

Syllabus Fall 2023

ECO 4421: Econometrics (Probability and Statistics for Economists)

CLASS TIME AND LOCATION

Section 2400 (22823): TR, Period 5-6 (11:45am -1:40pm)

MAT 119

Section 2967 (11660): TR, Period 7-8 (1:55pm - 3:50pm)

MAT 105

OFFICE HOURS

Wednesdays: 2:00 pm – 4:00 pm or by appointment

MAT 339

INSTRUCTOR

Fei He

Office: MAT 339

Phone: 352-392-0158

Email: he.fei@ufl.edu

COURSE DESCRIPTION

Econometrics serves as a bridge between theoretical concepts concerning economic behavior at both macro and micro levels, and the practical aspect of measurement, which involves quantifying observable phenomena. ECO 4421 introduces students to the fundamental principles of econometric analysis. The course will focus on probability and statistics, emphasizing their relevance and significance in empirical economic research, as well as applying them to the workhorse of econometrics.

PREREQUISITES

ECO 2013 & ECO 2023 & ECO 3101

TEXTBOOKS AND READINGS

James H. Stock and Mark W. Watson, Introduction to Econometrics, published by Pearson

Jeffery M. Wooldridge, Introductory Econometrics: A Modern Approach, published by Cengage Learning.

COURSE COMMUNICATION

- Information related to the course, including announcements, homework assignments, and other course materials will be available through UF's Canvas "e-Learning" system. To access e-Learning you will need your Gatorlink username and password. E-Learning can be accessed via <http://elearning.ufl.edu/>. Should you have difficulties accessing e-Learning, please contact the UF Computing Help Desk at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Syllabus Fall 2023

- E-mail (either to my email address or via Canvas messaging) is the best way to reach the instructor. Please give the instructor 48 hours to respond to questions. You are highly encouraged to “bump” the messages to the instructor’s attention if you have not received a response within 48 hours.

SOFTWARE AND PROGRAMMING

Several of the problem sets will involve simulations and empirical analysis and will require the use of a statistical software. R is the statistical software for this course. We will use the statistical package R via a front-end called RStudio throughout the course. Both programs are free and open source. I highly recommend that you use RStudio (<https://rstudio.com>) as it is more user-friendly way of using R. You are not required to have any prior knowledge of R or other programming experience, but you must be willing to learn. R & RStudio are installed in many computers on campus (e.g., Marston Science Library). You can easily install R on your personal computer. R is free (open source) and available for Windows, Mac, and Linux. To download R, go to <https://www.r-project.org/>. You are encouraged to work with other students on the problems sets, but each student must write her/his own answers.

EXPECTED STUDENT LEARNING OUTCOMES

After the completion of ECO 4421, you should be able to:

- Specify fundamental theoretical concepts in probability.
- Identify the general statistical concepts, including standard errors, hypothesis testing, and confidence intervals.
- Detect and address econometric assumptions that typically do not hold in economic data.
- Apply statistical programming language R to program simulation and conduct basic econometric analysis.
- Analyze simple regression models using real-life data and interpret the results of the models critically and logically.

GRADING

Students are expected to attend the lectures. The overall course grade is based solely on your performance on problem sets, in-class quizzes, and exams.

Your final course grade is determined by the following components:

Exam 1	25%
Exam 2	35%
Problem sets	30%
In-class quizzes	10%
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Total	100%

Syllabus Fall 2023

Grades will be awarded as follows:

Percentage	Grade
93% or greater	A
90 – 92.99%	A-
86 – 89.99%	B+
83 – 85.99%	B
80 – 82.99%	B-
76– 79.99%	C+
73 – 75.99%	C
70 – 72.99%	C-
66 – 69.99%	D+
63 – 65.99%	D
60 – 62.99%	D-
Below 60%	E

Please note that grades are not “rounded” in any way at the end of the term. However, a curve may be implemented at the instructor’s discretion.

For general information about grading and grading policy at the University of Florida, please refer to: <https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

EXAMS

There will be two in-class exams during the semester. The exams may consist of multiple choice, problem-solving, and short answer questions. The exams may be based on material covered in class, material from the textbook, or concepts implied by the material covered. The exam dates are tentatively scheduled as follows:

- **Exam 1: October 12**
- **Exam 2: December 5**

Note: Posted exam dates are subject to change, it is your responsibility to listen to class announcements and check e-Learning for any changes in exam dates.

