University of Virginia
Fall Semester 2022

ECON 3720: Introduction to Econometrics

Lecture

Tuesdays and Thursdays, 8 – 9:15 AM (Section 101)
Tuesdays and Thursdays, 9:30 – 10:45 AM (Section 100)
Monroe Hall 130

Instructor

Professor Leland E. Farmer
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Office: Monroe Hall 240

Office Hours

Tuesdays, 11 AM – 12:30 PM and by appointment

Teaching Assistants

Lingmin Bao
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Location: Monroe Hall Basement

Jose Ferrer
E-mail: whp6ku@virginia.edu
Office Hours: Mondays, 11 AM – 12PM
Location: Monroe Hall Basement

Discussion Sections

Thursdays:
- 4:00 – 4:50 PM, Mechanical Engineering Building 214 (Section 102)
- 5:00 – 5:50 PM, Mechanical Engineering Building 214 (Section 103)
- 6:00 – 6:50 PM, Mechanical Engineering Building 214 (Section 104)
- 7:00 – 7:50 PM, Mechanical Engineering Building 214 (Section 105)

Prerequisites

A very good understanding of basic statistics (such as Stat 2120 or 3120) and multivariate calculus (such as Math 1220 or 1320) will be assumed. You may not take intro statistics concurrently with Econ 3720. Economics 2010 and 2020 are also highly recommended.

<u>Introduction</u>

This course is an introduction to econometrics, which is the theory and practice of analyzing economic data. Topics include statistical theory, measurement, and applications. Theoretical discussions and problems will be connected to analysis of real data. At the end of the course successful students will be qualified to understand and conduct simple economic data analysis in the real world.

<u>Grading</u>

Homework: 25%
Midterm 1: 25%
Midterm 2: 25%
Midterm 3: 25%

<u>Required Materials</u>

Book

Introductory Econometrics: A Modern Approach, 5th edition, by Jeffrey M. Wooldridge. Copies of the 5th and 6th editions will be available in the bookstore. Check online for a copy of the 5th edition. Slightly earlier / the latest editions should also be fine, but given that problems will sometimes be assigned directly from the textbook, please ensure that your edition's problem numbers line up with the 5th edition's.

Software

Stata/BE. You can purchase a 6-month, one year, or perpetual license via this link, https://www.stata.com/order/new/edu/gradplans/student-pricing/
Another option is to access Stata/IC using Remote Apps at
https://virginia.service-now.com/its/?id=itsweb_kb_article&sys_id=f9dc08eddb1d1380f032f1f51d96192d

<u>Course Policies</u>

Homework

There will be 8 homework assignments. Each assignment must be handed in at the beginning of the lecture on the day that it is due (usually Tuesday). Homework handed in late, even one minute late, will not be graded. You may drop your lowest homework grade.

You are encouraged to work together on your homework assignments, and up to two students may hand in and receive credit together for a given assignment. If students collaborate, both students must understand and contribute to all the work handed in. Copying homework from other students, or failing to fully collaborate on joint assignments, will be regarded as an honor

violation. Allowing another student to take partial or full credit for your work is also an honor violation.

Homework will be graded by the teaching assistants and graders. Grades assigned by the TAs/graders are not subject to appeal unless an error was made (in other words, please don't argue about how many points you think you should have received on a given problem). Your work is expected to be neat and legible, and typing your answers is encouraged. If a TA/grader finds your work too sloppy and/or illegible, it will not be graded, or points will be taken off.

Exams

Exams will be a mix of multiple choice and short answer. The three midterms will take place during class and will last 75 minutes. Exams are NOT cumulative. That being said, all concepts taught in the course build on what has come before. Students will be permitted to bring one side of one page of notes for each new exam. That is, one side of one page for the first midterm, one full page (back and front) for the second midterm, and one page and one additional one side of one page for the third midterm.

There are no makeup midterm exams. If you are unable to make one of the first two midterm exams for *any* reason, the grade percentage from your midterm will be shifted to the other midterms. That is, if you miss the first midterm, the second and third midterms will be worth 37.5% of your grade each. If you miss the second midterm, your first and third midterms will be worth 37.5% of your grade each. If you miss both the first and second midterms, your third midterm will be worth 75% of your grade. You *must* attend the third midterm exam which acts in place of a traditional final exam. The lowest exam score is NOT dropped.

Lectures

Lecture notes/slides will be posted to *UVaCollab*, usually by the evening before the lecture is delivered. You are strongly encouraged to print out a copy of the slides or have them ready on your laptop before coming to class, so you can follow along and take notes on your copies of the slides.

Posted lecture notes/slides do not contain all the material which will be discussed in class, and failure to attend all lectures means that you are going to miss important material. Attendance at all lectures is required.

Honor policy

Every student in this course is trusted to fully comply with all of the provisions of the honor code. On every exam, please sign your name next to the honor pledge. On exams, it is expected that you will neither receive nor give aid, nor access any material other than a calculator and your cheat sheet.

All alleged honor violations brought to my attention will be forwarded to the Honor Committee. If, in my judgment, it is beyond a reasonable doubt that a student has committed an honor

violation on an exam or assignment, that student will receive an immediate grade of zero for that exam or assignment, regardless of any subsequent action taken by the Honor Committee.

Exam and other accommodations

All students with special needs requiring accommodations should present the appropriate paperwork from the Student Disability Access Center (SDAC) to Professor Farmer. It is the student's responsibility to present this paperwork in a timely fashion and follow up with the instructor about the accommodations being offered. Accommodations for test-taking (e.g., extended time) should be arranged at least a week before an exam.

Course Outline

The following is a tentative outline of the topics we will cover in this course and is subject to revision. Exam dates are fixed.

Week 1, August 23 and 25: What is Econometrics? (Chapter 1), Review of Probability and Statistics (Appendices B and C)

Week 2, August 30 and September 1: Review of Probability and Statistics (Appendices B and C)

Week 3, September 6 and 8: Review of Probability and Statistics (Appendices B and C), Simple Linear Regression (Chapter 2)

Week 4, September 13 and 15: Simple Linear Regression (Chapter 2)

Week 5, September 20 and 22: Simple Linear Regression (Chapter 2), Review (September 22nd)

Week 6, September 27 and 29: Midterm 1 (September 27th), Multiple Linear Regression (Chapter 3-7)

No class on October 4 (Reading Day)

Week 7, October 6: Multiple Linear Regression (Chapters 3-7)

Week 8, October 11: Multiple Linear Regression (Chapters 3-7)

No class on October 13

Week 9, October 18 and 20: Multiple Linear Regression (Chapters 3-7)

Week 10, October 25 and 27: Binary Dependent Variables and Measurement Error, Instrumental Variables Two Stage Least Squares (Chapter 15)

Week 11, November 1 and 3: Review (November 1st), Midterm 2 (November 3rd)

No class on November 8 (Election Day)

Week 12, November 10: Instrumental Variables and Two Stage Least Squares (Chapter 15)

Week 13, November 15 and 17: Instrumental Variables and Two Stage Least Squares (Chapter 15)

Week 14, November 22: Time Series Econometrics (Chapters 10 and 11)

No class on November 24 (Thanksgiving Recess)

Week 15, November 29 and December 1: Time Series Econometrics (Chapters 10 and 11), Review (December 1st)

Week 16: December 6: Midterm 3 (December 6th)