ECON 281: Introduction to Applied Econometrics

Welcome to ECON 281! This course is an introduction to applied econometrics, a field in which statistical tools and non-experimental data are utilized in the analysis of economic questions. The main purpose of this class within our economics curriculum is to introduce you to methods economists use in empirical research. The most simple and fundamental question applied econometric techniques seek to answer is: what is the effect of X on Y? How does education affect earnings? Do weather patterns in African countries affect civil conflict? Does unemployment rise when minimum wages increase? By the end of this course, you will:

1. Understand the fundamental, underlying statistics of econometric models.
2. Apply regression techniques to datasets and analyze the results to answer economic policy questions.
3. Critically evaluate the assumptions and results of econometric models in search of causal relationships.
4. Formulate economic arguments based on empirical results from real datasets by using Stata software.

Lecture and Section

Lecture: TuTh 3:30-4:50pm, Harris Hall 107
Section: 21/25: TA Joe M 3-3:50pm, Tech Institute M128 (22 enrolled)
          22/26: TA Tomas W 3-3:50pm, Tech Institute M177 (21 enrolled)
             23: TA Joe M 4-4:50pm, Tech Institute M128 (27 enrolled)
             24: TA Tomas W 4-4:50pm, Tech Institute M177 (12 enrolled)

Office Hours

Prof. Kutzman: TuTh 1-2p and Fri 9:30-10:30a in KGH 3485, Th 5-6p in Harris L04
TAs: Tomas Wilner (tomaswilner2025@u.northwestern.edu): M 10-11a KGH 3198, W 10-11a KGH 3411
       Joe Long (JoeLong2020@u.northwestern.edu): Tu 10-11a KGH 3411, W 1-2p KGH 3198

The Basics

Prerequisites   You must have taken ECON 201 & 202, MATH 220, and STAT 210 to enroll in this course.

Required class resources   Assignments in this course require you to use the statistical software, Stata. To purchase your own copy of the software for your computer, a six-month license for Stata/IC is available for $48. *One purchased license can be used to install Stata on up to 3 computers.* Do this as soon as possible!
See http://www.stata.com/order/new/edu/gradplans/student-pricing/ to purchase.

Only scientific calculators are permitted on assessments in this class. Bring it with you to class to use on quizzes. You will not be able to use a graphing calculator (or any calculator with storage). The *optional* textbook for this course is *Introductory Econometrics: A Modern Approach* by J. Wooldridge. You can use any edition, but note that lecture handouts will be provided.

Phones & computers & tablets   Except in the case of proven necessity or for the purpose of a class exercise, there will be no computers, cellphones, tablets or other mobile communication devices used during the lectures. Keep devices on silent and save the texts for our daily break!

Email   *Any email you send me should contain "ECON 281:" plus a descriptor in the subject line so that I can identify it and respond in a timely manner.* I will respond within 36 hours. Email is a good way to communicate with me about most logistical issues and some econometrics questions. *I will not guarantee answers to content questions via email sent after 7pm the day before an exam or within 3hrs of an assignment deadline.* This is mostly to (1) give me a large enough window to provide you with timely answers/feedback, but should also (2) discourage you from waiting till the last minute to start an assignment or study for a test!

Responsibilities

I will come to class prepared; respond to and encourage questions; oversee rigorous grading of assignments and exams; be available during office hours and scheduled appointments; stimulate enthusiasm for econometrics and learning; provide you with an intermediate skill set with Stata software. As a student, your responsibilities are:

1. Attend lectures and section each week, actively participating in both.
2. Complete and turn in all assignments on time.
3. Midterm: Thursday February 6, in class.
4. Final: Wednesday March 18, 7-9pm.

Assignment	Date	Percentage of Final Grade
Quizzes	Throughout quarter	6
Four Stata Projects	Throughout quarter	6 each
Midterm Exam	2/6	30
Final Exam	3/18	40

Exams   No cheat-sheets are allowed, though I encourage you to make yourself one as you study! Please check the exam dates above and confirm you can attend them. There will be no make-up exams given.

Stata Projects   Stata projects will be posted at least 2 weeks before they are due and I do not recommend putting them off to the last minute. You will submit work for the Stata assignments electronically through the Crowdmark platform. While late work is accepted, it will be penalized by a letter grade (10%) for every additional 24hr increment.[1] This will be strictly enforced. All late assignments must be turned in within *two days* (48 hours) of the deadline; no late work will be graded after solutions are posted or grades are returned. You must submit all of your work at one time. If you don't correctly format your work on Crowdmark, it may be considered late. If something goes wrong when using Crowdmark, you must get your work to Prof. Kutzman or your TA by the deadline to avoid a late penalty.

Quizzes   *Be sure to bring a calculator and all statistical tables to lecture* to potentially use on quizzes; there will be no sharing of calculators or tables and we will not provide them.

Regrades   If you believe there was a mistake in the grading of an assessment, you will need to write a statement (about half a page) explaining, staple this to the assessment, and submit it in hardcopy to me during the lecture immediately following its return so we can resolve it immediately. No changes to scores will be made without following this procedure and I will regrade the entire assessment myself. This should encourage you to pick up your work promptly and check both your answers and our grading! However, note that because the assessment will be regraded, your score may go up or down as a result of the regrade.

Academic Honesty   In fairness to students who put in an honest effort, I take plagiarism of other students' work and other forms of academic dishonesty **very seriously**, and all cases involving suspected violation of the academic integrity guidelines will be referred immediately to the dean's office of Weinberg College. Any academic integrity violation will result in a score of zero on that assignment or exam and can result in an F for the course. It is your responsibility to inform yourself of campus policies regarding academic misconduct, which can be found here: http://www.weinberg.northwestern.edu/handbook/integrity/

Do your own work. Study groups are encouraged for learning to code in Stata and to discuss general ideas related to the assignment, but all submitted answers and code should be written individually in *your own words*. This means that you should not share any computer files, or your write-up, or seek (provide) assistance from (to) other students on what you are required to do individually. *If in doubt about something, ask me. I recommend writing up your answers in a separate location from your study group*.

Accommodations   Any student requesting accommodations related to a disability or other condition is required to register with AccessibleNU (accessiblenu@northwestern.edu; 847-467-5530) and provide professors with an accommodation notification from AccessibleNU, preferably within the first two weeks of class. If you have emergency medical information you wish to share with me, or if you need special arrangements in case the building must be evacuated, inform me immediately. Please see me privately after class or during office hours. All information will remain confidential.

Topics Covered   Chapter 1: The Nature of Econometrics and Economic Data
Chapter 2: The Simple Regression Model
Chapter 3: Multiple Regression Analysis: Estimation
Chapter 4: Multiple Regression Analysis: Inference
Chapter 6: Multiple Regression Analysis: Further Issues
Chapter 7: Multiple Regression Analysis with Qualitative Information: Binary Variables
Chapter 13: Pooling Cross Sections across Time: Simple Panel Data Methods
Chapter 14: Advanced Panel Data Methods
Chapter 17: Limited Dependent Variable Models and Sample Selection Correction
Additional topics: Randomized Trial, Double Difference, Instrumental Variables, Regression Discontinuity Design

Looking forward to spending the quarter with you all!

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[1]Suppose an assignment is due Friday at 5:00p. If submitted on Friday at 5:01p, 10% of the total possible points will be deducted and if submitted on Saturday at 5:01p, 20% of the total possible points will be deducted.