PROBLEM SETS

The problem sets are designed to give you the opportunity to review and enhance the material learned in class. There will be **seven problem sets** assigned during the semester. Problem sets will be posted on Canvas. Each problem set is worth 5%. The lowest problem set score will be dropped. Please submit electronic copies of your problem set through Canvas (either handwritten and scanned, or neatly typed) before they are due. Late submissions will receive half credit.

IN-CLASS QUIZZES

Single question quizzes will be administered during class throughout the semester. Written answers will be collected during class.

Syllabus Fall 2023

ATTENDANCE AND MAKE-UP WORK

Requirements for class attendance and make-up exams, assignments and other work are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/> In general, you are expected to be in class each day and submit all work on time on e-Learning.

APPROXIMATE COURSE OUTLINE BY WEEK

Week	Tuesday	Thursday	Material/Notes
21-Aug	No Class		Class introduction
28-Aug		PS1	Introduction to R (Tutorial)
4-Sep		PS2	Introduction to probability
11-Sep			Random variables and probability distributions I
18-Sep		PS3	Random variables and probability distributions II
25-Sep			Introduction to statistics
2-Oct		PS4	Hypothesis testing and confidence intervals
9-Oct	Exam 1 review	Exam 1	Exam 1
16-Oct			Causality and relationship between variables
23-Oct		PS5	Simple linear regression I
30-Oct			Simple linear regression II
6-Nov		PS 6	Simple linear regression III
13-Nov			Simple linear regression: Hypothesis Testing and Confidence Intervals I
20-Nov	PS 7	No Class	Simple linear regression: Hypothesis Testing and Confidence Intervals II
27-Nov		Exam 2 review	Simple linear regression: Hypothesis Testing and Confidence Intervals III
4-Dec	Exam 2	No Class	Exam 2

All problem sets are due by midnight on the assigned date. There will be quizzes on select lecture dates that do not have a problem set or exam due.

Syllabus Fall 2023

SUPPLEMENTAL INFORMATION

Accommodations for Students with Disabilities

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center. [Click here to get started with the Disability Resource Center.](#) It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in the semester.

Online Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. [Click here for guidance on how to give feedback in a professional and respectful manner.](#) 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. [Summaries of course evaluation results are available to students here.](#)

Academic Honesty

UF students 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.” The Honor Code specifies a number of behaviors that are in violation of this code and the possible sanctions. [Click here to read the Honor Code.](#) Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see the [Notification to Students of FERPA Rights.](#)

Campus Resources:

Health and Wellness

U Matter, We Care: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit [U Matter, We Care website](#) to refer or report a concern and a team member will reach out to the student in distress.

Counseling and Wellness Center: [Visit the Counseling and Wellness Center website](#) or call 352-392-1575 for information on crisis services as well as non-crisis services.

Student Health Care Center: Call 352-392-1161 for 24/7 information to help you find the care you need, or [visit the Student Health Care Center website.](#)

Syllabus Fall 2023

University Police Department: [Visit UF Police Department website](#) or call 352-392-1111 (or 9-1-1 for emergencies).

UF Health Shands Emergency Room / Trauma Center: For immediate medical care call 352-733-0111 or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; [Visit the UF Health Emergency Room and Trauma Center website.](#)

Academic Resources

E-learning technical support: Contact the [UF Computing Help Desk](#) at 352-392-4357 or via e-mail at helpdesk@ufl.edu.

Career Connections Center: Reitz Union Suite 1300, 352-392-1601. Career assistance and counseling services.

Library Support: Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center: Broward Hall, 352-392-2010 or to make an appointment 352- 392-6420. General study skills and tutoring.

Writing Studio: 2215 Turlington Hall, 352-846-1138. Help brainstorming, formatting, and writing papers.

Student Complaints On-Campus: [Visit the Student Honor Code and Student Conduct Code webpage for more information.](#)

On-Line Students Complaints: [View the Distance Learning Student Complaint Process.](#)