ECON 83a: Statistics for Economic Analysis
Summer - 2024

Ketian Guan

Summer 2024

1 Course Description

This is the first course in probability and statistics for students in economics and business. Topics to be covered include: descriptive statistics, central tendencies, set notation, bivariate data, probability distribution functions, cumulative distribution functions, expectation, variance, normal and binomial distributions, sampling distributions, point estimation, properties of estimators, confidence intervals, hypothesis testing, and linear regression.

Course Session: Session 2 - Monday, July 8 to Friday, August 9, 2024
Class Hours: Monday/Tuesday/Thursday 8:30am-11:00am (EST)

2 Faculty

The course will be team-taught by Ketian Guan and an staff of teaching fellow.

• Ketian Guan
ketianguan@brandeis.edu
Office hours: By Appointment

Teaching fellow will run office hours, grade problems sets, and be available to answer questions. The contact for the teaching fellow for this class is:

• Chen Chen
chencc@brandeis.edu
Office hours: By Appointment

3 Prerequisites

ECON 2a or 10a. You must earn C- or higher in MATH 10a, or otherwise satisfy the calculus requirement, to enroll in this course. Learning goals and outcomes:

Upon successful completion of this course you should be able to calculate and interpret basic descriptive statistics; understand probability distributions, cumulative distributions, expected values; calculate confidence intervals and perform hypothesis testing.

4   Recommended Textbook

Anderson, David R., Dennis J. Sweeney, Thomas A. Williams, Jeffrey D. Camm, and James J. Cochran, Statistics for Business Economics (13th ed.)

Topics:

Lecture 1 - Introduction and Descriptive Statistics
Lecture 2 - Probability
Lecture 3 - Probability Distribution
Lecture 4 - Sampling and Sampling Distributions
Lecture 5 - Interval Estimation
Lecture 6 - Hypothesis Testing
Lecture 7 - Linear Regression

5   Examinations

Midterm 7/25/2024, closed book.

The final examination is currently scheduled for 8/08/2024 and will be closed book.

Exams are to be done individually, and without the aid of any AI-based online tools: non-respect of those rules will lead to a "failing grade" on this exam. An early final will NOT be given. The exam will be given during the class schedule.

6   Problem Sets

There will be regular written assignments in the course. These problem sets are required. Problem sets are practice for the examinations; students can expect that some questions on the examinations will be quite similar to those previously seen on problem sets. There will be 4 problem sets with due dates as follows:

- Problem Set 1: 7/17/2024 (11:59pm, EST)
- Problem Set 2: 7/24/2024 (11:59pm, EST)
- Problem Set 3: 7/31/2024 (11:59pm, EST)
- Problem Set 4: 8/5/2024 (11:59pm, EST)

Problem sets will be submitted and graded on Gradescope (**Entry Code:2BRJW7**). While you are encouraged to discuss the problems with others, you are expected to answer problems on your own. Resist the temptation to copy someone else's answer. More generally, you are expected to be familiar with and to follow the University's policies on academic integrity. Instances of alleged dishonesty will be forwarded to the Department of Student Rights and Community Standards for possible referral to the Student Judicial System. Potential sanctions include failure in the course and suspension from the University.

7 Presentation

The student will present their final projects. The data and instructions will be provided by the instructor. Each student has 10 minutes for the presentation, slides or papers are needed. The presentation is currently scheduled for 8/06/2024. We will consider our progress and then decide whether to proceed with the project or not. If the presentation is canceled, the day will be a study day and final exam will account for 40%.

8 Evaluation

There will be 1 midterm exam, 1 final exam and final project presentation. No make-up exams will be offered. If you are unable to take an exam for a legitimate reason, you must obtain advance authorization. There will be several problem sets, which you are required to do on your own. The final grade will be calculated as:
Problem sets — 30%
Midterm — 30%
Project Presentation —20%
Final Exam — 20%

9 LATTE

The home page for this course is available through LATTE. Announcements, Problem Sets, and additional handouts will be posted on this page. You are encouraged to check the course home page regularly.

10 Special accommodations

If you are a student with a documented disability on record at Brandeis University and wish to have a reasonable accommodation made for you in this class, please see me immediately.

11   Course Rules

• Late assignments will not be accepted. Once solutions have been posted (usually immediately after class on the due date) problem sets will no longer be accepted and a grade of zero will be given for any missing assignment.

• There will be no make up exams or problem sets. I understand that sometimes there are circumstances that may prevent you from handing in a problem set on time or attending an exam. Please contact me in advance to better resolve this potential situation.

• Attendance is mandatory and will be recorded each class. If the student is absent in 3 or more lectures, I will contact your program coordinator to inform this situation.

• If you have to miss a lecture, please be sure to get lecture notes from one of your classmates, and please don't hesitate to come to office hours if you have any questions.

• Please mute your microphone before entering the Zoom meeting.