Syllabus: MTH 463/563 Probability I

Course credits: 3.0

Meets: live via Zoom MWF 11:00 am - 11:50 am, or prerecorded.

Instructor: Yevgeniy Kovchegov
Email: kovchegy@math.oregonstate.edu
Office Hours: TW 5-6 or by appointment, via Zoom

Grading scheme: Homework 30%, Online quizzes 25%, Online tests 45%

Prerequisites: MATH 311 or instructor's approval. A minimum grade of C- is required in MTH 311

Textbooks:
(1) Charles M. Grinstead and J. Laurie Snell, *Introduction to Probability* available as a **FREE** e-book at
http://www.dartmouth.edu/~chance/teaching_aids/books_articles/probability_book/book.html
A hard copy of the textbook can be acquired at bookstores such as Amazon.

(2) Mark Huber, *Probability: Lectures and Labs* available as a **FREE** e-book at **https://www.markhuberdatascience.org/probability-textbook**
A hard copy of the textbook can be acquired at bookstores such as Amazon

Course Description: This is an introductory course in probability theory.

Course Content: axioms of probability, probability spaces and models, conditional probability, independence, Bayes' theorem, counting and elements of combinatorics, discrete and continuous random variables, probability mass functions, densities, distributions, expectation and variance, probability inequalities, the law of large numbers, and the binomial central limit theorem.

Learning goals: (i) known how to compute probability by counting; (ii) know how to use Bayes' theorem; (iii) known how to use discrete and continuous random variables for computing probabilities; (iv) know how to compute expectations and variances of discrete and continuous random variables; (v) know how to use probability inequalities (for example Markov and Chebyshev inequalities); (vi) know the law of large numbers and the binomial central limit theorem (de Moivre - Laplace theorem).

Homework: The homework assignments will need to be submitted in PDF format via Canvas and before the respective deadline. Late homework will not be accepted.

Online Quizzes: There will be five online quizzes, all on Canvas.

Online tests: There will be two online tests proctored on Canvas. One offered in the middle of the quarter, and one at the end of the course. These are online equivalents of one midterm and one final exam.

STUDENTS WITH DISABILITIES: Accommodations for students with disabilities are determined and approved by Disability Access Services (DAS). If you, as a student, believe you are eligible for accommodations but have not obtained approval please contact DAS immediately at 541-737-4098 or at http://ds.oregonstate.edu. DAS notifies students and faculty members of approved academic accommodations and coordinates implementation of those accommodations. While not required, students and faculty members are encouraged to discuss details of the implementation of individual accommodations.

ACADEMIC HONESTY AND STUDENT CONDUCT: Students are expected to be familiar with Oregon State University's Code of Student Conduct. Please review this statement at https://beav.es/codeofconduct

REACH OUT FOR SUCCESS: University students encounter setbacks from time to time. If you encounter difficulties and need assistance, it's important to reach out. Consider discussing the situation with an instructor or academic advisor. Learn about resources that assist with wellness and academic success at http://oregonstate.edu/ReachOut. If you are in immediate crisis, please contact the Crisis Text Line by texting OREGON to 741-741 or call the National Suicide Prevention Lifeline at 1-800-273-TALK (8255)