

Stat 7201: Probability

Course Syllabus, Fall 2019

Instructor: David Sivakoff

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Office: Cockins Hall 440A

Office hours: T 8–10am and by appointment (at least 48 hours in advance).

Course time and location: MWF 10:20–11:15am in Derby Hall 048.

Course webpage: On Carmen: carmen.osu.edu

Textbook: *A Probability Path* by Sidney Resnick, Birkhäuser, 2005.

Content

This is a measure-theoretic probability course. The focus will be on developing a deep understanding of the modern mathematical theory of probability, and there will be a strong emphasis on writing clear proofs and mathematical problem solving. Specific topics include: probability spaces, random variables, expectation (integration), modes of convergence, and limit theorems (LLN, CLT). For more details, refer to the schedule posted on the Carmen webpage.

Homework and Quizzes (35%)

Homework assignments will be posted on Carmen approximately every other week, and will *not* be collected. Instead, there will be eight quizzes throughout the semester, which will be based on the previous homework assignments. Quizzes are closed book and closed notes. Quiz dates are marked on the course schedule.

Midterm and Final Exams (30% midterm, 35% final exam)

There will be one midterm exam and one final exam. Both exams are in-class and closed book. The midterm exam will be on Wednesday, October 23. The final exam will be comprehensive and is on Tuesday, December 10 at 10am to 11:45am.

Missed Work

Please notify me as soon as possible if you will miss any deadlines or exams due to illness or family emergency. Also, if you know in advance that you will miss an exam due to religious observances or a varsity sport, you must let me know as soon as possible, and at least one week before the exam. Attendance in class is required, and you are responsible for making up for the material covered in class during any absence.

Miscellany

- Learning this material, like anything else, takes time. Allow yourself this time by trying to do a little bit of reading from the textbook and a little bit of problem-solving each day, rather than waiting until a deadline is near. I will not have time to cover everything written in the book, so it is important that you read the text to fill in the gaps.
- Check your email and the course website frequently. I will use the website to post homework assignments, information about the exams, rescheduled office hours, etc.

- Other references you might like to look at:
 - *Probability: Theory and Examples* by Rick Durrett. Contains lots of great examples, and good balance of probabilistic intuition and theory, though sometimes brushes details under the rug. An up-to-date version is kept on his website: <https://services.math.duke.edu/~rtd/>
 - *Probability and Measure* by Patrick Billingsley. A very thorough treatment of graduate-level probability.
- Please feel free to approach me with any questions or concerns - my primary goal is to help you learn the material. I hope you enjoy the class!

Academic Misconduct

It is the responsibility of the Committee on Academic Misconduct to investigate or establish procedures for the investigation of all reported cases of student academic misconduct. The term “academic misconduct” includes all forms of student academic misconduct wherever committed; illustrated by, but not limited to, cases of plagiarism and dishonest practices in connection with examinations. Instructors shall report all instances of alleged academic misconduct to the committee (Faculty Rule 3335-5-487). For additional information, see the Code of Student Conduct <http://studentlife.osu.edu/csc/>.

You are encouraged to discuss the homework assignments with your classmates and both offer and receive advice. For the in-class quizzes, midterm exams and final exam, you must work completely independently. No electronic devices are permitted during any quiz or exam unless stated otherwise.

Disability Services

The University strives to make all learning experiences as accessible as possible. If you anticipate or experience academic barriers based on your disability (including mental health, chronic or temporary medical conditions), please let me know immediately so that we can privately discuss options. To establish reasonable accommodations, I may request that you register with Student Life Disability Services. After registration, make arrangements with me as soon as possible to discuss your accommodations so that they may be implemented in a timely fashion. SLDS contact information:

Email: slds@osu.edu

Phone: 614-292-3307

Web: slds.osu.edu

Office: 098 Baker Hall, 113 W. 12th Avenue.

Mental Health

As a student you may experience a range of issues that can cause barriers to learning, such as strained relationships, increased anxiety, alcohol/drug problems, feeling down, difficulty concentrating and/or lack of motivation. These mental health concerns or stressful events may lead to diminished academic performance or reduce a student's ability to participate in daily activities. The Ohio State University offers services to assist you with addressing these and other concerns you may be experiencing. If you or someone you know are suffering from any of the aforementioned conditions, you can learn more about the broad range of confidential mental health services available on campus via the Office of Student Life's Counseling and

Consultation Service (CCS) by visiting ccs.osu.edu or calling 614-292-5766. CCS is located on the 4th Floor of the Younkin Success Center and 10th Floor of Lincoln Tower. You can reach an on call counselor when CCS is closed at 614-292-5766 and 24 hour emergency help is also available through the 24/7 National Suicide Prevention Hotline at 1-800-273-TALK or at suicidepreventionlifeline.org.

Sexual misconduct

Title IX makes it clear that violence and harassment based on sex and gender are Civil Rights offenses subject to the same kinds of accountability and the same kinds of support applied to offenses against other protected categories (e.g., race). If you or someone you know has been sexually harassed or assaulted, you may find the appropriate resources at <http://titleix.osu.edu> or by contacting the Ohio State Title IX Coordinator, Kellie Brennan, at titleix@osu.edu

Diversity

The Ohio State University affirms the importance and value of diversity in the student body. Our programs and curricula reflect our multicultural society and global economy and seek to provide opportunities for students to learn more about persons who are different from them. We are committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters sensitivity, understanding, and mutual respect among each member of our community; and encourages each individual to strive to reach his or her own potential. Discrimination against any individual based upon protected status, which is defined as age, color, disability, gender identity or expression, national origin, race, religion, sex, sexual orientation, or veteran status, is prohibited.