

# EC122-20-INTRODUCTION TO ECONOMETRICS

Georgetown University  
Department of Economics  
Summer 2020

## Syllabus

**Instructor:** Jiadi Chen      **Email:** [jc2450@georgetown.edu](mailto:jc2450@georgetown.edu)

**Lecture:** M,T,W,Th 3:15- 5:15PM Intercultural Center 119

**Office hour:** Tuesday 5:15- 6:00PM, or by appointment

**Recitation:** Wednesday 7:00 PM - 9:00 PM Reiss 282

**Teaching assistant:** TBA

### Main References

Stock, J.H., and Watson, M.W. (2015), Introduction to Econometrics (updated 3rd ed.), Pearson.

Suggestions for further reading will be provided in class. For Stata, a good reference is: Baum, C.F. (2006), An Introduction to Modern Econometrics Using Stata, Stata Press.

Useful materials can also be found at the website of the UCLA Institute for Digital Research and Education <http://www.ats.ucla.edu/stat/stata/>.

### Objectives

This course develops the theory and applications of regression analysis, which is the primary tool for empirical work in economics. Much of the course will be devoted to derivation of econometric theory results. Applications to particular problems in the analysis of economic data will also be discussed.

### Prerequisites ECON-121 and MATH-035

The first few lectures will review the pertinent material from Economic Statistics (ECON 121). Students should be comfortable with the basic concepts of probability theory and statistical inference, and, more generally, with mathematical derivations. You may not take the prerequisites concurrently.

**Tentative Course Outline**

July 6	.....: Economic Questions and Data (SW Chapter 1 and 2)
July 7	.....: Review of Probability and Statistics (SW Chapter 3)
July 8	.....: Simple Linear Regression-Estimation (SW Chapter 4)
July 9	.....: Simple Linear Regression-Inference(SW Chapter 5)
July 13	.....: Multivariate linear regression (SW Chapter 6 and 7)
July 14	.....:Multivariate linear regression (SW Chapter 6 and 7)
July 15	.....:Nonlinear Regression (SW Chapter 8)
July 16	.....: Review
July 20	.....: <b>Midterm</b>
July 21	.....: Nonlinear Regression (SW Chapter 8)
July 22	.....: Assessing regression results (SW Chapter 9)
July 23	.....: Regression with panel data (SW Chapter 10)
July 27	.....: Regression with a binary outcome (SW Chapter 11)
July 28	.....: Instrumental variables regression (SW Chapter 12)
July 29	.....: Instrumental variables regression (SW Chapter 12)
July 30	.....: Experiments and quasi-experiments (SW Chapter 13)
August 3	.....: Experiments and quasi-experiments (SW Chapter 13)
August 4	.....: Big Data (SW Ch 15)
August 5	.....: Review
August 6	.....: <b>Final</b>

**TA Recitations**

July 8	.....:Introduction to Stata/Problem set 1
July 15	.....: Problem set 2 and 3
July 22	.....: Problem set 4
July 30	.....: Problem set 5
August 5	.....: Problem set 6

**Problem Sets (Due Dates)**

Problem Set 1	.....	July 8 Wed
Problem Set 2	.....	July 13 Mon
Problem Set 3	.....	July 15 Wed
Problem Set 4	.....	July 22 Wed
Problem Set 5	.....	July 30 Wed
Problem Set 6	.....	August 5 Wed

**Grading Policy** Homework (20%), Midterm (30%), Final (50%).

**Letter grades will approximately be assigned as follows:**

A:	75th-99th percentile
A-:	50th-74th percentile
B+:	35th-49th percentile
B:	20th-34th percentile
B-:	5th-19th percentile
C+ and below:	Below 5th percentile

**Important Dates:**

Midterm .....	July 20, Monday
Final Exam .....	August 6, Thursday

**STATA Assignments**

- Some of the homework assignments involve statistical analysis of datasets. The required software for these assignments is Stata, which is available for free to all GU students. To download Stata 16 (IC), the most recent version, go to <https://georgetown.onthehub.com/WebStore/Welcome.aspx>, click on Enter Software Webstore, choose Stats STEMS, select Stata 16, choose your platform (Windows or Mac), and download. While the use of statistical or numerical software for empirical work is very important, it is not the main focus of this course and you are expected to acquire the necessary skills through self-study of manuals or on-line tutorials.

**Course Policy**

- **Regular attendance** for both lectures and recitations is essential and expected. Recitations are very important to this course. They will consist of practice theoretical problems and Stata exercises (in a small group setting) that will be very useful to you for upcoming problem sets and exams.
- **Problems sets** are an integral part of this course and spending a significant amount of time each week working on them is essential to learning the material covered. Collaboration on homework is encouraged, but students need to hand in their own solution. There will be six problem sets in total. I will drop your problem set with the lowest score. Problem sets must be handed in by the due date. Submission procedures will be detailed on the first problem set. Late problem sets will not be graded.
- **Exams** are all closed-book exams and all you need to bring is pen or pencil and a basic calculator. **No makeup exams** will be offered (unless you are missing an exam due to a university sanctioned event that you inform about well ahead of time). If you need to miss one of the midterm exams, for example, because of a medical or family emergency, you will need to present a signed excuse from a Dean or doctor.

**Honor Code**

The Georgetown Honor Code is in force for this course: “Students found in violation of the Honor System are subject to academic sanctions that include, but are not limited to, failure of a course, suspension, dismissal and revocation of degrees conferred.” See <http://scs.georgetown.edu/academic-affairs/honor-code/>.