
ECO 3430 Economic Analysis of Data

| | | | |
|-----------------------|----------------------------------------------------|----------------------|------------------------|
| Semester: | Spring 2024 | Office Hours: | T,W 2:00 PM -3:00 PM |
| Instructor: | Douglas Turner | Office: | TBD |
| Email: | douglasturner@ufl.edu | Class Hours: | T,R 11:45 AM - 1:40 PM |
| TA: | TBD | Classroom: | MAT 0119 |
| Prerequisites: | ECO 2023, ECO 2013 and STA 2023 (or equivalent) | | |

Course Description

This course will explore the economic analysis of data using the R programming language. Students will learn how to access, clean and analyze economic data with the goal of uncovering causal relationships between variables. Topics include data cleaning and pre-processing, data visualization, simple linear regression, multiple linear regression, causality, machine learning and other topics. No prior knowledge of R is necessary before beginning the course.

Course Materials

While there are no required textbooks in this course, there are a variety of excellent textbooks covering data analysis in R and econometrics. For example:

- Joshua D Angrist and Jorn-Steffen Pischke. *Mastering 'Metrics: The Path from Cause to Effect*. Princeton University Press, 2014.
- Hadley Wickham, Mine Çetinkaya-Rundel, and Garrett Grolemund. *R for Data Science: Import, Tidy, Transform, Visualize, and Model Data*. 2nd Edition. 2023.
- Tilman M. Davies. *The Book of R: A First Course in Programming and Statistics*. 2016.
- Florian Oswald, Vincent Viers, Pierre Villedieu, and Gustave Kennedy. *Introduction to Econometrics with R*. SciencesPo Department of Economics, Paris, France, 2020.
- Rafael A. Irizarry, *Introduction to Data Science: Data Analysis and Prediction Algorithms with R*, 1st edition.

Exams

There will be three exams which are tentatively scheduled for 2/15, 3/21 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).

Grading

- There will be 11 assignments (assigned through a combination of Gradescope and canvas). There is no limit on the number of times assignments through Gradescope can be submitted. No late assignments are permitted.
- The grading scheme is

| Grading Scheme | | Final Grading Scale | | | |
|----------------|-----|---------------------|----------|----|----------|
| Assignments | 35% | A | 92-100 | C | 72-76.99 |
| Participation | 5% | A- | 90-91.99 | C- | 70-71.99 |
| Exam 1 | 20% | B+ | 87-89.99 | D+ | 67-69.99 |
| Exam 2 | 20% | B | 82-86.99 | D | 60-66.99 |
| Exam 3 | 20% | B- | 80-81.99 | E | 0-59.99 |
| | | C+ | 77-79.99 | | |

- Any curving will be at the discretion of the instructor.

Course Schedule

The below schedule is highly tentative.

| TUESDAY | THURSDAY | FRIDAY |
|-----------------------------------------------|--------------------------------------------------------------------|-------------------------------------------|
| 1/9 Course Introduction | 1/11 Economics Datasets and R Introduction | 1/13 Practice Assignment in Gradescope |
| 1/16 Economics Datasets and R Introduction | 1/18 Introduction to Data Analysis | 1/19 |
| 1/23 Introduction to Data Analysis | 1/25 Data Visualization | 1/26 Assignment 1 Due at 11:59 PM |
| 1/30 Data Visualization | 2/1 Data Visualization and Review of Probability and Statistics | 2/2 Assignment 2 Due at 11:59 PM |
| 2/6 Review of Probability and Statistics | 2/8 Review of Probability and Statistics | 2/9 Assignment 3 Due at 11:59 PM |
| 2/13 Exam #1 Review | 2/15 Exam #1 | 2/16 Assignment 4 Due at 11:59 PM |
| 2/20 Causality | 2/22 Causality and Simple Linear Regression | 2/23 |
| 2/27 Simple Linear Regression | 2/29 Multiple Linear Regression | 3/1 Assignment 5 Due at 11:59 PM |
| 3/5 Multiple Linear Regression | 3/7 Multiple Linear Regression | 3/8 Assignment 6 Due at 11:59 PM |
| 3/12 No Class: Spring Break | 3/14 No Class: Spring Break | 3/15 |
| 3/19 Exam #2 Review | 3/21 Exam #2 | 3/22 Assignment 7 Due at 11:59 PM |

| TUESDAY | THURSDAY | FRIDAY |
|-------------------------------------------------------------|-------------------------------------------------------------|---------------------------------------|
| 3/26 Additional Regression Topics: RDD & Diff-in-Diff | 3/28 Additional Regression Topics: RDD & Diff-in-Diff | 3/29 |
| 4/2 Additional Regression Topics: RDD & Diff-n-Diff | 4/4 Miscellaneous Topics | 4/5 |
| 4/9 Miscellaneous Topics | 4/11 Machine Learning | 4/12 Assignment 8 Due at 11:59 PM |
| 4/16 Machine Learning | 4/18 Exam #3 Review | 4/19 Assignment 9 Due at 11:59 PM |
| 4/23 Exam #3 | 4/25 No Class: Reading Day | 4/26 Assignment 10 Due at 11:59 PM |

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.aa.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.aa.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.

Resources

- **U Matter, We Care:** If you or a friend is in distress, please contact 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/>.