

ECO 5435: Economic Data Analysis

Syllabus

Instructor: Prof. Hector H. Sandoval
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MAT 325
Office hours / Q&A discussion: via Zoom Tuesday 10:00 am - 12:00 pm

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MAT 341
Office hours: via Zoom Wednesday 2:00 - 4:00 pm

Course Description & Purpose

This course will provide students with a comprehensive overview of data management, exploring, and analysis. It is designed to serve as a bridge between economic theory, statistics/econometrics, and practical work. The emphasis throughout the class will be placed on providing hands-on experience with data analysis using Stata. The course will use actual individual- and aggregate-level data, with particular attention paid to the United States and Florida economies. The individual-level data (microdata) will come from ongoing surveys, including the American Community Survey (ACS), which provides information on demographics, housing, economics, and other topics; the Panel Study of Income Dynamics (PSID), which gathers data on the family as a whole and on individuals residing within the family, emphasizing the dynamics and interactive aspects of family economics, demography, and health; as well as other datasets. The aggregate-level data will come from federal agencies, such as the Bureau of Economic Analysis (BEA), Bureau of Labor Statistics (BLS), and the Federal Reserve Economic Data (FRED), among others. At the end of the course, students will know how to use real-world data to perform statistics and econometric analyses.

Students should be comfortable with introductory statistical concepts covered in STA 2023 (or equivalent). Training with Stata will be provided in this course.

Course Delivery

ECO 5435 will be delivered online asynchronously. The material for the course, which consists of (i) Lectures notes (slides), (ii) Datasets, (iii) Stata code (do files), and (iv) recorded lectures will be posted on Canvas weekly (typically at the beginning of the week). Although the material will be available for the remainder of the course, you are encouraged to stick to the schedule that is laid out in Canvas. The recorded lectures will teach you how to use Stata through UF Apps: <https://info.apps.ufl.edu/>. Students are responsible for addressing any technical problem using UF Apps.

Office hours and a Q&A discussion will take place on Tuesday between 10:00 am and 12:00 pm via Zoom (links will be posted on Canvas). The first hour, 10:00 am - 11:00 am, will be dedicated to individual private meetings (office hours), while the second hour, 11:00 am - 12:00 pm, will be reserved for questions about the course material where all students are encouraged to join the conversation and ask questions. Although it is not a course requirement, you are all strongly encouraged to attend the latter. These meetings are intended to promote student-instructor and student-student interactions and will **not** be recorded.

Exams, Assignments & Grading

Grades will be distributed as follows: assignments 40%, online quizzes 20%, take-home midterm 20% (**Tuesday March 2nd, 2021**), and final project 20% (due on **Thursday April 29th, 2021**).

All of the assignments will require the use of Stata. For the assignments, you are encouraged to collaborate with other students, but you should submit your own individual problem sets for grading. Problem sets submitted after the deadline are **not** accepted. Assignments will be regularly posted on Thursday (evening) and will be due the next Thursday (morning). The number of points allocated to each assignment will depend on its difficulty.

The online quizzes will be based entirely on the lecture notes (slides) and prerecorded videos. Each quiz will be available for one whole week, which is more than enough time to complete it, hence no extensions or exemptions will be granted. For the quizzes, you are not allowed to collaborate with other students.

The final project will involve writing a short empirical research paper using the tools learned in class. You may work in groups of two or three for the final project. Additional information about the project will be provided after the midterm.

Letter grades will be determined as follows: [0-60) E; [60-70) D; [70-77) C; [77-80) B-; [80-85) B; [85-90) B+; [90-92) A-; [92-100] A. Note that 92.0 is A, while 91.99 is A-.

Lecture Notes & Textbooks

The main materials for this course will be available on Canvas, thus no textbook is required. Nonetheless, the following textbooks are useful references for data analysis and Stata. Some of the lecture notes will be based on them.

