

ECO 7424: Econometric Models and Methods

University of Florida - Spring 2023

Instructor

Robert Ainsworth
Matherly Hall Room 321
352-392-7626
robert.ainsworth@ufl.edu
Office hours: Thursdays, 3:00-5:00pm

TA

Ilia Kapelevich
ikapelevich@ufl.edu
Office hours: TBA

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 bootstrapping, endogeneity, and the generalized method of moments.

Class meetings and office hours

Classes will be held from 1:55-3:50pm on Mondays and Wednesdays in Matherly Hall Room 114. The classes will be live-streamed on Zoom. Thus, students can participate either in-person or online. My office hours will occur in-person or via Zoom from 3:00 to 5:00pm on Thursdays. The TA, Ilia Kapelevich, will hold office hours at a time TBA. All Zoom links can be found on the course webpage on Canvas. If you would like to schedule a meeting at a different time, please email us.

Attendance and make-up assignments

Attendance is required. Make-up assignments and exams will be arranged only for absences that are explicitly covered by the [UF Attendance Policy](#). Whenever possible, you should reach out at least five business days in advance to arrange a make-up assignment or exam. Of course, this will not always be possible. Unforeseen absences and emergencies occur and can be excused without such advance notice. In most cases, you will be asked to provide evidence or documentation of an absence that is explicitly excused by the UF Attendance Policy. Absences related to religious holidays and worship do not require this documentation.

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. 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

The course will have two non-cumulative midterm exams. These will take place in person, during our scheduled class times. In the class session before each exam, I will hold a review session. The dates and topics for the exams are shown below:

Table 1: Exam details

Exam	Date	Topics
1	3/08	Linear regression
2	4/26	Bootstrapping, endogeneity, and GMM

Problem sets

The course will have frequent problem sets. Late submissions will not be accepted. However, we will drop the assignment with the lowest grade. Problem sets will be graded by the TA. As such, students can direct most questions about these to him.

Homework assignments should be typed and submitted via Canvas. I recommend doing so using LaTeX. An easy way to introduce yourself to LaTeX is through a program called LyX. LyX is free and open source, and it allows producing documents in LaTeX without having to know all the code. LyX is available at: <https://www.lyx.org/Download>.

Students are allowed to work together on problem sets. However, each student must write up his/her own submission.

Grades

The grading structure for the course will be the following:

Table 2: Grading details

Component	Percent
Problem sets	15%
Exam 1	40%
Exam 2	45%

The final letter grade distribution will be determined as follows:

Table 3: Grade scale

Score	Grade
93-100	A
90-92	A-
87-89	B+
83-86	B
80-82	B-
77-79	C+
73-76	C
70-72	C-
67-69	D+
60-66	D
0-59	E

Professionalism and Honor Code

Students are bound to not cheat or plagiarize, and are bound by The Honor Pledge which states, “We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: ‘On my honor, I have neither given nor received unauthorized aid in doing this assignment.’”

You should familiarize yourself with the [UF Student Honor Code](#). Cheating and plagiarism are not the only violations of this policy. Importantly, ignorance of a policy is not a valid reason for violating it.

Students requiring accommodations

Students with disabilities requesting accommodations should first register with the [Disabilities Resource Center](#) (352-392-8565), providing appropriate documentation. Once registered, students will receive an accommodation letter that can be presented to the instructor when requesting accommodations. Please register at the beginning of the course if seeking accommodations.

Course evaluations

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via ufl.bluera.com/ufl.

UF Teaching Center

The UF Teaching Center offers guidance on study skills and tutoring services. You can find more information at: <https://umatter.ufl.edu/office/teaching-center>.

In-class recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor. A “class lecture” is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Course structure

The course schedule is listed below. Please see Canvas for any changes.

Linear regression

- C01—01/09: Conditional expectations and projection
 - Hansen 2.1-2.7
- C02—01/11: Conditional expectations and projection
 - Hansen 2.7-2.15
- C03—01/18: Conditional expectations and projection
 - Hansen 2.15-2.21, 2.24-2.25
- C04—01/23: The algebra of least squares
 - Hansen 3.1-3.7

- C05—01/25: The algebra of least squares
 - Hansen 3.7-3.12
 - Homework 1 due
- C06—01/30: The algebra of least squares
 - Hansen 3.13-3.16, 3.18
- C07—02/01: Catch-up day
- C08—02/06: The algebra of least squares
 - Hansen 3.19-3.21
- C09—02/08: Least squares regression
 - Hansen 4.1-4.8
 - Homework 2 due
- C10—02/13: Least squares regression
 - Hansen 4.8-4.12
- C11—02/15: Least squares regression
 - Hansen 4.13, 4.15-4.17, 4.20-4.21
- C12—02/20: Asymptotic theory for least squares
 - Hansen 6.1-6.8
- C13—02/22: Asymptotic theory for least squares
 - Hansen 7.1-7.2
 - Homework 3 due
- C14—02/27: Asymptotic theory for least squares
 - Hansen 7.3, 7.5
- C15—03/01: Asymptotic theory for least squares
 - Hansen 7.6-7.14
- C16—03/06: Review
 - Homework 4 due
- C17—03/08: Exam 1

Additional topics

- C18—03/20: Clustering
 - Hansen 4.23-4.25
- C19—03/22: Clustering
 - Hansen 4.23-4.25
- C20—03/27: The bootstrap
 - Hansen 10.1-10.2, 10.6-10.9
- C21—03/29: Causality
 - Lecture notes
 - Homework 5 due
- C22—04/03: Causality
 - Lecture notes
- C23—04/05: Endogeneity and IV
 - Hansen 12.1-12.7, 12.11-12.12
- C24—04/10: Endogeneity and IV
 - Hansen 12.9, 12.12, 12.15-12.16
- C25—04/12: IV with treatment effect heterogeneity
 - Lecture notes
 - Homework 6 due
- C26—04/17: GMM
 - Hansen 13.1-13.3
- C27—04/19: GMM
 - Hansen 13.4-13.6, 13.25, 13.7-13.11
- C28—04/24: Review
 - Homework 7 due
- C29—04/26: Exam 2