

# ECO 4421 Econometrics

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<b>Semester:</b>	Spring 2025	<b>Office Hours:</b>	W 1 PM - 3 PM
<b>Instructor:</b>	Douglas Turner	<b>Office:</b>	MAT 337
<b>Email:</b>	douglasturner@ufl.edu	<b>Class Hours:</b>	MW 4:05 PM - 6:00 PM
<b>Prereqs:</b>	STA 2023, MAC 2233, ECO 3101/ECP 3703	<b>Classroom:</b>	MAT 0114
<b>TA:</b>	Eric Bodnar	<b>TA Email:</b>	eric.bodnar@ufl.edu

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## Course Description

This course will explore the statistical methods used to analyze economic data (primarily regression). This course focuses on the theory and concepts behind these methods. Topics include an introduction to probability, an introduction to statistics, single variable linear regression, hypothesis testing and multiple linear regression. Econometric methods will be implementing using the R programming language. No prior knowledge of R is necessary before beginning the course.

This course is highly quantitative and will involve a large amount of mathematics. Most assignments and exams will involve math including calculus, statistics and probability. If you are uncertain about your mathematical preparation for the course, please speak with me.

## Course Materials

The primary textbook for this course is *Introduction to Econometrics* by Stock and Watson. 2018. Pearson. 4th Edition. ISBN 9780134461991. A supplementary textbook is *Introductory Econometrics: A Modern Approach* by Wooldridge. 2013. Cengage Learning. 5th Edition. ISBN 9781111531041. Earlier or later versions of these textbooks are also acceptable.

## Exams

There will be three exams which are tentatively scheduled for 2/12, 3/12 and 4/23. Exams are not cumulative. More information on the structure and length of exams will be given at the exam reviews (the class immediately before the exam).

## In-Class Assignments

- Completion of in-class assignments accounts for 20% of your grade.
- There will be in-class assignments throughout the semester on most days with a lecture (i.e., not an exam review or an exam). Each in class assignment is weighted equally. These assignments are typically completed at the end of class (on paper) and turned in during class. You may (and are encouraged to) work in groups on these assignments. Only one assignment should be submitted per group. These assignments are graded on completion. As long as your group makes an honest effort to complete the entire assignment, you will receive full credit.
- Your 3 lowest in-class assignment grades will be dropped (no questions asked). If your absence is excused, you may complete a makeup assignment for full credit. Please email the TA (Eric at eric.bodnar@ufl.edu) to request an excused absence and, when necessary, provide documentation.<sup>1</sup> Whenever possible, the TA should be contacted **prior** to the absence. The TA will provide a make up assignment which should be completed and emailed back to the TA (a picture or scan is acceptable)

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<sup>1</sup>If you do not wish to share the reason (or documentation) for your absence with the TA, you may email me instead.

within 48 hours of the missed class. If you need an extension on this deadline, please contact the TA directly to request this extension.

- Once solutions to the in-class assignment have been posted, typically 2 to 3 days after the in-class assignment takes place in class, no make up assignments will be awarded except under exceptional circumstances.

## Participation

Participation in lectures is essential and counts for 5% of your grade. Participation can be demonstrated by

1. **Answering Questions:** During a lecture, I often ask questions about the content to the class. Participation in lectures can be demonstrated by responding to these questions. Your participation grade is NOT impacted by the accuracy of your answers to these questions.
2. **Asking Questions:** Participation in lectures can be demonstrated by asking questions during the lecture.

It is not expected that every student participates in every lecture. Broadly, a pattern of participating at least once every 2 or 3 lectures is satisfactory and will earn a 5/5 for your participation grade.

Persistent use of cell phones during class indicates a lack of participation.

## Grading

- Any curving will be at the discretion of the instructor. The grading scheme is

Grading Scheme		Final Grading Scale			
Participation	5%	A	92-100	C	72-76.99
In-Class Assignments	20%	A-	90-91.99	C-	70-71.99
Exam 1	25%	B+	87-89.99	D+	67-69.99
Exam 2	25%	B	82-86.99	D	60-66.99
Exam 3	25%	B-	80-81.99	E	0-59.99
		C+	77-79.99		

## Course Schedule

SW denotes the Stock and Watson textbook.