- Daniels, L. & Minot, N. (2019) An Introduction to Statistics and Data Analysis Using Stata. Sage, 1st Edition.
- Freedman, D., Pisani, R., & Purves, R. (2007). Statistics. W. W. Norton & Company, Inc., 4th Edition.
- Mehmetoglu, M., & Jakobsen, T. G. (2016). Applied Statistics Using Stata: A Guide for the Social Sciences. Sage. Online resources: study.sagepub.com/mehmetogluandjakobsen
- Stock, J. H., & Watson, M. W. (2019). Introduction to Econometrics. Pearson 4th Edition.
- Weinberg, S. L., & Abramowitz, S. K. (2020). Statistics using Stata: An integrative approach. Cambridge University Press, 2nd Edition.

The textbooks by Daniels & Minot (2019), Mehmetoglu & Jakobsen (2016), and Weinberg & Abramowitz (2020) provide a comprehensive introduction to statistics and data analysis using Stata. The book by Freedman is a good introduction to Statistics that covers fundamentals using real examples to illustrate the techniques. Stock & Watson is an introductory econometrics textbook that reflects modern theory and practice.

In addition, Stata has an extensive array of online resources: www.stata.com/learn/ and www.stata.com/features/.

Another important online resource to learn how to use Stata (or other common statistical package) for the analysis of data is the UCLA Institute for Digital Research & Education: <https://stats.idre.ucla.edu/ucla/about/>.

Policies

Make-Up Policy

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies that can be found at: <https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>.

Students Requiring Accommodations

Students with disabilities requesting accommodations should should connect with the disability Resource Center by visiting <https://disability.ufl.edu/students/get-started/>. Once registered, students will receive an accommodation letter which must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

University Honesty Policy

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 (<https://www.dso.ufl.edu/sccr/process/student-conduct-honor-code/>) specifies a number of behaviors that are in violation of this code and the possible sanctions. 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.

Digital Millennium Copyright Act (DMCA) Notice

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Course Outline & Schedule (subject to change)

TUESDAY	THURSDAY
Jan 12th Lecture 0: Introduction to Data Analysis & Stata	14th Lecture 1: Cross-sectional data (Gross domestic product)
19th Lecture 2: Handling time-series (Population) <i>Quiz #1 due (at noon)</i>	21st
26th Lecture 3: Panel data (Labor market) <i>Quiz #2 due (at noon)</i>	28th <i>Assignment #1 due (at noon)</i>
Feb 2nd Lecture 4: FRED (Housing market) <i>Quiz #3 due (at noon)</i>	4th Lecture 5: Sampling <i>Assignment #2 due (at noon)</i>
9th Lecture 6: Inference: hypothesis testing <i>Quiz #4 due (at noon)</i>	11th <i>Assignment #3 due (at noon)</i>
16th Lecture 7: Bivariate analysis (Consumption & confidence) <i>Quiz #5 due (at noon)</i>	18th <i>Assignment #4 due (at noon)</i>
23rd Lecture 8: Economic growth <i>Quiz #6 due (at noon)</i>	25th
Mar 2nd Lecture 9: Bivariate regression	4th <i>Midterm due (at noon)</i>
9th Lecture 10: Multiple regression <i>Quiz #7 due (at noon)</i>	11th <i>Assignment #5 due (at noon)</i>
16th Lecture 11: Regression diagnostics <i>Quiz #8 due (at noon)</i>	18th <i>Assignment #6 due (at noon)</i>
23rd Lecture 12: Logit & probit models (Home mortgage) <i>Quiz #9 due (at noon)</i>	25th <i>Assignment #7 due (at noon)</i>
30th Lecture 13: American Community Survey (ACS) <i>Quiz #10 due (at noon)</i>	Apr 1st <i>Assignment #8 due (at noon)</i>
6th Lecture 14: Panel Study of Income Dynamics (PSID) <i>Quiz #11 due (at noon)</i>	8th <i>Assignment #9 due (at noon)</i>
13th Lecture 15: Causality & RCT <i>Quiz #12 due (at noon)</i>	15th <i>Assignment #10 due (at noon)</i>
20th Lecture 16: Maps, web scraping, & more	22nd NO CLASS
27th NO CLASS	29th <i>Final project due (at midnight)</i>