

# BSTA 621 Statistical Inference I

Spring 2024

## Content:

This class will cover the fundamental concepts and results of statistical inference. We will focus on Chapter 6-10 of Casella and Berger. We will cover the following topics: data reduction, point estimation, hypothesis testing, interval estimation and basic concepts about asymptotics. Students are expected to be able to understand the key concepts, theorems and techniques, and use them to solve new problems.

**Prerequisites:** BSTA620

## Instructors

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## TA

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## Class Schedule:

Tue and Thur 1:45-3:15pm

BRB 252

## Testbooks:

1. *Statistical Inference*, 2<sup>nd</sup> edition, by Casella and Berger. (required).

## Grading:

Homework: 40%

Midterm: 30% (covers the first half of the semester) (in class closed book)

Final exam: 30% (covers mostly the second half of the semester, in class closed book)

Note: you are encouraged to discuss your homework among classmates, but each should write up his/her own assignments. You are not allowed to look at materials from the previous years as some materials might be recycled. Use of ChatGPT or other AI tools are prohibited.

## Tentative Schedule

Date	Topics	Chapter
Jan 18	Overview	6.1
23	Sufficiency	6.2
25	Sufficiency	6.2
30	Sufficiency	6.2
Feb 1	Likelihood	6.3
6	Equivariance	6.4
8	Finding estimators	7.1
13	Finding estimators	7.2
15	Finding estimators	7.2
20	Evaluating estimators	7.3
22	Evaluating estimators	7.3
27	no class, DBEI Research Day	
29	Evaluating estimators	7.3
Mar 5	no class, spring break	
7	no class, spring break	
12	no class or review session, ENAR	
14	Midterm exam	
19	Finding tests	8.1, 8.2
21	Finding tests	8.2
26	Evaluating tests	8.3
28	Evaluating tests	8.3
Apr 2	Finding interval estimators	9.2
4	Finding interval estimators	9.2
9	Evaluating interval estimators	9.3
11	Evaluating interval estimators	9.3
16	Asymptotic evaluations for point estimation	10.1
18	Asymptotic evaluations for point estimation	10.2
23	Asymptotic evaluations for hypothesis testing	10.3

25	Asymptotic evaluations for hypothesis testing	10.3
30	Review	
TBA	Final Exam	