Introduction to Econometrics

Economics 381, Fall 2019 TR 9:40 – 10:55am, HBB 633 (Section 1) TR 12:40 – 1:55pm, HBB 113 (Section 2)

Professor: Christian A. Vossler Department of Economics 527F Stokely Management Center Phone: 974-1699 E-mail: <u>cvossler@utk.edu</u> Office Hours: Tuesdays, 2:15-3:45pm and Wednesdays, 9:15-10:45am, or by appointment.

Course description (from Undergraduate Catalog): Introductory probability, statistics, and econometrics from an economic perspective with emphasis on skills related to gathering, managing, processing, presenting, and interpreting economic data. Includes the use of statistical software in hands-on research projects. Considers common econometric problems such as multicollinearity, heteroscedasticity, and autocorrelation.

Learning objectives: By the end of the course, you will be able to: (1) understand the basic theoretical justifications and limitations of econometric methods, and their practical applications; (2) determine appropriate econometric techniques for analyzing data, and justify your methods based on statistical tests, identification strategies, and logical arguments; (3) use Stata to manage data and undertake analyses; and (4) effectively communicate the results of applied econometrics work.

Course Website: This course utilizes the Canvas online course management system (<u>https://utk.instructure.com/</u>). Here you will find a lecture schedule, important handouts, past exams, the syllabus, and other mateirals. I will utilize the online gradebook.

Required Text: Studenmund, A.H. 2017. Using Econometrics: A Practical Guide, seventh edition. Published by Pearson, ISBN: 9780134182988. The text is provided under the Inclusive Access Program for \$62.86. The deadline to "opt out" of Inclusive Access is August 30th.

Required Software: You **must** have access to the Stata statistical software package. The primary method for accessing Stata is online, through <u>https://apps.utk.edu/</u>. Problems with accessing Stata through the server will <u>not</u> constitute a valid reason for incompletion of assignments. Otherwise, if you wish to have direct access to Stata on your computer you can purchase a student license for \$48. Details are provided on Canvas.

Evaluative criteria:

Class Participation, 10% of course grade. Participation is a requirement for this course, and the Packback Questions platform will be used for online discussion about class topics. Packback Questions is an online curiosity community where you can be fearlessly curious and ask BIG questions about how what we're studying relates to life outside of the university. In order to receive your points per week, you must post 1 question and 2 answers per week. It is <u>not</u> important that your questions/answers are specific to the material we discuss in a particular week, but they should relate to applied research and

data analysis. There will be a Sunday 11:59pm deadline for your weekly submissions. Your lowest (weekly) score will be dropped when calculating the participation grade.

Our Community Lookup Key is 49f6a0f9-e341-4a54-9b9e-92b174bac032. Your use of Packback in this course will be <u>free of charge</u>, as it is being funded by a teaching grant. More information can be found on Canvas.

Problem Sets, 20% of course grade. There will be four problem sets. The problem sets will include conceptual questions as well as involve estimation and statistical testing using Stata. Discussion with your colleagues is allowed, <u>although the final write-up and data analysis must be your own</u>. I will indeed assign scores of zero in cases where two or more students turn in (nearly) identical work.

Research Paper, 25% of course grade. A very important component of this class is the research paper, for which you will need to gather and clean a (credible) data set of your choosing to use for an empirical analysis. This will be done in groups of two. You will formulate interesting hypotheses, use appropriate econometrics to investigate these hypotheses, and then formally write up your results. My goal is for everyone to have a polished paper that they can be proud of, and speak to potential employers about. he paper will evolve in three stages. First, your group will submit a one to two-page proposal outlining the paper topic. This proposal will cite three academic papers that are relevant to your topic as well as identify data sources. Second, roughly two-thirds into the semester your group will submit a draft paper, which I will provide feedback on. Third, your group will produce a polished gem, the final paper, which is due by 11:59pm on Sunday, December 8th. The paper is submitted electronically, along with a complete Stata do-file and your data set.

Exams, 45% of course grade. There will be three exams of equal length, with each exam covering roughly one-third of the course material. The third exam will take place on the University-scheduled final exam period for this course (Section 1: December 10th at 10:15am; Section 2: December 11th at 12:30pm). Make-up exams are entirely at my discretion and are generally available only for students with UT exam conflicts or <u>written</u> medical excuses. You must make arrangements with me <u>in advance</u> of the scheduled exam, or will receive a score of zero.

