



# ECON 482 A: Econometric Theory & Practice

## Summer 2022

Last updated: May 31, 2022

In ECON 482 A, we are adopting a fully remote model. Lectures will be made available as pre-recorded materials and will not be given in-person. Office hours will be offered remotely. Exams will be given remotely. A remote live problem solving session will be held almost weekly to reinforce material in preparation for assessments and problem sets and will be recorded for future viewing.

### Instructor

Name: Jorge A. Rivero

Email: [jrivero@uw.edu](mailto:jrivero@uw.edu)

Office: [Zoom Office](#)

Office Hours: MW 10:00 AM – 11:00 AM PST @ Zoom Office

### Course Information

Room: Remote ([Zoom](#))

Times:

- Lecture videos are posted weekly on Friday
- Problem solving sessions: W 9 AM - 9:50 AM PST

Website: Canvas

### Required Materials

- Textbook: *Introductory Econometrics: A Modern Approach* (5th edition) by Jeffrey M. Wooldridge, ISBN 1111531048
- A computer to check Canvas and complete computer programming exercises. The UW offers a loan program.
- [R](#) and [R Studios](#). Both are available for free and will be used throughout the course. [R Markdown](#) is the recommended format for submitting your work. See [Canvas](#) for a guide on how to set up.
- Scanner application on your phone to submit exams and problem sets, see [Canvas](#) for suggestions.

### Prerequisites

A minimum grade of 2.0 in ECON 300; and either ECON 311, STAT 311, STAT 390, or Q SCI 381

We will make use of algebra and differential calculus.

## Course Overview

Econometrics is both a collection and the development of statistical and mathematical methods for studying economic relationships, testing economic theory, and guiding and evaluating policy. Both of these dimensions are continuously expanding due to its demand throughout most areas of economics, business, sociology, etc. In this course we will focus on linear regression analysis with cross sectional data. Cross sectional data is a common form of data that is composed of observations and their recorded characteristics of interest. Additionally, we will spend most of the course on the *ordinary least squares* (OLS) estimator of the linear regression model.

Our goal from studying the linear regression model in this simple setting is to develop intuition necessary to answer empirical questions and interpret the results. Analytical and mathematical reasoning will be used throughout. We will also make frequent use of the statistical software R to work with the data and estimate equations.

### A. Topics

- Review of basic math, probability & statistics (Appendix A, B, C)
- Simple Linear Regression Model (Chapter 2)
- Multiple Linear Regression Model (Chapter 3,4 & 7)
- Inference using the OLS estimator (Chapter 4 & 5)
- Heteroskedasticity (Chapter 8)
- Endogeneity & Instrumental Variables (Chapter 15)
- Panel Data Methods & Unobserved Heterogeneity (Chapter 13)

### B. Lectures

Lectures will be delivered via recordings posted weekly on [Canvas](#). I will typically post lectures each week on Friday that covers material for the following week.

Students are encouraged to email me questions, attend office hours, or contact me to set up an appointment if they have any questions.

### C. Problem solving sessions

Every Wednesday (not counting weeks when there are exams) from 9:00 AM – 9:50 AM PST, I will host a live 50 minute problem-solving session. I will present problems and R instruction. Attendance is not required and recordings of these sessions will be available. The focus of these sessions is to supplement lectures and help with problem sets.

## Grading

*Due to extraordinary circumstances, I reserve the right to change the following: the number of exams and problem sets and their weighting.*

*Access to a scanner or device that takes high quality pictures is required to submit all exams and problem sets on Canvas to get feedback as soon as possible.*

Grades will be based on 4 problem sets, a midterm exam, and a final exam. The breakdown is as follows:

- 4 problem sets: 40%
- Midterm: 30%
- Final: 30%

### A. Exams

Exams will be based on the lectures and problem sets. The final is **cummulative**.

Exam Schedule:

- Midterm Exam: July 20th at 8:30 AM PST on Zoom
- Final Exam: August 17th at 8:30 AM PST on Zoom

Rules and facts: (*subject to change*).

