

Economics 120B
Econometrics, Winter 2023
Prof. Dahl, UC San Diego

Description: This course prepares students for empirical analysis in an academic or business setting. It covers the fundamentals of regression, including estimation and hypothesis testing in a univariate and multivariate framework. It presents ideas using the “potential outcomes” framework and makes the important distinction between prediction and causality. The course discusses reasons why estimators may be biased or inconsistent, and how both randomized experiments and natural experiments can be used to obtain causal estimates.

The material can be difficult and the workload substantial, particularly for those who find math courses challenging. However, your payoff for all this work is a set of skills, analytical tools, and ways of thinking about data that are extremely useful and in high demand in the marketplace.

Important Dates and Times:

Class: Tuesdays and Thursdays, 8 – 9:20 am (location: 101 CENTR)

Review Sessions: Wednesdays 8 – 8:50 am and 4 – 4:50 pm (location: CENTR 105)

Midterm: Thursday, February 14 in class

Final: Thursday, March 23, 8 – 11:00 am

Class: Tuesdays and Thursdays, 11:00 – 12:20 pm (216 CENTR)

Review Session: Wednesdays 12 – 12:50 pm and 1 – 1:50 pm (location: CSB 5)

Midterm: Thursday, February 14 in class

Final: Thursday, March 23, 11:30 – 2:30 pm

Class will be held in person (unless covid restrictions are put in place). Class lectures will not be recorded; if you miss a class, the best option is to find a classmate who can share notes and fill you in on what you missed and/or to visit a TA during office hours for extra help.

Instructor: Gordon Dahl

Office hours: Thursdays, 9:30 – 10:45 am

email: eco120b@gmail.com

(please do not use the email built into canvas, as I do not regularly monitor it)

To meet with me during office hours, use the following zoom link. You will be placed in a waiting room, and I will let you in to the zoom meeting as soon as I am finished talking to students who arrived before you.

Zoom link: <https://ucsd.zoom.us/j/8582165320>

If you prefer to meet me in person, you can also stop by my office during office hours (ECON 324), but please email me at least one day in advance so that I can make sure to be physically in my office (using the class email: eco120b@gmail.com).

Feel free to stop by virtually or in person so that I can get to know you. As this is a large class, I will prioritize speaking with students about things which the TAs cannot help with, such as personal challenges, strategies to do better in the course, graduate school options, etc. In other words, while I am happy to talk about homework, if there are any students needing to talk about other things, then they will jump to the front of the queue.

Graduate Teaching Assistants: Santiago Cantillo, Torsha Chakravorty, Tanner Eastmond, Kurtis Gilliat
Graduate Grading Assistant: Haitian Xie
Undergraduate Instructional Assistants: Nathan Chu, Weiyue Li

The graduate TAs are a valuable resource, and I encourage you to take advantage of their help during their office hours. This is an excellent resource for help in understanding course content, homework assignments, and the Stata programming package. If you have a general question about the class, rather than a specific question about content, homework, or Stata (which you should ask about during TA office hours), please use the class email eco120b@gmail.com. A graduate TA will monitor this email, and forward anything which they cannot answer to me. Please do not use the email built into canvas, as it will not be regularly monitored.

The undergraduate assistants are also a great resource. They will also be holding office hours and I encourage you to take advantage of their help. They have recently taken the class, and so have a first-hand perspective about the types of questions you might have and are well-prepared to answer homework and class questions.

Details on the office hours of the TAs and UIAs will be announced in Canvas. Most office hours will be via zoom, but some will be in person. TA and UIA office hours will start on Tuesday, January 10.

Review Sessions: There are 4 in-person review sessions each week which will be conducted by a graduate TA (see times and locations above). The weekly review sessions will normally focus on helping students get started on the homework, but will also occasionally review topics covered in class and help prepare for exams. The review sessions will not be recorded. You may attend any of the review sessions, regardless of the review session time you are officially registered for. Each of the review sessions will cover essentially the same material.

There are no review sessions on February 15 (the day after the midterm).

Class Web Site: canvas.ucsd.edu

The class web site contains the syllabus, lecture notes, homework assignments, and class announcements. You should check it regularly as you are responsible for any information posted there in addition to any announcements made in class.

Text and Online Videos: For this course we will be using both a textbook and online videos. The two are not always substitutes for each other. For some class topics the videos are the better resource, while for others the textbook is better. I will make sure to point students to the most appropriate resource during class lectures.

Text: The textbook is the Pearson eBook *Introduction to Econometrics, 4th Edition* by Stock and Watson. The eBook access for the course is being delivered through RedShelf on the class webpage. The UCSD Bookstore has not provided information this year on specific details, but here is the information they provided last year for how this works:

Your digital course materials are provided by the UC San Diego Bookstore through Canvas and are free for the first two weeks of classes. After two weeks, your student account will be charged a special reduced price unless you opt out. If you decide to opt out you must complete the process

by January 15th, 2021 (this date will be different this year, but I do not know it) and you will be responsible for sourcing the materials elsewhere.