Policy on late assignments: It is very difficult for me to assess the credibility of justifications made for not completing an assignment on time. As a compromise, I provide some flexibility. I will allow everyone a one-class grace period for <u>one</u> assignment. The exception to this is the final paper, which must be turned in by the due date for you to receive credit.

Grade Adjustments & Extra Credit: (a) *Exams.* There will be an opportunity for extra credit on each exam. (b) *Research Paper.* I will award extra credit on the final paper for exemplary and/or advanced work. (c) *Curve.* I reserve the right to implement a curve, if necessary, to achieve a more reasonable distribution of grades. I have only done this on a few occasions, so it is best to assume that there will <u>not</u> be a curve.

Grading Scale: I will use the following scale to assign final course grades: 92 to 100% is an A; 90 to 92% is an A-; 87 to 90% is a B+; 82 to 87% is a B; 80 to 82% is a B-; 77 to 80% is a C+; 70 to 77% is a C; 65 to 70% is a C-; 60 to 65% is a D+; 50 to 60% is a D; and less than 50% is an F.

Attendance Policy: I will not routinely take attendance, nor will your course grade be adjusted downward for poor attendance. However, this is a reasonably demanding course and it is

presumably in your best interest to attend. Further, in the case your course grade is on the margin, I reserve the right to give you the benefit of the higher grade if you actively participate in the course.

Students with Disabilities: If you have a documented disability and need special accommodations, please come see me as soon as possible. Special accommodations will be handled discreetly.

Academic Dishonesty: You are welcome to ask clarifying questions about problem sets to your classmates or me. However, with the exception of the research paper, the written and Stata work you turn in must be your own. Do not simply copy/paste the code or written answers from someone else. I reserve the right to take appropriate actions, as mandated by UT policies, in the event of suspected cheating or plagiarism. For your reference, the UT honor statement reads: "An essential feature of the University of Tennessee, Knoxville is a commitment to maintaining an atmosphere of intellectual integrity and academic honesty. As a student of the university, I pledge that I will neither knowingly give nor receive any inappropriate assistance in academic work, thus affirming my own personal commitment to honor and integrity."

University Civility Statement: Civility is genuine respect and regard for others: politeness, consideration, tact, good manners, graciousness, cordiality, affability, amiability and courteousness. Civility enhances academic freedom and integrity, and is a prerequisite to the free exchange of ideas and knowledge in the learning community. Our community consists of students, faculty, staff, alumni, and campus visitors. Community members affect each other's well-being and have a shared interest in creating and sustaining an environment where all community members and their points of view are valued and respected. Affirming the value of each member of the university community, the campus asks that all its members adhere to the principles of civility and community adopted by the campus: http://civility.utk.edu/.

Important Dates:

Problem Set 1 due Thursday, September 5th Problem Set 2 due Thursday, September 19th Exam 1 – Thursday, September 26th

Research proposal due Tuesday, October 8th Fall break begins Thursday, October 17th (no class) Problem Set 3 due Thursday, October 24th Exam 2 – Thursday, October 31st

Draft paper due Tuesday, November 12th Problem Set 4 due Tuesday, November 26th Thanksgiving is Thursday, November 28th (no class) Exam 3 – Tuesday, December 10th, 10:15am-12:15pm (Section 1) or Wednesday, December 11th, 12:30-2:30pm (Section 2)

Final paper due by Sunday, 11:59pm, December 8th

Course Outline: Lectures will mostly follow the presentation in the book. A basic outline is given below. On the course web site, under "Course Schedule", you will find a log of what was (or will likely be) covered on a lecture-by-lecture basis – this information is to help you prepare for class.

I. Linear Regression Analysis

Chapter 1 Chapter 2 Chapter 4

II. Hypothesis Testing

Chapter 5 & Appendix B

III. Research Basics

Chapter 3 Chapter 6 Chapter 11

IV. Model Specification

Chapter 7 Chapter 8

V. Econometric Issues I: Serial Correlation, Heteroskedasticity & Dummy Dependent Variables

Chapter 9 Chapter 10 Chapter 13 Section 13.1 only

VI. Econometric Issues II: Panel Data Models & Endogenous Explanatory Variables

Chapter 16 Chapter 14