades:** Quizzes, 25% total; 3 Exams, 25% each. **There will be no final exam.**
- **Topics to be covered (and approx. timing):** Combinatorial analysis (1 week); Kolmogorov's axioms of probability and combinatorial probability (1.5 week); conditional probability, including Bayes' formula (2 weeks); discrete random variables (2.5 weeks); continuous random variables (2 weeks); joint distributions, independence, sums of independent random variables, order statistics, and transformations (2 weeks); conditional distribution, conditional expectation, covariance, and correlation (1.5 week); limit theorems (1 week).
- **Prerequisites:** Solid mastery of calculus, up to and including series, limits, partial differentiation, and multiple integration. (UConn equivalent: MATH 2110, 2130, or 2144.) Knowledge of these topics will be assumed and invoked freely (and thus *hardly* reviewed) in MATH 3160: during lectures, on assignments, and on exams. As a reminder, everyone needs to brush up on double integrals by the middle of the term. (However, vector calculus will not be used in MATH 3160.)
- **Textbook:** The class textbook will be the MATH 3160 lecture notes by Prof. Richard Bass. This is free and there are also lecture videos which you should watch (preferably before class)! As there may be many versions of the textbook, the copy I will be using will be available through the HuskyCT site.

  Another well-written probability text one can refer to *Introduction to Probability (2nd ed.)* by Charles Grinstead and J. Laurie Snell, also freely available on the web (but we will not refer to this).
- **Homework:** Homeworks will be assigned but not collected. These homeworks are to provide practice and purely for your benefit. You are *strongly* encouraged to work collectively in groups. Solutions will be provided some time *after* the following quiz.
- **Exams:** There will be three exams during the course (tentative dates: 2/19, 4/2, 4/30) and NO final exam. The exams will take place during normal class time. Please let me know if you anticipate any conflict with either exam date by the end of the 2nd week of classes. Otherwise, the dates will become official.
- **Quizzes will be given on Thursdays,** except during the 1st week and the three exam weeks. They will typically take place in the last 15 minutes of class, and cover the previous week's material. **No make-up quizzes will be given** under any circumstances, but **your lowest two quiz scores will be dropped** so you should not stress about missing a quiz. If you know you will be absent, you can request to take the quiz earlier.
- **Special accommodations:** If you are a student-athlete or a student with disabilities, please provide me with a letter from the appropriate office (the Counseling Program for Intercollegiate Athletes (CPIA), or the Center for Students with Disabilities (CSD)) concerning your special needs (*e.g.* when taking exams), so that I can make appropriate accommodations.
- **Academic integrity:** Integrity is a crucial part of the academic experience. You must observe the University's Academic Integrity Policy as found in the Student Handbook. Cheating can result in one or more of the following: a score of zero on the assignment; a grade of F in the course; expulsion from the university and/or any subsidiary programs.