For any questions about billing please contact textbooks@ucsd.edu.

For any questions about using your eBook please reference [RedShelf Solve](#).

To opt-out, go to the RedShelf link in Canvas and click "OPT-OUT"

EVH Videos: We will also be using the Econometrics Video Handbook (EVH), a series of videos developed and maintained by Professors Brendan Beare, Eli Berman, Graham Elliot, Gordon Dahl, Yixiao Sun, Kaspar Wuthrich, Joel Watson, and Melissa Famulari of the University of California San Diego, in conjunction with IT Services Educational Technology at UC San Diego and funded by an Innovative Learning Technology Initiative grant from the Office of the President of the University of California (Melissa Famulari and Joel Watson, Co-Principal Investigators).

You can access the EVH as a module on the class web page. There is no charge to access these videos as part of this course.

Software: Part of the course involves learning to use a software package called *Stata*. *Stata* is essential for problem sets, so you need to be able to access *Stata*.

UCSD maintains a site license so that students can download and install *Stata* on their own computer for free. We will provide details on how to do this as a separate announcement on Canvas.

You can also lease a copy of *Stata* to install on your own computer for a small fee (but there is no particular reason to do this since UCSD has a free site license):

<http://www.stata.com/order/new/edu/gradplans/student-pricing/>

If you would like a book to help you learn *Stata*, a good suggestion is *A Gentle Introduction to Stata, Revised Sixth Edition*, by Acock. However, this book is not required for the course. There are also many online sites devoted to helping individuals learn *Stata*. For a list, see:

<https://www.stata.com/links/resources-for-learning-stata/>

Homework: Homework is an integral part of this course, because the best way to learn econometrics is to do it. I will periodically assign problem sets throughout the semester. These assignments will be posted on the web, and it is your responsibility to check the class web page regularly. Homework assignments will generally be due about 6 days later.

Your homework needs to be turned in on Canvas **before midnight** (i.e., by 11:59 pm) on the due date. Neither late nor emailed homework will not be accepted. You must scan your answers into a single pdf file and upload the file to Canvas.

You are allowed to miss one homework without penalty, as I will drop the lowest score before calculating the homework portion of your grade. The tradeoff for this benefit is that I will be strict about not accepting late homework. The lone exception is if you have a documented case of covid and this prevents you from completing a homework assignment on time. In this case, you need to send an email to eco120b@gmail.com and receive permission to turn in the homework late (this must be done prior to the due date).

Homework will be graded on a two-point scale. A score of 1 will be given to homework which has made substantial progress, but is incomplete. A score of 2 will be given to homework which attempts to answer all of the assigned problems, including any *Stata* questions.

Students can work together on problem sets, although solutions must be written up and handed in separately (including any *Stata* output). It is a good idea to attempt the problems on your own before meeting with a group. While you can collaborate with others, any homework you turn in must represent your own work.

Solution keys to the homework will be posted on the class web page. It is a good idea to check your answers versus the solution key so that you can figure out which questions you need to understand better.

Tests: There will be a midterm and a final exam. You must take both the midterm and the final exam at the scheduled time for the class you are registered for (see dates and times listed earlier in the syllabus). There will be no make-up exams, and any conflicts or emergencies should be approved by me in advance of the exams. In case of illness or accident at the time of the midterm – with proper documentation from, for example, a doctor – the final will be weighted 90%.

Details on the administration of the exams will be discussed in class.

Grades: The following weights will be used to determine your course grade:

Homework: 10%

Midterm exam: 40%

Final exam: 50%

Grading Policy: If you think a mistake was made in grading your exam, you may ask for a regrade. You should submit your regrade request via Canvas within 7 days after exam scores are posted. Note that unless your answer is fully correct, the assignment of partial credit is a matter of judgment, and we are unlikely to change your grade since we want to treat all class members fairly. From past experience, most regrade requests do not result in a grade change.

Cheating: Cheating will not be tolerated in this class. If you are caught cheating, helping someone else cheat, or plagiarizing on an exam or homework, you will be penalized. One possible penalty is a failing grade in my class. Further details on what constitutes cheating will be posted on Canvas before the midterm and final. We will also discuss this in class, so that there is no confusion.

Miscellaneous: Disabilities will be accommodated; contact the office of undergraduate student affairs in Sequoyah Hall 245. For all matters regarding dropping or adding the course, waitlists, etc., please contact the office of student affairs or use the online resources provided by the university. If you have any further questions please feel welcome to email eco120b@gmail.com or come talk during virtual office hours.

Covid-Related Caveat: Normally, I consider the syllabus my contract with the class. However, this quarter some flexibility might be needed due to the uncertainty related to the pandemic. My current prediction of assignments, tests, how I will assess you in this course, etc. is listed above. While I will do what I can to adhere to this prediction, this unique and evolving situation may make it necessary for me to make changes. If that happens, I will inform you as early as possible and explain as best as I can the rationale behind any changes.