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Course Credits
This course is 4 credits.

Lectures
Class meets three times a week for lectures, each lecture lasting 50 minutes.

Recitation
The recitation includes 1 hour of time with GTA and/or instructor (and 1 hour of outside preparation implied). The recitation will be dedicated to (1) going over additional examples to solidify the material that has been presented during lectures, (2) reviewing mathematical and statistical prerequisites to help students come in preparation for future lectures and homework assignments, and (3) working out practice problems to help develop problem solving skills. Each recitation session will also include a question-and-answer period.

Prerequisites
ST 561 [C] and ST 422/522. ST 561, ST 562, and ST 563 must be taken in order.

Textbook

Course Description and Content
The second quarter of the Theory of Statistics sequence focuses on the theory related to statistical estimation. We will cover most of the materials from Chapters 5–7 and part of Chapter 10 of the textbook.

Chapter 5 Properties of a Random Sample
Chapter 6 Principles of Data Reduction
Chapter 7 Point Estimation
Chapter 10 Asymptotic Evaluations (for Point Estimation)
Learning Outcomes

Students will be able to recognize and prove properties of a random sample, to find (minimal) sufficient, ancillary, and complete statistics, to find estimators by maximum likelihood and by the method of moments, to compare estimators by mean squared error and to use sufficiency and completeness to find optimal unbiased estimators, to recognize regular exponential families, to prove consistency and efficiency for an estimator, and to find the asymptotic distribution of an estimator.

Homework

Some exercises will be assigned on a regular basis. Unless otherwise noted, these are to be handed in and will be graded. On the homework problems, it is fine to discuss them with the instructor, the TA, and/or your classmates, but write up the solutions on your own. The exercises are an important part of the course. The homework is tentatively scheduled to be due every Friday. No late homework will be accepted except in rare situations where a student has a legitimate reason and has informed the instructor early enough for a postponed due date.

Examinations

There will be two midterm exams and one final exam. All exams are closed-book and closed-notes but you can bring a one-page (single-sided) formula sheet. No makeup exams are allowed except in rare situations where a student has a legitimate reason for missing an exam and has informed the instructor early enough for a special arrangement. The exams are tentatively scheduled as follows.

Evaluation of Student Performance

30% on the homework, 20% on each midterm exam, and 30% on the final exam. Appropriate curved grading will be used to assign letter grades depending on the performance of the whole class.

Academic Honesty

Student conduct is governed by the Student Conduct and Community Standards (http://studentlife.oregonstate.edu/code). Students are expected to be honest and ethical in their academic work. Any incident of academic dishonesty will be handled according to the Academic Regulations (AR 15) (https://catalog.oregonstate.edu/regulations/).

Statement Regarding 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.