- Exams will be held live over Zoom.
- You will be allowed a simple scientific calculator.
- The exam will be distributed in the zoom chat and also on the canvas home page.
- To ask a question on the exam, please message me privately to avoid distracting other students. I will share my screen to a word document with announcements/clarifications that may come up.
- All tests are due within 10 minutes after time is called and will be submitted on Canvas. If Canvas is not working, email me your exam submission. If you do email your exam, please also upload on canvas so I can give proper written feedback.
- After you submit your exam, please double check to make sure it submitted correctly
- After the exam concludes and after making your submission, you are free to leave.
- Without a valid excuse, missing exams will result in a score of zero. Valid excuses include documented illnesses by a medical professional, bereavement, etc.
- Being in a different timezone is **not** an excuse to miss exams. Make sure you can commit to attend. Times are listed above under course information as well as exam dates in this section.

## B. Problem Sets

There will be four graded problem sets. I will post problem sets on Mondays and students will have about 2 weeks to complete. The problem sets are meant to cover material presented in lecture and to also give hands-on experience with R. Randomly selected problems will be graded from the problem sets. Each problem set is required to be completed. Although it is encouraged that you learn with your peers, you must submit your own work.

Problem Set Schedule:

- Problem Set 1: Due July 4th
- Problem Set 2: Due July 18th
- Problem Set 3: Due August 1st
- Problem Set 4: Due August 15th

## C. Department policy and assigning grades

*This is subject to change.*

The department of economics has adopted a set of grading guidelines for ECON 300. The median grade assigned must be no more than a 3.1 and a normal class will have a median grade between 2.8 and 3.0. You can expect if you have been consistently scoring the median raw score across your assignments to receive a grade between 2.8 and 3.0, and if the class does exceptionally well then you can expect a 3.1.

## Tentative Course Schedule

*Date format is Month/Day.*

*Canvas is the final authority over due dates.*

Weeks	Goals
Week 1 June 20 – June 24	Syllabus Review App A,B,C Chapter 2
Week 2 June 27 – July 1	Chapters 2-3
Week 3 July 4 – July 8	Chapters 3-4 PS 1 due 07/04
Week 4 July 11 – July 15	Chapters 4-7
Week 5 July 18 – July 22	<b>Midterm Exam 07/09</b> Chapter 7 PS 2 due 07/18
Week 6 July 25 – July 29	Chapter 5
Week 7 August 1 – August 5	Chapters 5-8 PS 3 due 08/01
Week 8 August 8– August 12	Chapters 8 - 15
Week 9 August 15 – August 19	<b>Final Exam 08/17</b> Chapter 15-13 PS 4 due 08/15

## Academic Honesty

1. Exams are individual work and cheating will not be tolerated. Looking at another student's exam is considered cheating. If a student is seen committing this act, they will be referred to the Office of Student Conduct on campus for a hearing. A student who may be facilitating the act of cheating will be also referred to the same office.
2. Altering an exam before submitting it for a review of the grading, obtaining an advance copy of an examination, or arranging for a surrogate test-taker are all flagrant violations of university policy. Again, a student suspected of this act may be referred to the Office of Student Conduct.
3. Altering an exam after being graded and then soliciting an adjustment of the exam grade is also a violation of university policy and students who attempt this will be reported to the Office of Student Conduct. A formal warning: a copy of each exam will be saved before being distributed back to students.

4. Cheating of any kind may result in expulsion from the university. The department will follow university policy in case of academic misconduct. I strongly recommend that you review the Dept. of Economics policy [here](#).

Students found having engaged in academic dishonesty will be subject to sanctions, which range from a disciplinary warning to permanent expulsion from the University, depending on the seriousness of the misconduct.

## **Accessibility and Accommodations**

If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include, but not limited to: mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or [uw-drs@uw.edu](mailto:uw-drs@uw.edu) or [disability.uw.edu](http://disability.uw.edu).

DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process between you, your instructor(s), and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.

## **Religious Accommodations**

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at Faculty Syllabus Guidelines and Resources. Accommodations must be requested within the first two weeks of this course using the Religious Accommodations Request form available at <https://registrar.washington.edu/students/religious-accommodations-request/>.

## **Statement Against Discrimination and Harrassment**

Please follow the UW Student Conduct Code in your interactions with your fellow students and myself in this course by respecting the many social and cultural differences among us, which may include, but are not limited to: age, cultural background, disability, ethnicity, family status, gender identity and presentation, citizenship and immigration status, national origin, race, religious and political beliefs, sex, sexual orientation, socioeconomic status, and veteran status.