

# Stat 561: Mathematical Statistics I

Fall 2025

Section 001 (13119), Tue/Thu 1:30–2:45

FMH 416

Professor
Dr. Bob Fountain
FMH 464M
Office Hours: Tue/Thu 12:30– 1:30
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Grading	
Exam 1	25%
Exam 2	25%
Exam 3	25%
Exam 4	25%

- ◆ Probability Theory: axiomatic foundations, calculus of probability, counting, conditional probability, random variables, distribution functions, density function, hazard rate function.
- ◆ Distributions of functions of random variables, Jacobians, expected value, moments and moment generating function.
- ◆ Discrete and continuous distributions, exponential family of distributions, location and scale families, proportional hazards.
- ◆ Joint and marginal distributions, conditional expectation and its properties, bivariate and multivariate transformations, hierarchical models and mixture distributions, covariance and correlation, multivariate distributions, probability inequalities.
- ◆ Basic concepts of random samples, sums of random variables from a random sample. Sampling distributions of t, chi-square and F statistics.
- ◆ The tentative exam dates are Tue Oct 14, Thu Oct 30, Tue Nov 18, and Thu Dec 4.

Text	
<i>Statistical Inference</i>	Casella/Berger

**Note:** Class notes and information will be available at:

<http://web.pdx.edu/~fountainr/>

## **DRC:**

PSU values diversity and inclusion; we are committed to fostering mutual respect and full participation for all students. My goal is to create a learning environment that is equitable, useable, inclusive, and welcoming. If any aspects of instruction or course design result in barriers to your inclusion or learning, please notify me. The [Disability Resource Center \(DRC\)](#) provides reasonable accommodations for students who encounter barriers in the learning environment. If you have, or think you may have, a disability that may affect your work in this class and feel you need accommodations, contact the Disability Resource Center to schedule an appointment and initiate a conversation about reasonable accommodations. If you already have accommodations, please contact me to make sure that I have received a faculty notification letter and discuss your accommodations. Students who need accommodations for tests and quizzes are expected to schedule their tests to overlap with the time the class is taking the test.

## **Title IX:**

As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. As a member of the university community, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. If you would rather share information about sexual harassment, sexual violence or discrimination to a confidential employee who does not have this reporting responsibility, you can find [a list](#) of those individuals.

## **FERPA:**

In addition to regular class meetings, we may use technology for virtual meetings and recordings in this course. Our use of such technology is governed by FERPA, the [Acceptable Use Policy](#) and PSU's [Student Code of Conduct](#). A record of all meetings and recordings is kept and stored by PSU, in accordance with the Acceptable Use Policy and FERPA. Your instructor will not share recordings of your class activities outside of course participants, which include your fellow students, TAs/GAs/Mentors, and any guest faculty or community-based learning partners that we may engage with. **You may not share recordings outside of this course.** Doing so may result in disciplinary action.