
Course Description: Modern statistical concepts and methods developed in a mathematical framework: statistical inference, decision theory, point and interval estimation, hypothesis testing, Neyman-Pearson theory, maximum likelihood, Bayesian analysis, large sample theory.

Lectures: The class meets MW from 11:00 to 12:15 in 300-300.

Professor: Joe Romano (romano@stanford.edu). My office is 142 Sequoia Hall. My office phone number is 723-6326. Office hours are scheduled for Tuesday 2:30–4 and Thursday 1:15–2:15.

Prerequisites: Statistics 116, or the equivalent (calculus and probability).


Teaching Assistants: The teaching assistants for the course, together with their office numbers (all in Sequoia Hall), phone extensions and email addresses are:

- Guillaume Horel: Room 141, 5-2223, ghorel@stanford.edu
- Yuxue Jin: Room 141, 5-2223, yuxuejin@stanford.edu
- Zehao Chen: Room 204, 5-5976, zhchen@stanford.edu
- Zongming Ma: Room 242, 5-5952, zongming@stanford.edu

Their office hours will be announced soon. Check the web page for updates.

Grading: Your grade will be determined by weekly problem sets (roughly 30 percent weight), a midterm (roughly 30 percent weight), and a final exam (roughly 40 percent weight). The final exam is on Monday, March 20 from 8:30 to 11:30 in the morning.

Rough Course Outline by Week:


Week 2. Approximations to expected values and variances, the Central Limit Theorem, Law of Large Numbers, Chapters 4-5. Applications to survey sampling (Chapter 7).


Week 4. Estimation continued, Large Sample Theory, Confidence Intervals.
Week 6. Review and Midterm.
Week 7. Goodness of Fit tests, Tests for Normality, Bootstrap, Chapters 9 and 10.
Week 8. Comparing Two Samples, Large Sample Methods, Rank Tests, Experimental Design Issues, Chapter 11.
Week 9. Analysis of Categorical Data, Contingency Tables, Chi-squared tests, Chapter 13.
Week 11. Review.

Problem Set 1: Due on January 18, Wednesday, at the beginning of class: 1.48, 2.14, 2.60, 3.34, 3.58, 4.28, 4.54.