

**ECON 6112**  
**Graduate Econometrics**  
Spring 2023  
Monday, 5:30pm – 8:15pm  
Center City, room 904

**Instructor** Kelly Vosters  
Email: kvosters@uncc.edu  
Office: 219C, Friday building  
Virtual Office Hours: MW 1-2:30pm and by appointment

**Virtual office hours**

I will hold virtual office hours on Mondays and Wednesdays between 1:00pm-2:30pm by appointment, as well as other times that may work better for you. Please send me an email to schedule a time and I will set up a Zoom meeting for us. If you prefer in person, please send me an email to set up a meeting.

**Textbooks**

Required textbook:

Wooldridge, Jeffrey M. (2016). *Introductory Econometrics: A Modern Approach, 6<sup>th</sup> Edition*. Mason, OH: South-Western Cengage Learning. (Earlier editions are okay, but I may assign problems from the 2016 edition; if so, it is your responsibility to get these.)

I find that it is very helpful to see alternative presentations of econometric methods, and therefore also list a few other texts that may be useful supplementary resources for the course and throughout your career:

Verbeek, Marno. (2012). *A Guide to Modern Econometrics, 4th edition*. New York, NY: John Wiley and Sons, Inc. (Earlier editions are fine.)

Angrist, J., and Pischke, J. (2009). *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton U. Press.

Cameron, A.C., and Trivedi, P.K. (2010). *Microeconometrics Using Stata*, Stata Press.

**Course website**

I will post most course related materials to the course Canvas page, including the syllabus. However, not all information covered in class will necessarily be posted (see attendance policy below).

Although I will do my best to stick to the dates in Canvas for modules and assignments, naturally these are subject to change. Exam dates will not change – see exam policy below.

**Course Description and Objectives**

This is an advanced course in econometrics, aiming to equip students with a foundation for conducting quantitative research. We will cover several estimation methods, including least squares, maximum likelihood, instrumental variables, along with econometric issues such as multicollinearity, heteroskedasticity, and autocorrelation. The main objective of the course is to provide students with the tools needed to read, evaluate, and contribute to the body of applied economic literature.

## Software

We will use STATA for this course, which is available on all Belk College computers and is accessible remotely using UNCC's Apporto (<https://charlotte.apporto.com/>). If you wish to obtain STATA for your own computer, you can get a discounted student edition:

<http://www.stata.com/order/new/edu/gradplans/student-pricing/>

(Note: STATA/BE will be sufficient for this course.)

## Attendance

Attendance is strongly encouraged but will not count directly towards the course grade. Students are responsible for all information and materials presented in class. If you must miss a class, you will be responsible for getting notes and any handouts from a classmate.

## Grading

Course grades will be based on the number of points you earn on three in-class exams, problem sets, and the course project; the weights assigned to each of these are shown below. There will NOT be opportunities for extra credit.

<u>Weights for Final Grade Calculation</u>		<u>Scale for Assigning Letter Grades</u>	
Exam 1	25%	90% - 100%	A
Exam 2	25%	80% - 89%	B
Exam 3	25%	70% - 79%	C
Problem Sets	10%	Below 70%	U
Project	15%		

*Re-grading:* If you would like your exam re-graded, you must submit a re-grade request in writing within 1 week from when the graded exams are passed back in class (if you miss this class, your deadline is not extended). Your request must clearly note *where* and *why* you think you deserve additional points. Note: your entire exam will be re-graded, so your final score may go up or down.

## Exams

If you cannot be there on exam days (listed below), do not take this class. Makeup exams are not given. Missed exams will be given a grade of zero. The only exceptions will be decided at the discretion of the instructor, and will only be considered for extreme situations such as a documented serious illness or family emergency, with advance notice and adequate written documentation. In these instances, we will discuss options for alternative grade weighting.

**Exam 1            Monday, February 13 (in class)**

**Exam 2            Monday, March 27 (in class)**

**Exam 3            Monday, May 8 at 5:00pm**

## Problem Sets

I will assign a few problem sets during the semester. You may work together but programming statements (including variable names) and your answers must be unique to each individual. You will be given at least one week to work on them. No late problem sets will be accepted.

## Proposed Course Outline (subject to change)

The course outline is intended to give you an idea of the material we will cover, and may change as the semester goes on. Keeping up with deviations from the outline is your responsibility.

