ECON 121-10: ECONOMIC STATISTICS
Summer 2021 – First Session

Instructor Information

Bhavya Srivastava
Email: on bs1088@georgetown.edu
Office Hours: Thursday 5.30 – 6.30 pm

Class Information

Dates: June 7th – July 9th
Class Hours: 3.15 – 5.15 pm (Mon – Thu)
Classroom: TBD

Course Description

This course will introduce you to statistical analysis and probability theory. We will apply statistical methods to economic data and use probability theory to study how to economic decisions are made in an uncertain world. The course will teach you how to examine, manipulate, and present data in Excel and will introduce you to the program Stata that is used in ECON 122.

Prerequisites

This course will require some basic knowledge of mathematical concepts such as integration and derivation. High-school mathematics should be sufficient to take this course. However, that said, we will be reviewing some of these concepts as we progress through the summer session, which will allow you to catch up or learn these concepts along the way.

Course Materials

[Recommended] Ramachandran, Kandethody, and Chris Tsokos. "Mathematical Statistics with Applications in R: Second Edition." *Mathematical Statistics with Applications in R: Second Edition*, January 1, 2014, 1–800.

[Alternative Text] Vital Statistics: Probability and Statistics for Economics and Business 1st Edition, by Sandholm and Saraniti (Oxford University Press)

I encourage you to read the textbook as, in my experience, it helps to build intuition. I chose this text based on the examples it offers for introductory statistics and because Georgetown students can access it at no cost. That said, it is quite possible to do well in the course without reading the textbook as the lectures will cover each of the topics in detail.

Mode of Teaching

At this point it is unclear whether or not the summer session will be in-person. Therefore, this section will be updated closer to the starting date.

Requirements and Grading

Grades will be based on Class Participation (5%), 1 Mid-term exam (30%), 1 Excel Practical (10%), 4 Homework Assignments (15% in total), and a Final Exam (40%).

- Class Participation will involve break-out groups in the last 20 minutes of every class where each group will be asked to present answers to questions assigned. The format for this may change in case the summer session goes online.
- Exams will comprise of a random selection of the practice questions on topics covered till that point in the course.
- Homework answers can be hand-written or typed, but they must be submitted via Canvas as pdf files. Canvas will show you the due date and time for the submission of your homework. You must submit your answers before this date and time to receive any points; that is, late submissions will receive zero points. For grading purposes, the top 3 scores will be considered.
- The Excel Practical will be online. Answers must be submitted before the due date and time as pdf files (and excel files) to Canvas.

In case you find yourself unable to take an exam or practical at the scheduled time because of a medical or other reason, do not worry. If you can present a note from a Dean or doctor explaining the situation, I will excuse the exam/practical and pro-rate your course grade appropriately.

The Honor Code

Even though these are challenging times, students are required to adhere to all aspects of the Georgetown Honor Code. You may discuss homework questions with each other, but each student must submit their own answers. You may not discuss or collaborate on any question in a mid-term, excel practical, or in the final exam until AFTER the exam is over.

Letter Grades will be assigned following the Economics Department Guidelines:

- A and A- top 50% of the class
- B+ to B- next 45% of the class
- C+ and below, bottom 5% of the class

Class Materials

All the materials on this Canvas Site are for the sole use of registered students in the course. You may not copy and/or share any of the materials (e.g. recordings, practice questions, slides, etc.) with anyone else without prior written permission from me. I will treat any unauthorized dissemination of course materials as a violation of the Georgetown Honor Code.

Course Outline

The following is a tentative list of topics that this course will introduce you to. Topic 10 will be covered only if time permits.

	Topic	**Textbook Chapter**
1	Introduction	1
2	Descriptive Statistics	1
3	Probability Models	2
4	Random Variables	2
5	Probability Distributions	2,3
6	Central Limit Theorem	3
7	Statistical Inference	5
8	Estimation	5
9	Hypothesis Testing	6
10	Introduction to OLS Regression	8