San José State University
College of Social Sciences, Department of Economics
ECON 203B, Seminar in Econometric Methods, 01, Spring 2023

Course and Contact Information

Instructor:	Rui Liu, PhD
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Office Hours:	Monday 4:00-5:00 PM (in-person) or Thursday 1:00-2:00 PM (virtual) or by appointment
Class Days/Time:	Monday 6:00PM - 8:45PM
Classroom:	DMH 165
Prerequisites:	ECON 203A or Instructor Consent

Course Description

This course will extend your knowledge of econometrics beyond the linear models you used in ECON 203A. Econometrics is a tool which allows one to use data and statistical techniques to answer real-world questions and test predictions of economic theory. This course is the second in a two-course sequence on basic applied econometrics. It focuses on applications and interpreting the findings of econometric studies.

The goal of this class is for you to be able to interpret the results of the linear regression model you learned about in ECON 203A, as well as to learn additional topics such as use of panel data, nonlinear regression functions, limited dependent variable models, instrumental variables models, and introductory time series. You should also be able to use these various models to analyze data, and critically assess studies using these models. An important part of the class will be use of R, a free software environment for statistical computing and graphics, to analyze data. Econometrics is used in business, government, and academia for purposes such as studying the effects of government policies, using historical data to forecast future values of variables such as the stock market, analyzing markets, and testing the predictions of economic theory. Knowledge of econometrics is valuable for many types of jobs. Knowing a programming language such as R is also valuable.

We will cover the following topics: regression with a binary (0–1) dependent variable, regression with panel data, instrumental variables regression, regression discontinuity, introductory time series, and if time permits, experiments and quasi-experiments. The class prerequisite includes ECON 203A (which reviewed probability and statistics and covered linear regression). The textbook reviews some basic probability and statistics as well as linear regression.

Course Format

During the scheduled times for the course (Monday 6:00 P.M.-8:45 P.M.), I will lecture on the material, hold in-class discussions, and answer questions in person. Lecture slides, labs, and other supplemental materials will be posted online by the end of the day in which the in-person session occurs. Assignments will always be submitted online and due at regular times (typically 6:00 PM Monday).

Course Learning Outcomes(CLO)

Upon successful completion of this course, students will be able to:

1. critically evaluate econometric models and point out potential sources of bias,
2. explain how panel data and difference-in-difference designs can be used to overcome omitted variables bias,
3. explain how instrumental variables designs can be used to overcome omitted variables and simultaneity bias,
4. describe the requirements for a compelling regression discontinuity design,
5. compare and contrast time series techniques for prediction with econometric techniques for causal inference.
6. formulate an interesting and important research question,
7. locate useable data from Internet or other sources,
8. search and analyze scholarly literature related to research question,
9. develop a statistical model that can be used with the data to answer a question which contributes to the literature.
10. effectively communicate methodological approach and results of empirical econometric analysis.

The Course Learning Outcomes (CLOs) are connected to Program Learning Outcomes (PLOs) and course assignments as follows.

CLO Assessed	PLO Assessed	Assignments
1, 2, 3, 4, 5	3, 4	Problem Sets, Chapter Quizzes, In-Class Lab, Exams
6, 7, 8, 9, 10	3, 4, 5	Term Paper, Presentations

Required Texts/Readings

Textbooks

The following econometric references are not required, but will prove useful (both in this class and in life):

Stock, J.H. and Watson, M.W. 2011. *Introduction to Econometrics*. Pearson; 3rd edition. ISBN: 9780138009007

Bailey, M.W. 2016.

- An Introduction to R
- R for Beginners
- Introduction to R for Finance
- Try R

There will be one in-class midterm exam on Monday April 3. The final will be during the University's assigned finals period on Monday May 22, from 5:15 pm to 7:30 pm. The final will be cumulative, but with more emphasis on the material in the second half of the course. The exams emphasize conceptual understanding as well as applications. Questions will be similar to the problem sets and quizzes, except without the need for computing in R.

Exam Policy

There will be no rescheduling of any exams. If you are unable to attend the in-class midterms or final exam, you must provide a legitimate excuse, such as a note from your doctor. Any doctor's note or other legitimate excuse must include a privacy waiver form allowing the Department of Economics to call the doctor's office to verify the authenticity of the note. There will be no makeup exams. If you have a valid excuse for missing the

Grading Questions and Grade Change Requests

If you think that your assignment has been graded incorrectly, you must write up why you think so and discuss the issue with me within 1 calendar week of getting the exam back. Note that your entire exam is open to regrading, so your grade could go down as well as go up. No regrade requests will be considered after that point.

Academic Honesty

All students should be familiar with the University's policy on academic honesty, https://www.sjsu.edu/studentconduct/docs/SJSU-Academic-Integrity-Policy-F15-7.pdf.

Intentional plagiarism is academic dishonesty. Plagiarism occurs when you accidentally or purposefully do any of the following in an assignment:

Use someone else's words either verbatim or almost verbatim without attribution,
Use someone else's evidence, line of thinking, idea, without attribution,
Turn in some else's work as your own, as in copying a peer's paper or purchasing a readymade paper,
Turn in previously submitted work as new work without instructor approval.

If I discover any evidence of cheating, dishonest conduct, plagiarizing, or inappropriate collusion on exams, homework, or term paper, the students will be given Fs for the work in question, will also make him/her liable for referral to Student Conduct and Ethical Development for further disciplinary action. These terms are explicitly defined at the URL above.

Final Examination or Evaluation

The course will conclude on May 22, 2023 with a cumulative final exam. The exam will include both multiple choice and short answer questions. The questions will be based on material from throughout Econ 203 A and B. The final exam questions can be broken down into three parts: about one-third of the questions will be based on *readings*, another third of the exam questions will be multiple choice questions based on the *quizzes and problem sets*, and the final third will be based on topics discussed in *lectures* and on which you should have taken notes. There are no bathroom breaks during exams so please plan accordingly.

Grading Information

Below is a list of the percentage weight assigned to various class assignments.

Assignment	Percent of Grade	Due Daa2signed t( )16.7 :

Grades are determined as follows:

Grade	*Percentage*
A plus	*96 to 100%*
A	*93 to 95%*
A minus	*90 to 92%*
B plus	*86 to 89 %*
B	*83 to 85%*
B minus	*80 to 82%*
C plus	*76 to 79%*
C	*73 to 75%*
C minus	*70 to 72%*
D plus	*66 to 69%*
D	*63 to 65%*
D minus	*60 to 62%*
F	*59% or below*

University Policies

Per

ECON 203B/ Seminar in Econometric Methods, Spring 2023, Course Schedule

Course Schedule

Lesson	Date	Topics, Readings	Assignments, Deadlines
1	1/30	Review of linear model Regression with a binary dependent variable (Bailey, Chp 12; Stock and Watson, Chp 11)	
2	2/6	Regression with a binary dependent variable (Bailey, Chp 12; Stock and Watson, Chp 11)	
3	2/13	Regression with a binary dependent variable (Bailey, Chp 12; Stock and Watson, Chp 11)	
4	2/20		