ECN 102: Analysis of Econ Data Summer Session 1 2024

Instructor: Remy Beauregard Contact: rebeauregard@ucdavis.edu Lecture time: *MTW* 12:10-1:50pm Lecture location: Olson Hall 250

Class support:

Canvas link: here Office hours: *MW* 2-3pm OH location: SSH 120 Section times: <u>A01</u> *R* 10-11:40am <u>A02</u> *R* 12:10-1:50pm Section location: Hutchinson Hall 93 Teaching assistant: Jaejun Yoon TA email: jaeyoon@ucdavis.edu TA office hours: *T* 10am-12pm TA OH location: SSH 120

Class description: Analysis of economic data to investigate key relationships emphasized in introductory micro and macro economics. Obtaining, transforming, displaying data; statistical analysis of economic data; basic univariate and multivariate regression analysis.

Course goals: This class aims to provide both a theoretical and applied understanding of how variables and the relationships between variables are analyzed in Economics. We will use the standard statistical software *Stata* to read, clean, visualize, and analyze data. The class serves as a bridge between introductory statistics courses and more advanced courses in Econometrics (e.g. ECN 140, 141). Students should expect to participate in lectures through knowledge check exercises and attend sections to gain familiarity with Stata.

Prerequisites: ECN 1A-B, Statistics 13 or 32, Math 16A-B; or Consent of Instructor.

Course materials: I plan to use Colin Cameron's book *Analysis of Economics Data: An Introduction to Econometrics* (2022), available on Amazon as a physical copy or Kindle download. Chapters 1-4 are available free here. Please see the tentative class outline below for topics and associated chapters and plan to read these *before* each lecture. I also plan to post blank lecture slides ahead of each class; students can expect to download and annotate these slides to take notes. Completed lecture slides will then be posted following each class. However, **lectures will not be recorded**, so attendance is critical! **Stata:** The main statistical software we will use for this class, Stata, is unfortunately locked behind a paywall, meaning you will not be able to freely access it on your own computer. However, many campus resources exist to access Stata free of charge. Two labs in the basement of Hutchinson Hall, 75 and 93, have computers that are equipped with Stata. The availability of these rooms can be checked here. Stata is also now available in SCC lab 2101, *M-R* 8:30-8pm; *F* 8:30-6pm. After hours, Stata can be accessed remotely using the IET virtual lab, available here. Please contact me or your TA if you are having issues connecting to Stata. The final access option is purchasing a Stata license for your private machine, but you should not feel at all pressured to do so. If you do choose to purchase Stata, you can get started here.

Assignments and grading: A breakdown of the assignments in this class and their associated weighting for your final class grade is below:

- Attendance and knowledge check exercises (10%): To ensure that students are regularly attending lecture and engaging with course material, each class will feature an interactive knowledge check exercise that students will complete and submit to Canvas after the class. These will be graded on effort not accuracy, but serve as good practice questions for exams. I will drop up to two missing knowledge checks for the quarter.
- Homework (10%): Four homework assignments will ask you to apply the theoretical concepts from class to analysis of actual data using Stata. Homework problems will be discussed in section each Thursday and then are due on Canvas at the end of each week on Friday at 11:59pm. Late homework will not be accepted. Homework will be graded on completion, with full marks given for all submissions that reasonably attempt at least 50% of questions.
- Stata quiz (20%): As familiarity with the Stata software is a critical component of this class, we will have a Stata quiz given during discussion section on 7/25 that will test student knowledge of data processing, visualization, and analysis. This quiz will be closed-note, but students will have access to all posted homework solutions from submitted assignments.
- Midterm exam (25%) and final exam (35%): The midterm will take place on 7/10 and the final on 7/31 in class. Both exams will be cumulative and closed-book. It is your responsibility to be aware of these dates and any potential conflicts. If you will need to miss the midterm exam, you must notify me *at least one week before the exam* and give a valid reason for your absence. I reserve the right to accept or reject your petition to miss the midterm exam. In the case that missing the midterm exam is accepted by me, the weight of that exam in your final grade will be added to your final exam. There are no makeup exams in this class. Missing the final exam for any reason will result in failure of the class.