Introduction to the course (Ch. 1)

Review of mathematical tools: Calculus / Matrix Algebra / Statistics (Appendices)  
Simple Linear Regression (Ch. 2)  
Multiple Linear Regression:  
    Estimation (Ch. 3)  
    Inference (Ch. 4)  
    OLS Asymptotics (Ch. 5)  
    Further issues (Ch. 6)  
    Binary variables (Ch. 7)  
    Heteroscedasticity (Ch. 8)  
    Specification and data issues (Ch. 9)  
Time Series  
    Basic regression analysis (Ch. 10)  
    Further issues (Ch. 11)  
    Serial correlation and heteroscedasticity (Ch. 12)  
Panel Data Methods (Ch. 13)  
Instrumental Variables and Two Stage Least Squares (Ch. 15)  
Limited Dependent Variable Models (Ch. 17)

### **Replication project**

You will replicate many of the main findings from a published, peer-reviewed paper. This project is intended to give you practice applying the theory from class using Stata. The project will be completed in multiple stages, and more details about what is expected for the project (and in each stage) will be given in class. You may work in groups of 2-3 students, but may NOT consult with anyone other than your group members 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.

### **Course Policies**

**Email communication:** Email is the best way to reach me outside of office hours or class time. I will try to respond to your email in a timely manner (within 24 hours), but an immediate response is not guaranteed. Please use appropriate email etiquette in any communication (e.g., include salutation, signature (name), and no abbreviations). For guidance on email etiquette, see <https://owl.english.purdue.edu/owl/resource/636/1/>

**Punctuality:** I expect you to be on time for class, to complete assignments in a timely manner, and to take exams when scheduled. I will end on time but please do not start packing up until the class is completely done. If you know that you need to leave early, please inform me and sit as close to the door as possible to minimize disruptions.

**Learning environment:** Please be respectful to your classmates and turn off the ringer on your cell phone and refrain from texting or any other non-coursework related use of your phones, tablets, or laptops during class.

**Life happens:** If you become seriously ill, experience the death of a loved one or have a life altering experience (e.g., divorce) that is negatively influencing your participation in our class, please contact me as soon as possible so we can discuss your options. If emergencies arise

that require an absence from class, be sure to get the notes and other information that was covered in class from a student you trust. See more on student support services below.

**Do your own work!** While I have no problem with you working with your classmates to understand the material, please do not turn in answers that are identical (or nearly identical) to anyone else's. See more information on academic (dis)honesty below.

### **Other Important Reminders**

**The above is subject to change.** The course information outlined in this syllabus may be modified at any time, depending on how the course progresses; any such changes will be clearly communicated by announcements in class and via email.

**COVID-19.** Students must comply with university policies. As we have seen, policies have evolved during the pandemic, so please be sure to read university emails to stay up to date.

**Academic Honesty.** 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. The Code is available from the Dean of Students Office or online at <http://legal.uncc.edu/policies/up-407>.

**Accommodations for Disabilities.** UNC Charlotte is committed to access to education. If you have a disability and need academic accommodations, please send me your accommodation letter as early as possible. You are encouraged to meet with me to discuss the accommodations outlined in your letter. For more information on accommodations, contact the Office of Disability Services at 704-687-0040 (Fretwell 230).

**Diversity Statement:** 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.

**Student Support Services:** UNC Charlotte has staff members trained to support you in navigating campus life, accessing health and counseling services, providing academic and housing accommodations, helping with legal protective orders, and more. These helpful resources include: (1) University Counseling Center ([counselingcenter.uncc.edu](http://counselingcenter.uncc.edu), 7-0311); (2) Student Health Center ([studenthealth.uncc.edu](http://studenthealth.uncc.edu), 7-7400); or (3) Center for Wellness Promotion ([wellness.uncc.edu](http://wellness.uncc.edu), 7-7407).

Please be aware that many UNC Charlotte employees, including all faculty members, are considered Responsible Employees who are required to relay any information or reports of sexual misconduct they receive to the Title IX Coordinator. Although I have to report the situation, you will still have options about how your case will be handled, including whether or not you wish to pursue a formal complaint. Our goal is to make sure you are aware of the range of options available to you and have access to the resources you need. If you wish to speak to someone confidentially, you can contact any of the above mentioned on-campus resources, who are not required to report the incident to the

Title IX Coordinator. Additional information about your options is also available at [titleix.uncc.edu](http://titleix.uncc.edu) under the “Students” tab.