

Graduate Econometrics
Fall 2022
Tuesday 5:30-8:15 PM, Center City 805

Instructor: Dr. Lisa Schulkind
Email: lschulki@uncc.edu
Office: Friday 227B
Office Hours: T 2:30-4:00, TH 11:15-12:45

Teaching Assistant: TBD
Email: TBD
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COURSE DESCRIPTION AND OBJECTIVES

This course is designed to introduce students to the advanced study of econometric theory as well as its application to economic problems. Topics include the derivation of least squares estimators, maximum likelihood estimation, instrumental variables and the problems of multicollinearity, heteroskedasticity, and autocorrelation. In addition, emphasis will be placed on applying these concepts using economic data. The primary goal of the class is to provide the tools needed in order to read and contribute to the body of applied economic literature.

REQUIRED TEXTS

Damodar Gujarati and Dawn Porter, *Basic Econometrics*, 5th Edition (2008).

Publisher: McGraw-Hill Higher Education, ISBN: 9780073375779

A. Colin Cameron, Pravin K. Trivedi, *Microeconometrics Using Stata*, Revised Edition, 2nd Edition (2010).

Publisher: Stata Press, ISBN: 9781597180733

RECOMENDED TEXTS

Joshua Angrist and Jorn-Steffen Pischke, *Mostly Harmless Econometrics: An Empiricist's Companion* (2009).

Publisher: Princeton University Press, ISBN: 9780691120355

Stock and Watson, *Introduction to Econometrics*, any edition.

Publisher: Addison-Wesley

SOFTWARE

This course will require the use of the statistical program Stata. You are welcome to use a different statistical program in its place, but I will only answer questions about Stata. It is available to students for free via Apporto (I will provide instructions on how to access it early in the course). You might also want to purchase your own copy of **Stata/IC**, available at a reduced price from: <http://www.stata.com/order/new/edu/gradplans/>

GRADING

15% - Problem Sets

10% - Class Participation

15% - Replication Project

60% - Exams

Problem Sets: I will assign at least one problem set for each topic that will consist mostly of questions from the text. They will be posted on Canvas, and are intended to provide opportunities to practice using the information learned in class and in the readings. You must hand in your own assignment, but you are encouraged to work through the problems with your classmates. They will be graded as 100 (put significant effort into all questions, according to my subjective evaluation), 50 (put significant effort into at least half of the questions) and 0 (significant effort not displayed or didn't hand in). **Due dates will be posted on Canvas.** Late assignments can receive a maximum grade of 50 and must be handed in by the last day of class (12/6) to receive credit. No exceptions. Answer keys will be posted and students are encouraged to attend office hours to ask questions. **Questions that require Stata do files and log files (or equivalent) will receive zero credit without them.**

Class Participation: Class participation is an important part of the learning process. I expect you to be in class and to be prepared and engaged while you are there. While I will rarely take attendance, being in class is crucial to success in the class, and it will be counted as part of your participation grade. Another way to show that you are engaged is to watch the weekly roundup video and fill in the weekly feedback survey each week. More details will be provided on the first day of class.

Replication Project: You will be asked to replicate many of the main findings from a published, peer-reviewed paper. This project is designed to give you a chance to practice applying the theory from class using Stata. The project will be handed in in three stages, and more details about what is expected in each stage will be given in class and on Canvas. You may work in groups of 1-3 students, but may NOT consult with anyone other than your group members, the teaching assistant and myself. You may use Stata resources available on the

web, but MAY NOT use anything you may find that is directly related to replicating the paper or contact the author(s) of the paper. Late assignments will lose a full letter grade each day that they are late.

Exams:

There will be three exams given throughout the semester: two during the semester and one during finals week. Each exam counts equally.

COURSE OUTLINE

This is meant as a rough guide. Exam dates will not change without advanced notice, but we might cover topics slightly slower or faster than expected. Any changes will be announced in class. Any additional course readings will be posted on Canvas.

