University of Colorado Denver

Brian Duncan (brian.duncan@ucdenver.edu) Fall 2023
Economics 5813-1 TTH 5:00 – 6:15 (NC 3202)

Econometrics I

Syllabus

Office: LW-470D (Lawrence Street Center).

Office Hours: Tuesdays and Thursday from 2:00 to 3:00 p.m., or by appointment.

Canvas: Course material will be posted on canvas. Check the Canvas course page often. In Canvas, under "Account – Notification," make sure that you have "Announcement" email notifications set as "Notify me right away" (i.e., the green checkmark).

TA: Yuxin Cai, Master's Student, CU Denver.
Office hours will be posted on Canvas.

Textbook: Introductory Econometrics: A Modern Approach, 6th edition, by Jeffrey M. Wooldridge, ISBN: 978-1305270107, *required*. You only need the "standalone book". There is a 7th edition of this book, but it is much more expensive. You may use the 5th edition, which is available online as a PDF, but I will be citing page numbers from the 6th edition.

Mastering 'Metrics: The Path from Cause to Effect, by Joshua D. Angrist and Jörn-Steffen Pischke, ISBN-13: 978-0691152844, *required*.

Other useful textbooks include Introduction to Econometrics, by Maddala (MacMillan), and Introductory Econometrics with Applications, by Ramanathan (Harcourt Brace Jovanovich). Students interested in more advanced topics should consider Econometric Methods by Johnston (Mc Graw-Hill) and Mostly Harmless Econometrics: An Empiricist's Companion, 1st edition, by Joshua D. Angrist and Jörn-Steffen Pischke.

Prerequisites: This course assumes that students enter with a basic knowledge of calculus, matrix algebra, probability and statistics. However, I will assume that everyone needs to review these concepts and much of this review we will do together. Although part of the course is devoted to teaching students how to use statistical software, students are expected to be proficient at operating a computer. The primary statistical software used in this course is Stata. If you feel you may be deficient in any of these areas, you should contact me as soon as possible.

Learning Outcomes: Econometrics is the application of statistical techniques to analyze economic problems. This course is an introduction to the fundamental tools of econometrics. Upon completing the course, successful students

will be able to formulate econometric models, manage data and estimate regressions using Stata, and interpret results (sign, significance, and magnitude). Successful students will understand probability and sampling distributions, hypotheses testing, causal inference, instrumental variables, logit/probit, and maximum likelihood regressions.

Problem Sets: Problem sets will be assigned each week. Later in the semester, students will be assigned both problem sets and project assignments, usually on alternating weeks. I encourage students to discuss the problems with each other, but **every student must turn in his or her own work**. The problem sets will be posted online when they are assigned. Solutions will be posted after they are due. Late problem sets will not be accepted.

Project Assignments: Students will extract and use data from The Integrated Public Use Microdata Series (IPUMS-USA) website to complete written project assignments. The project assignments will require students to create tables, estimate regressions, perform hypothesis tests, and write conclusions using their own unique data set. At the beginning of the course, each student will select an occupation he or she is interested in studying and writing about. The individual level data available at IPUMS-USA is large enough so that each student can select a specific occupation and still retain a large sample. Throughout the semester, students will apply the various statistical techniques covered in lecture to their individual data and write-up the results. Because all of the data sets will contain the same variables, students will be able to work together. However, because each data set is a unique sample of individuals, each student will be required to **write their own code** and do their own work.

Grades: Grades will be based on two midterm exams scheduled for **September 21** and **November 2** (20% each), final exam scheduled during finals week (30%), and problem sets (10%), Project Assignments (20%). Exam dates are subject to change. No make-up or early exams will be given without a legitimate documented excuse (i.e., funeral, illness or injury, family emergency, official university activity, or military duty). Business trips and family travel (including international travel, weddings, etc.) are not legitimate excuses.

Attendance Policy: You are required to attend all classes and to show-up on time. If you miss more than 4 classes your grade will be dropped one-half letter grade. If you miss more than 6 classes, the highest grade you can earn in the course is a "C". Arriving more than 10 minutes late will count as missing ½ class. Arriving more than 20 minutes late will count as missing the entire class. You are responsible for learning all of material covered in class, including any classes you may miss. Office hours are for answering specific questions about course material that a student has spent time thinking about, working on, and struggling with, beforehand. Office hours will not be used to give make-up lectures or for a review session.

Communication: In addition to announcements made and written handouts distributed in class, I may need to contact you between classes, which I'll do through individual and group email messages and announcements on Canvas. **One of the requirements for this course is that you maintain your ucdenver.edu email address, check it regularly for messages**. You are responsible for any messages, including assignments and schedule changes, I send you via email.

You are welcome to contact me via email. However, do not expect a response to any email sent on a scheduled test day, or the day before a test day, until after the exam. **Also, please do not email questions about course material that require a lengthy reply.** Instead, bring these questions to office hours or wait to ask them during class. If you would prefer not to ask a question in class, or feel that you can be more precise in writing, then you may ask an "in class" question by email. I will answer the question in the next class if I believe the discussion will be helpful to other students. If not, I will ask you to come to my office hours.

Academic Ethics: In this course, every student is required to complete his or her own homework and project assignments. Two students may not submit the same homework or research project for credit. The submission of the same work by multiple students, or submitting what is essentially the same work for credit in multiple courses (when such submission is made without the instructor's authorization), is a violation of CU Denver's Academic Ethics Policy. Students are expected to know, understand, and comply with the ethical standards of the university, including rules against plagiarism. Plagiarism is the use of another person's ideas or words without acknowledgment. The incorporation of another person's work into yours requires appropriate identification and acknowledgment. The following are considered to be forms of plagiarism when the source is not noted: word-for-word copying of another person's ideas or words; the "mosaic" (interspersing your own words here and there while, in essence, copying another's work); the paraphrase (the rewriting of another's work, while still using their basic ideas or theories); fabrication (inventing sources, data, or results); submission of another's work as your own; and neglecting quotation marks when including direct quotes.

Tips for Success: There are several things that you can do to help you succeed in this course. The first is to attend all lectures. Missing a lecture, or showing up late, is simply not a good option. Another thing you can do to help you succeed is to work in study groups. You should meet regularly with your classmates to discuss class readings, lectures, and homework. Finally, keep current on all reading assignments and homework. Much of the material we will cover is not difficult when learned one step at a time. Trying to learn all of the material just before an exam is a recipe for failure.

Access & Disability: The University of Colorado Denver is committed to ensuring the full participation of all students in its programs, including students with disabilities. If you have a disability or think you may have a disability and need accommodations to succeed in this course, I encourage you to contact Disability Resources and Services (DRS) and/or speak with me as soon as you can. DRS is located in the Student Commons Building, Suite 2116, and at disabilityresources@ucdenver.edu. I am committed to providing equal access as required by federal law, and I am interested in developing strategies for your success in this course.

Policies & Deadlines: All students are required to read and follow the policies, procedures, and deadlines in the CLAS Academic Policies and Deadlines found at the links below. All information posted on the following pages are considered part of this syllabus.

https://www.ucdenver.edu/student/calendars/academic/fall

https://clas.ucdenver.edu/faculty-staff/content/academic-policies

Exceptions to the course policies may be made on an individual or class basis at the instructor's discretion. A request for an exception must be made well in advance.