Regrading policy: Scores for each exam will be available on Canvas within one week of the exam date. In addition, your exam pdf and the grading rubric for each question will be available on Gradescope with points earned/lost. If you feel you were graded incorrectly, you have *one week from when exam scores are released* to contact your TA with a regrade request. It is up to the discretion of the TA whether or not these points will be awarded following a regrade request. If necessary, I reserve the right to make the final decision over the allocation of make-up points. No regrade requests can be accommodated after the one-week window elapses.

Final grades: Any curving or rescaling of the grade distribution for this class will not be done until all assignments are submitted and evaluated. There is no hard limit on the distribution of grades in this class, but I expect the class average to fall between 80-85%. Prior to all assignments being graded, however, I cannot provide any intuition as to the letter grade associated with any percentage grade. Instead, I encourage all students to compute their z-score following the midterm exam as a signal of their performance in the class: a positive z-score would indicate you are outperforming the average, while a negative z-score would suggest you may be falling behind.

Special accommodations: If you have any form of disability, difficulty understanding English, or other extenuating circumstance you feel will prevent you from doing your best in this class, please meet with me during the first week of class to discuss appropriate arrangements. Any student registered to take their exams through SDC should expect to do so.

Cheating: I have a zero tolerance policy for work submitted that is not your own. This includes but is not limited to: submitting work from another student as your own, submitting work from an external source without proper citation, and submitting work produced by generative AI (e.g. ChatGPT). If I find you have engaged in any form of cheating or academic misconduct on any assignment or exam, you will received a **zero** for that assignment or exam. I also fully reserve the right to submit instances of cheating to student judicial affairs for review and discipline. Please see the full UC Davis Code of Academic Conduct here.

Discord: Our class has a discord server to facilitate peer collaboration and streamline the process of asking questions; please ask me for a new invite link if it has expired. However, be aware that all material posted in the server must be class-appropriate and that any inappropriate messages or content will result in a warning or ban. I reserve the right to determine what material may or may not be appropriate for the server. While working together on assignments is encouraged, you may not submit complete answers or finished assignment files for other students to copy. Please also do not private message (PM) instructors on the platform, and instead use the Canvas messaging feature to contact me or your TA privately.

Course schedule: Broadly, this class is broken down into four main components:

- (a) Introduction: what we can do with data
- (b) Univariate analysis: analysis of a single variable (ch. 1-4)
- (c) Bivariate analysis: the relationship between two variables (ch. 5-9)
- (d) Multivariate analysis: the relationship(s) between several variables (ch. 10-15)

A tentative schedule of topics and associated textbook chapters for each week are below:

Week 1: 6/24, 6/25, 6/26

introduction, descriptive statistics and data visualization; the sample mean: chapters 1+2+3 hw1 due 6/28 at 11:59pm

Week 2: 7/1, 7/2, 7/3

univariate inference; bivariate data introduction, the least-squares estimator: *chapters* 4+5+6 hw2 due 7/5 at 11:59pm

Week 3: 7/8, 7/9, 7/10

bivariate inference: *chapter* 7 additional practice: *chapter* 8 review session 7/8 in class **midterm exam** 7/10 in class - ch. 1-7 no hw due

Week 4: 7/15, 7/16, 7/17data transformations for bivariate regressions; multiple regression: *chapters* 9+10hw3 due 7/19 at 11:59pm

Week 5: 7/22, 7/23, 7/24 multivariate inference; indicator variables: *chapters* 11+12+14 additional practice: *chapter* 13 **stata quiz** 7/25 in section hw4 due 7/26 at 11:59pm

Week 6: 7/29, 7/30, 7/31

data transformations for multivariate regressions: *chapter 15* review session 7/30 in class **final exam** 7/31 in class - ch. 1-15 no hw due