W denotes the Wooldridge textbook.

MONDAY	WEDNESDAY
<p><a href="#">1/13</a> Course Introduction</p>	<p><a href="#">1/15</a> Random Variables and Probability Distributions Section 2.1 in SW and Expected Values, Mean and Variance Section 2.2 in SW</p>

MONDAY	WEDNESDAY
1/20 NO CLASS: MLK Day	1/22 Two Random Variables Section 2.3 in SW and Special Distributions Section 2.4 in SW
1/27 Random Sampling Section 2.5 in SW	1/29 Estimators Section 3.1 in SW
2/3 Hypothesis Testing Section 3.2 in SW	2/5 Sample Covariance and Correlation Section 3.7 in SW
2/10 Exam #1 Review	2/12 Exam #1
2/17 The Linear Regression Model Section 4.1 in SW	2/19 Estimating a Linear Regression Model Section 4.2 in SW
2/24 Measures of Fit and Prediction Accuracy Section 4.3 in SW	2/26 Statistical Properties of OLS Estimators Section 2.5 in W
3/3 Hypothesis Testing in Regression Section 5.1 in SW (and Chapter 5 appendix) AND Regression when $X$ is a Binary Variable Section 5.3 in SW	3/5 Changes in Units of Measurement Section 2.4 in W AND Transformations of $X$ and $Y$ Variables in Regression Section 8.2 in SW
3/10 Exam #2 Review	3/12 Exam #2
3/17 SPRING BREAK	3/19 SPRING BREAK
3/24 Multiple Regression Introduction Section 3.1 in W	3/26 Interpretation of Multiple Regression Parameters Section 3.2 in W
3/31 Multiple Regression Estimation Section 3.2 in W	4/2 Multiple Regression Estimation Section 3.2 in W

MONDAY	WEDNESDAY
<p>4/7 Measures of fit in Multiple Regression Section 6.4 in SW</p>	<p>4/9 Omitted Variable Bias Section 3.3 in W</p>
<p>4/14 Statistical Properties of Multiple OLS Estimators Section 3.3 in W</p>	<p>4/16 Dummy Variables in Multiple Linear Regression Section 8.3 in SW</p>
<p>4/21 Exam #3 Review</p>	<p>4/23 Exam #3</p>

## Academic Honesty

Students are expected to comply with the University of Florida's rules for academic honesty. Failure to comply with this commitment will result in disciplinary action.

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.

## Accommodations for Students with Disabilities

Students with disabilities requesting classroom accommodation must first register with the Disability Resource Center. The Disability Resource Center will provide documentation to the student who must then provide this documentation to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

## Online 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. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.ua.ufl.edu/students/>. 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 <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.ua.ufl.edu/public-results/>.

## 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/>.

## Class Attendance and Make-Up Exams

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click [here](#) to read the university attendance policies.

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.

## Generative Artificial Intelligence

The Department of Economics faculty assume that all work that is submitted for grading is written by the student whose name it bears, and that it represents their ideas and work. Accordingly, students are not permitted to use generative AI when completing assignments, quizzes, exams, or other graded work unless their instructor has expressly granted that permission. Unauthorized use of generative AI may constitute cheating and/or plagiarism. Such violations of the UF Student Honor Code will be reported to the UF Dean of Students Office and will be subject to severe sanctions.

Generative AI includes but is not limited to ChatGPT, DALL-E, and Google Bard.

## Resources

- **U Matter, We Care:** If you or a friend is in distress, please contact [umatter@ufl.edu](mailto:umatter@ufl.edu) or 352 392-1575 so that a team member can reach out to the student.
- **Counseling and Wellness Center:** <http://www.counseling.ufl.edu/cwc>, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.
- **Sexual Assault Recovery Services (SARS):** Student Health Care Center, 392-1161.
- **University Police Department** at 392-1111 (or 9-1-1 for emergencies), or <http://www.police.ufl.edu/>.