

# ECO 7424: Econometric Models and Methods

University of Florida - Spring 2021

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**Office hours:** Wednesdays, 2:00-3:30pm

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**Office hours:** TBD

## Course description

ECO 7424 is the second course in the 1st-year PhD econometrics sequence. It builds on ECO 7415 and introduces some of the foundational models and methods in econometrics. The first half of the course will focus on linear regression, while the second half will consider topics including endogeneity, the generalized method of moments, and maximum likelihood estimation.

## Class meetings and office hours

Classes will be held from 11:45am-1:40pm in Matherly Hall Room 16. The classes will be live-streamed on Zoom. Thus, students can participate either in-person or online. My office hours will occur via Zoom from 2:00 to 3:30pm on Wednesdays. The Zoom link is available on the course webpage on Canvas.

## Textbook

The course will closely follow the graduate econometrics text, *Econometrics*, from Bruce Hansen. This text is free and available online at [www.ssc.wisc.edu/~bhansen/econometrics](http://www.ssc.wisc.edu/~bhansen/econometrics). There are a number of other books that cover similar material, including:

- Cameron and Trivedi (2005), *Microeconometrics*
- Davidson and MacKinnon (2004), *Econometric Theory and Methods*
- Greene (2001), *Econometric Analysis*
- Hayashi (2001), *Econometrics*
- Wooldridge (2010), *Econometric Analysis of Cross Section and Panel Data*

When you find a concept confusing, it is often useful to consult these other texts for an alternative explanation.

# Exams, problem sets, and grading

The course will have a midterm and a final. The midterm is tentatively scheduled to occur in class on February 22nd. There will also be frequent problem sets. Students are encouraged to work together on problem sets. However, each student must write up and submit his/her own answers. The grading structure will be the following:

Table 1: Grading details

Component	Percent
Problem sets	15%
Midterm	40%
Final	45%

## Course structure

A tentative list of the topics that we will cover is presented below.

### Linear regression

- Conditional expectations and projection
  - Hansen Chapter 2.1-2.25
- The algebra of least squares
  - Hansen Chapter 3
- Least squares regression
  - Hansen Chapter 4.1-4.22
- Asymptotic theory for least squares
  - Hansen Chapter 6, 7

### Additional topics

- Endogeneity and IV
  - Hansen Chapter 12.1-12.12
- Generalized method of moments
  - Hansen Chapter 13
- MLE and discrete choice
  - Hansen Chapter 25