Mathematical Statistics II

Chapter 1: Probability

Jesse Wheeler

Outline

Logistics

Course Overview

- This course is the first part of a two semester introductory course on Mathematical Statistics.
- Our goal is to cover Chapters 1-10 of "Mathematical Statistics and Data Analysis", by John A. Rice (Rice, 2007).
- Topics include: Probability, Random Variables, Discrete and Continuous distributions, Order Statistics, Limit Theorems, Point and Interval Estimation, Uniformly most powerful tests, likelihood ratio tests, chi-square and F tests, and nonparameteric tests.
- Roughly speaking, 4450 and 4451 can be broken into two parts:
  - Math 4450: Probability (mathematics of randomness)
  - Math 4451: Statistics (procedures for analyzing data)

Course Logistics

- About Me
- Course Website: https://jeswheel.github.io/4451_f25/.
- Canvas: Canvas will be used to submit assignments, view grades, and for course announcements.
- Course Syllabus
- Homework grading rubric.

References and Acknowledgements

Rice JA (2007). *Mathematical statistics and data analysis*, volume 371. 3 edition. Thomson/Brooks/Cole Belmont, CA.

- Compiled on January 9, 2026 using R version 4.5.2.
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- We acknowledge students and instructors for previous versions of this course / slides.