Topic 1: Introduction to Course and Stata and Review of Calculus, Matrix Algebra and Basic Statistical Concepts

Approximate Dates: Weeks 1-3

GP: Introduction, Chapters 1 and Appendices A & B

CT: Chapters 1 & 2

SW: Chapters 1, 2 & 3

Topic 2: Two Variable Regression Analysis

Approximate Dates: Weeks 3-5 before Exam 1; Week 6-7 after Exam 1

GP: Chapters 2, 3, 4 (including appendix 4A) & 5

CT: Chapter 3

Exam #1: Week 6: Tuesday Sept 27

Topic 3: Multiple Regression Analysis: The Problem of Estimation/Inference

Approximate Dates: Weeks 7-10

GP: Chapters 7 & 8

Topic 4: Multiple Regression Analysis: Dummy Variables and Nonlinear Models

Approximate Dates: Week 10

GP: Chapters 6, 9 & 14

Exam #2: Week 12: Tuesday Nov 8

Topic 5: Relaxing the Assumptions of the Classical Model: Multicollinearity, Heteroskedasticity and Autocorrelation

Approximate Dates: Weeks 12 -13

GP: Chapters 10, 11 & 12

Topic 6: Model Specification and Diagnostic Testing

Approximate Dates: Week 14

GP: Chapter 13

Topic 7: Panel Data Regression Models

Approximate Dates: Weeks 15-16 (Nov 29- Dec 8)

GP: Chapter 16

CT: Chapter 8

Topic 8: Instrumental Variable Models

Approximate Dates: If time allows

CT: Chapter 6

SW: Chapter 12

Exam #3 (Final): Tuesday, December 13 from 5 - 7:30pm

CLASS POLICIES

- Academic Integrity: All students are required to read and abide by the Code of Student Academic Integrity. Violations of the Code of Student Academic Integrity, including plagiarism, will result in disciplinary action as provided in the Code. Definitions and examples of plagiarism are set forth in the Code and on the Student Conduct and Academic Integrity website. The Code is available from the Dean of Students Office or online at legal.uncc.edu/policies/up-407. Additional resources are available on the Student Conduct and Academic Integrity website.
- Accommodation Policy: UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please provide a letter of accommodation from Disability Services early in the semester. For more information on accommodations, contact the Office of Disability Services at 704-687-0040 or visit their office in Fretwell 230.
- Exam Policy: There will not be any regularly scheduled makeup exams. If you cannot be there on exam days, do not take this class. If you miss an exam for any reason, you must contact me prior to the examination time or as soon as you are reasonably able to do so and we will discuss the possibility of a makeup exam or alternative grade weighting. These options will be provided at my discretion, and only in the case of a documented serious illness or family emergency.
- Re-grade Policy: If you would like your exam re-graded, you must submit a re-grade request, *in writing, within one week* of receiving your graded exam. Your request should point out the question(s) where you think you deserve additional credit, along with an explanation. Please note that your *entire exam* will be reviewed, and your final score may go *up or down*.
- “No Screen”:
While in class, I expect you to follow my “no screen” policy. I do not want to see any cell phones. Leave them in your backpack/purse/pocket (with the sound turned off) during class. Laptops/Tablets are **strongly** discouraged. They will not be very helpful for note taking, as much of the class will

require writing equations, graphs, etc. If you absolutely must use one, please talk to me about it in person.

Discrimination:

All students and the instructor are expected to engage with each other respectfully. Unwelcome conduct directed toward another person based upon that person's actual or perceived race, actual or perceived gender, color, religion, age, national origin, ethnicity, disability, or veteran status, or for any other reason, may constitute a violation of University Policy 406, The Code of Student Responsibility. Any student suspected of engaging in such conduct will be referred to the Office of Student Conduct.

Diversity:

The Belk College of Business strives to create an inclusive academic climate in which the dignity of all individuals is respected and maintained. Therefore, we celebrate diversity that includes, but is not limited to ability/disability, age, culture, ethnicity, gender, language, race, religion, sexual orientation, and socio-economic status.

Gender:

This course affirms people of all gender expressions and gender identities. If you prefer to be called a different name than what is indicated on the class roster, please let me know. Feel free to correct me on your preferred gender pronoun. If you have any questions or concerns, please do not hesitate to contact me.