

Economics 120B
Econometrics, Winter 2022
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, 8:00 – 9:20 am
Review Sessions: Fridays 11:00 – 11:50 am (alternating weeks – see explanation below)
Midterm: Friday, February 4, 8:00 – 9:20 **pm**
Final: Saturday, March 19, 11:30 – 2:30 pm

Class: Tuesdays and Thursdays, 9:30 – 10:50 am
Review Session: Fridays 8:00 – 8:50 pm (alternating weeks – see explanation below)
Midterm: Friday, February 4, 8:00 – 9:20 **pm**
Final: Saturday, March 19, 11:30 – 2:30 pm

Due to covid restrictions, class will initially be held via zoom. I will send an announcement to the class if classes switch to being held in person. If a class is held via zoom, I will post a recording on Canvas, but note that this can take several hours to be processed and posted. If a class is held in person, it will not be recorded.

Instructor: Gordon Dahl

Office hours: Tuesdays, 11:00 – 12:00 pm

Due to covid restrictions, office hours will initially be held via zoom. I will send an announcement to the class if office hours switch to being held in person.

To meet with me during virtual 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>

email: eco120b@gmail.com

Graduate Teaching Assistant: Kurtis Gilliat

Graduate Grading Assistant: Alisher Batmanov

Undergraduate Instructional Assistants: Eric Chan Yun, Runhan Shi

The graduate TA is a valuable resource, and I encourage you to take advantage of his help during their virtual 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.

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. TA and UIA office hours will start on Monday, January 10.

Econ 120B Office Hours (for all TAs)
Join URL: <https://ucsd.zoom.us/j/92109016946>

Review Sessions: The graduate teaching assistant will hold one review session live each week, either via zoom or in-person, depending on campus covid guidelines. This live review session will be recorded for later viewing and posted on Canvas. You can attend any review session, or view the recording, regardless of the review session time you are officially registered for.

The reason we are alternating live review session times is because I want to optimize the use of the graduate student TA. By alternating, it will free up time for the graduate TA to hold extra office hours and conduct review sessions before exams.

We will alternate when the live review session will be held each week, switching between the scheduled time for the two classes. Here is the schedule:

Jan 7: 11-11:50 am
Jan 14: 8-8:50 am
Jan 21: 11-11:50 am
Jan 28: 8-8:50 am
Feb 4: No review session this week
Feb 11: 11-11:50 am
Feb 18: 8-8:50 am
Feb 25: 11-11:50 am
Mar 4: 8-8:50 am
Mar 11: Details to be decided later

The weekly review session 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 first live review session will occur virtually. Due to covid restrictions, the live review sessions will initially be held via zoom. I will send an announcement to the class if the review sessions switch to being held in person.

ECO 120B Review Sessions
Join URL: <https://ucsd.zoom.us/j/92046730728>

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* by Stock and Watson. The eBook access for the course is being delivered through RedShelf on the class webpage. Here is information, provided by the UCSD Bookstore, 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 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*. Students normally have physical access to *Stata* in ECON 100, although with the pandemic this is currently closed.

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, 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 one week later. For example, if a homework assignment is posted on a Tuesday (any time before midnight), it will be due the following Tuesday unless otherwise specified. You will always have at least one week to complete the assignment.

Your homework needs to be turned in on Canvas **before 8:00 am** on the due date and late problem sets will not be accepted for any reason. 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.

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 Caveats: The first two weeks of the class will be conducted online via zoom due to the pandemic. I'm open to suggestions on how to keep the course interactive, effective and engaging via zoom as we work through this together. If possible, we will return to in-person lectures starting the third week of the quarter, but we will need to be flexible as the COVID-situation evolves. I will alert the class in advance as a canvas announcement if we will be returning to in-person instruction.

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.