



BST.401 Probability Theory

Fall, 2017
Tuesday/Thursday 9:15-10:45am
SRB 1.412

Instructors:

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Office Hours: TBD

Prerequisites: Calculus I, II (MTH 161, 162 or equivalent); multivariate calculus (MTH 164 or equivalent).

Course Description

This course is primarily designed to help a student: 1) understand the formal mathematical underpinnings of modern probability theory; 2) reasoning within an abstract system and mathematical modeling; 3) acquire further skills in proof techniques; 4) prepare for further study in disciplines requiring the use and understanding of probability theory.

Course Aims and Objectives

We will try to cover the following topics in this course (from the course description of the Department of Biostatistics and Computational Biology): 1. probability spaces; 2. random variables; 3. independence; 4. distributions; 5. expectation; 6. characteristic functions and inversion theorems; 7. convergence; 8. laws of large numbers; 9. central limit theorem.

Course Policies and Expectations

Students are expected to attend every class and finish homework and/or projects in a timely fashion. Late submissions won't be considered unless the student has an irresistible reason. Homework and/or projects for unregistered students won't be graded.

Materials and Access

Main Textbook:

Durrett, R. (2004). Probability: Theory and Examples, 3rd ed. Thompson.

Reference books:

1. Ash, R. B. and Doleans-Dade, C. A., Probability & Measure Theory, 2nd ed.
2. Chung, K.L., A Course in Probability Theory 3rd ed.
3. Billingsley, P., Probability and Measure 3rd ed.



Assignments and Grading Procedures

In general, the students are given homework assignments weekly. The graded homework will be returned to students about one week later. There will be one midterm exam and one final exam, time and location to be determined. If a student are planning to be out of town for personal or academic reason during the semester, please contact us to avoid possible conflict. Unless under extreme circumstances, we won't give "make-up" exam to students. Students' final grades are based on homework/project assignments (50%), midterm exam (20%), and final exam (30%).

Academic Integrity

Academic integrity is a core value of the University of Rochester. Students who violate the University of Rochester University Policy on Academic Honesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since academic dishonesty harms the individual, other students, and the integrity of the University, policies on academic dishonesty are strictly enforced. For further information on the University of Rochester Policy on Academic Honesty, please visit the following website:

http://www.rochester.edu/college/honesty/docs/Academic_Honesty.pdf

Accommodations for Students with Disabilities

Students needing academic adjustments or accommodations because of a documented disability must contact the Disability Resource Coordinator for the school in which they are enrolled:

<http://www.rochester.edu/eoc/DisabilityCoordinators.html>