

ECON 120B
XINWEI MA
DEPARTMENT OF ECONOMICS
UNIVERSITY OF CALIFORNIA SAN DIEGO
SPRING 2022

TEAM

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1. Please include ECON120B in the subject line of your email. Please also include your name and your section number.
2. It can be very difficult to answer questions related to the course material via email, especially when equations/derivations are involved. Please only email us on course policies.
3. We are available for questions during my office hours, TAs' office hours, and discussion sessions.

ORGANIZATION

The information below reflects the current schedule. Please check the syllabus and Canvas announcements regularly for updates.

Lectures

Section A: Monday/Wednesday/Friday, 9:00-9:50am @ PCYNH 109.
Section B: Monday/Wednesday/Friday, 10:00-10:50am @ PCYNH 109.

Discussions

Section A01: Monday, 3:00-3:50pm @ CENTR 222.
Section A02: Monday, 4:00-4:50pm @ CENTR 222.
Section A03: Monday, 5:00-5:50pm @ CENTR 222.
Section B01: Wednesday, 3:00-3:50pm @ CENTR 222.
Section B02: Wednesday, 4:00-4:50pm @ CENTR 222.
Section B03: Wednesday, 5:00-5:50pm @ CENTR 222.

Instructor's office hours

Friday, 2:00-4:00pm @ Economics 225.

TAs' office hours

Available on Canvas.

COURSE DESCRIPTION

ECON 120B is the second course in the core econometrics sequence. We will focus on the linear regression model, which is widely applied in business, finance, public policy, and other areas. Three major ideas will be introduced: using regression to infer causal relationships, quantifying uncertainty using confidence intervals, and testing hypotheses regarding one or more parameters.

Prerequisites: ECON 120A or ECE 109 or MAE 108 or MATH 180A or MATH 183 or MATH 186.

Introduction

Economic models and econometric models · Prediction and causal inference · Cross-sectional, time-series, and panel data

Review of probability and statistics

Random variables · The Bernoulli distribution · The normal distribution · The law of large numbers · The central limit theorem · Asymptotics of the sample mean · Hypothesis testing

Introduction to Stata

Stata interface · Basic data manipulations · The do-file · Summary statistics · Plotting · Hypothesis testing

Linear regression with one regressor

Potential outcomes and causal inference · Deriving the estimators · Unbiasedness · Consistency · Asymptotic distribution · Hypothesis testing · Goodness of fit R^2 · Heteroskedasticity · Units of measurement · Measurement error

Linear regression with multiple regressors

Omitted variable bias · Reporting regression results · Using nonlinear transformations · Binary and categorical regressors · Interpreting coefficients · Unbiasedness · Consistency · Asymptotic distribution · Testing a single hypothesis · Joint testing of multiple hypotheses

TEXTBOOK

The required textbook for this class is [*Introduction to Econometrics*, by James Stock and Mark Watson](#). The book will be available as an eBook through Canvas. Note that the lectures will also cover additional material not found in the textbook.

Your digital course materials are provided by the UC San Diego Bookstore through Canvas and are free for the first week of class, after which your student account will be charged a special reduced price unless you opt out. (Look out for an email from donotreply@redshelf.com and check your spam folder if you don't receive it.) If you decide to opt out you must complete the process by April 9 and you will be responsible for sourcing the materials elsewhere.

To opt out: (1) Click the RedShelf link in Canvas; (2) Click View Course Materials; (3) Scroll down to the grey opt-out button and follow the prompts.

For any questions about billing please contact textbooks@ucsd.edu. For any questions about using your eBook please reference RedShelf Solve (link).

SLIDES

My slides are available on Canvas. You should at least skim through the slides before coming to lecture.

ECONOMETRICS VIDEO HANDBOOK

In addition to my slides and the textbook, you will also have access to the Econometrics Video Handbook (EVH) through Canvas. The EVH allows you to review the material discussed in 120A.

SOFTWARE

You will have to use the statistical software package Stata to solve assignments. Download and license information is available on Canvas. Both the installation file and the license are meant for students enrolled in this class only. Please do not distribute.

ASSESSMENT

The following is my prediction of how I will assess you in this course. While I will do what I can to keep to the predicted assessments for this course, the evolving situation may make it necessary for me to make a change.

Two Stata assignments (10% each)

- The first Stata Assignment will be available from April 18, 12:00am, and will be due on April 22, 11:59pm.
- The second Stata Assignment will be available from May 30, 12:00am, and will be due on June 3, 11:59pm.
- No late submission will be accepted.
- You should submit your answers and do-file (separately) via Canvas.
- The Stata assignments will be graded on three scales: 0%, 5%, and 10%. (For example, if you are able to answer more than half of the questions correctly, you will get full credit for an assignment.)
- If your do-file does not run, however, we will subtract 2.5% regardless of how “small” or “minor” the mistake is. (Before submitting your do-file, you should click the “Do” button and see if Stata returns any error message.)

Problem Sets (not graded)

- We will give weekly problem sets for you to practice. Problem sets will not be graded.

Midterm exam (30%)

- April 29, Friday, 5:00–6:30pm.
- Section A: @ MOS 0113; Section B: @ MOS 0114.
- There will be no make-up midterm. If you miss the midterm for a verifiable medical/legal/sports reason, I will increase the contribution of the final exam to 80%. Failure to notify me promptly that you must miss the midterm exam will result in a zero grade for the midterm. Unexcused absences will also result in a zero.
- This is a closed book exam. The official cheatsheet will be provided (you do not need to print it).
- Please bring a calculator (just a simple one will do, no need for scientific or business calculators). Other electronic devices (phone, tablet, laptop, etc.) are not permitted.
- Please bring a photo ID.

Final exam (50%)

- June 4, Saturday, 3:00–5:30pm.

- Section A: @ CTL 0125; Section B: @ PETER 110.
- A make-up final exam might be given only for a verifiable medical/legal/sports reason. Failure to notify me promptly that you must miss the final exam will result in a zero grade for the final. Unexcused absences will also result in a zero.
- This is a closed book exam. The official cheatsheet will be provided (you do not need to print it).
- Please bring a calculator (just a simple one will do, no need for scientific or business calculators). Other electronic devices (phone, tablet, laptop, etc.) are not permitted.
- Please bring a photo ID.

OTHER

If you believe that you have a disability and desire accommodation, please register with the Office for Students with Disabilities ([link](#)). You will also need to contact econosd@ucsd.edu (cc x1ma@ucsd.edu) with the Authorization for Accommodations letter from OSD for accommodations such as extra exam time.

Students who violate UCSD's academic integrity ([link](#)) policy will earn a failing grade for the course. In addition, the Council of Deans of Student Affairs will impose a disciplinary penalty.