ECO 5435: Economic Data Analysis
Syllabus

Instructor:	Prof. Hector H. Sandoval
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	MAT 325
	Office hours: Wednesdays, 11:45 am - 1:40 pm (MAT 325)
TA:	Pedro de Sousa Almeida
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	MAT 341
	Office hours: TBD (MAT 341)

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 Residential Energy Consumption Survey (RECS), which collects energy characteristics on the housing unit, usage patterns, and household demographics; 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.

Class Schedule & Other Information

Lecture: Mondays & Wednesdays, Periods 3-4 (9:35 am - 11:30 am), Room MAT 114.

Class announcements will usually be made in class as well as through Canvas. You are responsible for all the information provided through both of these channels of communication. The material for the course, which consists of lectures notes (slides), datasets, and Stata code (do files), as well as the quizzes and assignments will be posted on Canvas weekly.

Office hours will take place on TBD (de Sousa Almeida, MAT 341) and Wednesday (Sandoval, MAT 325) between 11:45 am and 1:40 pm.

Exams, Assignments & Grading

Grades will be distributed as follows: *assignments* 40%, *online quizzes* 10%, *participation* 5%, *take-home midterm* 25% (posted on **Wednesday March 1st, 2023** and due on **Wednesday, March 8th, 2023**), and *final project* 20% (due on **Wednesday May 3rd, 2023**).

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

The online quizzes will be based solely on the lecture notes (slides). 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 consist of 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-. Final course grades will not be rounded.

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.

- Cameron, A. C., & Trivedi, P. K. (2013). Regression analysis of count data. Econometric Society Monograph No.53, Cambridge University Press, 2nd edition.

- 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: https://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. Cameron & Trivedi is a textbook that describes regression methods for count data, where the response variable is a non-negative integer.

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/.

Course Outline & Schedule (subject to change)

MONDAY	WEDNESDAY
Jan 9th **Lecture 0: Introduction to Data Analysis & Stata**	11th **Lecture 1: Cross-sectional data (GDP)**
16th Holiday - NO CLASS	18th **Lecture 2: FRED (Housing market)**
23rd **Lecture 3: Handling time-series (Population)** *Quiz #1 due (at noon)*	25th *Assignment #1 due (at noon)*
30th **Lecture 4: Panel data (Labor market)** *Quiz #2 due (at noon)*	Feb 1st *Assignment #2 due (at noon)*
6th **Lecture 5: Inference: hypothesis testing** *Quiz #3 due (at noon)*	8th *Assignment #3 due (at noon)*
13th **Lecture 6: Bivariate analysis (Consumption & confidence)** *Quiz #4 due (at noon)*	15th *Assignment #4 due (at noon)*
20th **Lecture 7: Economic growth** *Quiz #5 due (at noon)*	22nd *Assignment #5 due (at noon)*
27th **Lecture 8: Bivariate regression** *Quiz #6 due (at noon)*	Mar 1st **Lecture 9: Multiple regression** *Take-home midterm posted*
6th **Lecture 9: (continue)** *Quiz #7 due (at noon)*	8th *Midterm due (at midnight)*
13th Spring Break - NO CLASS	15th Spring Break - NO CLASS
20th **Lecture 10: Regression diagnostics**	22nd *Assignment #6 due (at noon)*
27th **Lecture 11: Logit & probit models (Home mortgage)** *Quiz #8 due (at noon)*	29th *Assignment #7 due (at noon)*
Apr 3rd **Lecture 12: Basic count regression** *Quiz #9 due (at noon)*	5th *Assignment #8 due (at noon)*
10th **Lecture 13: Causality & RCT** *Quiz #10 due (at noon)*	12th *Assignment #9 due (at noon)*
17th **Lecture 14: American Community Survey (ACS)** *Quiz #11 due (at noon)*	19th *Assignment #10 due (at noon)*
24th **Lecture 15: Residential Energy Consumption Survey**	26th
May 1st NO CLASS	3rd *Final project due (at midnight)*

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 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/.

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.

Recording Policy

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.

Publication without permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.