



ECON 4750
Introduction to Econometrics
Course syllabus

Fall 2021
TR 1245p
Correll 315

INSTRUCTOR

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Office hours
Wed, 200-330p
and by appointment

COURSE DESCRIPTION

ECON 4750 provides an introduction to the specification and estimation of linear regression models, with an emphasis on causal inference. A hands-on approach is taken, stressing applications to empirical questions in economics and business.

COURSE OBJECTIVES

After completing this course, you should understand

1. what a regression model is;
2. how to estimate regression models using ordinary least squares (OLS);
3. how OLS works in cross-section contexts and when it is justified;
4. how to conduct inference and make predictions using regression models;
5. the main threats to causal inference;
6. alternative research designs for causal inference; and
7. how to apply the techniques covered in this course using R.

COURSE MATERIAL

Required: Wooldridge, J., *Introductory Econometrics*, Thomson, 7e.

Recommended: Angrist, J. and Pischke, S., *Mastering 'Metrics*, Princeton University

Recommended: Heiss, F., *Using R for Introductory Econometrics*.

In addition, we will refer to a few selected articles from the scholarly literature, copies of which will be posted on eLC.

SOFTWARE

A great deal of the learning in ECON 4750 is accomplished through empirical projects that require the use of statistical software. The software of choice for this class is **R**, a free and open-source language for statistical computing and graphics. **RStudio** is a popular integrated



development environment (IDE) for R that will greatly enhance your R experience. Download R [here](#) (first); (then) download RStudio [here](#).

As we move through the course material, I will be introducing you to the features of R required apply the econometric techniques you will learn. Along the way, you will benefit from the Heiss text, as it is designed to be an “R companion” to Wooldridge, guiding you through the code behind the empirical results presented in his book.

ELECTRONIC DEVICE POLICY

Cell phones **must** be muted or turned off, and stowed away during class. Laptops may be used in class, but **only** for purposes directly related to the course (e.g., taking notes and viewing course materials).

PERFORMANCE EVALUATION

Assignments and grading policy

Performance will be evaluated on the basis of homework, two midterms, and a final project (paper + presentation), weighted as follows:

Component	Weight
homework	.10
midterm exams	.30 each
project paper + presentation	.30

The **homework and project will be done in teams**, but your individual homework and project scores will be weighted by your team members’ evaluations of your performance. Depending on the evaluation of your peers, you will receive between 50 and 100 percent of your team’s score. A peer evaluation form is posted on eLC, along with a course project description and grading rubric.

The **project presentations are scheduled for the final exam period: Thu, Dec 17 at noon**. All team members are expected to participate in the presentation component of the project. If you know now that you will not be able to participate at the scheduled time, then you should drop this course.

The **midterm exams will be taken individually**. *You will not be permitted to confer with anyone, period.* Doing so will constitute a violation of UGA's academic honesty policy (see below). The midterm exams are tentatively scheduled for **Thu, Oct 7** and **Thu, Dec 2**. Makeup midterms will be permitted only in the case of a documented illness or family emergency or an absence that is excused in advance. Otherwise, a missed midterm will result in a grade of zero.



You will be **ranked** relative to other students in the class according to your overall performance and grades assigned based on your class rank. I will use the plus/minus system to make distinctions within grade categories.

Class Attendance

Regular class attendance is essential for success and therefore strongly encouraged. **For each absence beyond the second, your course grade will fall by one level** (e.g., an ‘A minus’ will drop to ‘B plus’). Attendance will be recorded at the beginning of the class; late arrivals will be counted as absent.

COURSE OUTLINE

Section	Wooldridge 7e reading	Supplemental reading
0. Statistics review	Appendices B,C	
1. Cross-section regression		
1.0. Empirical context and causal claims	1	AP, 1; Card (1993)
1.1. Simple regression	2	
1.2. Multiple regression		AP, 2
1.2.1. Estimation	3, 6.2	
1.2.2. Exact inference	4	
1.2.3. Asymptotic inference	5, 8.1-8.2	
1.2.4. Prediction	6.3-6.4	Mullainathan and Spiess (2017); James et al., 6.2
1.3. Categorical data	7, 17.1	
1.4. Proxy variables and measurement error	9.2, 9.4-9.5	
1.5. Panel data	13.1, 13.3, 13.5, 14.1, 14A	
2. Research design and causal effects		
2.1. Potential outcomes		
2.2. Difference-in-differences	13.2, 13.4	AP, 5; Cheng and Hoekstra (2013)
2.3. Regression discontinuity		AP, 4; Carpenter and Dobkin, (2009)
2.4. Instrumental variables	15.1-15.6	AP, 3; Card (1993)



UNIVERSITY HONOR CODE & ACADEMIC HONESTY POLICY

As a University of Georgia student, you have agreed to abide by the University's academic honesty policy, "A Culture of Honesty," and the Student Honor Code. All academic work must meet the standards described in "A Culture of Honesty" found at:

<https://ovpi.uga.edu/academic-honesty>. Lack of knowledge of the academic honesty policy is not a reasonable explanation for a violation. Questions related to course assignments and the academic honesty policy should be directed to the instructor.

WELL-BEING, MENTAL HEALTH, AND STUDENT SUPPORT

If you or someone you know needs assistance, you are encouraged to contact Student Care & Outreach in the Division of Student Affairs at 706-542-7774 or visit <https://sco.uga.edu/>. They will help you navigate any difficult circumstances you may be facing by connecting you with the appropriate resources or services.

UGA has several resources to support your well-being and mental health: <https://well-being.uga.edu/>

Counseling and Psychiatric Services (CAPS) is your go-to, on-campus resource for emotional, social and behavioral-health support: <https://caps.uga.edu/>, TAO Online Support (<https://caps.uga.edu/tao/>), 24/7 support at 706-542-2273. For crisis support: <https://healthcenter.uga.edu/emergencies/>.

The University Health Center offers FREE workshops, classes, mentoring and health coaching led by licensed clinicians or health educators: <https://healthcenter.uga.edu/bewelluga/>

CHANGES TO THE SYLLABUS

The syllabus is a general plan for the course; deviations announced to the class by the instructor may be necessary.