EC 421: Introduction to Econometrics
Fall 2023
MW 2-3:20 PM: LIB 101

	Instructor	GE
	Kyutaro (Q) Matsuzawa	**Andrew Dickinson**
Office:	PLC-522	Zoom
Office Hours:	W 330-430PM; F 10-11AM	Th 3-4PM
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Course Overview

In this course, you will learn about the basic econometric tools used to conduct empirical economic research. This course will focus on learning basic econometric theory and understanding the problems and solutions associated with commonly used econometric techniques. Throughout the course, you will use R to apply methodologies learned during the course.

Learning Outcomes

Upon completing (and passing) this course, you will be able to:

- Demonstrate how to conduct economic research using cross-sectional, time-series, and panel data.
- Understand the assumptions required for each econometric models, when they are violated, the problem when they are violated, and how to potentially fix the problem.
- Correctly interpret results from various regression models and hypothesis testing.
- Implement R to conduct economic analysis.

Prerequisite

You should have successfully completed introduction to econometrics (EC 320). You are expected to have R and RStudio installed in your computer.

R

A lot of this focus for this course will revolve around the use of R/RStudio. You can install R at https://cran.r-project.org/ and RStudio at https://posit.co/products/open-source/rstudio/.

Textbook/References

Recommended: Introduction to Econometrics by Christopher Dougherty, 5th Edition

- You may use a 4th edition if you want. I will not assign any readings or assignments off the textbook. Thus, the textbook is optional, but recommended as my lecture will follow closely with the textbook.

Other Reference: Mastering 'Metrics: The Path from Cause to Effect by Joshua D. Angrist & Jörn-Steffen Pischke

- This textbook is recommended if you are interesting in pursuing more knowledge (i.e. Master's level) econometrics

Labs

Every week there will be labs led by our GE (Andrew Dickinson). During the lab, Andrew will be going over R coding that you are expected to do in your homework. The lab will be scheduled to happen from 4:00 to 4:50pm on Tuesday, but it will also be recorded.

Grading

Your grade will come from the following

Problem Sets	25%
Midterm Exam	25%
Final Exam	30%
Final Data Project	20%
Extra Credit Methods Review	5%

The following is a percentage you need to earn a specific letter grade:

A:	93%+	A-:	90-92.9%		
B+:	87-89.9%	B:	83-86.9%	B-:	80-82.9%
C+:	77-79.9%	C:	73-76.9%	C-:	70-72.9%
D+:	67-69.9%	D:	63-66.9%	D-:	60-62.9%
F:	0-59.9%				

I will not curve an individual exam or homework assignment, but if the overall class average is under 80%, I will be curving the class so that the median grade will be around a B. In a very rare occurrence, I may give out A+ to exceptionally outstanding student(s), but no guarantee if I will.

Problem Sets

There will be a total of 6 problem sets. Each assignment will consist of two parts: analytical/R and theoretical section. I will drop the lowest score and each assignment will carry 5% of the overall grade. The problem sets will be hand written and/or typed, scanned, and submitted via Canvas. Collaboration with others is allowed, but each of you must submit your own individual work. These assignments will be due on Sundays (end of week 3, 4, 5, 7, 8, 9) at 11:59pm. However, in case of last minute debugging required, there will be a grace period in which you may still receive a full credit if you submit within 24 hours after the due date. The idea of this grace period is NOT for you procrastinate, but for us to help you with any last minute question or debugging. Note that we will NOT answer your question regarding the assignment if you ask/email us after the main due date (Sunday). After the 24 hour grace period, you may still submit your work, but in that case you will lose 10% for every hour that they are late.

Exams

The midterm will be taken on Wednesday November 1 (week 6) during our scheduled class time. The final exam will be taken on Wednesday December 6 at 2:45pm. The exam will be similar in style to the problem sets. For the exam, you may bring a non-graphing calculator as well as one 3-by-5 notecard with notes. NO make-up exams will be given. A missed final due to an unanticipated, verifiable emergency will be handled with an incomplete for the course (see: U-O's Incomplete Policy).

Final Data Project

For this data project, you are required to apply the tools you learned in class to conduct a short data analysis. The assignment will be typed with both the R code and output included. Further information can be found on our Canvas page. Similar to the exams, this assignment should NOT be collaborated, and you can only discuss the assignment with only myself or Andrew. This will be posted on week 10 and will be due on Wednesday December 6 at 11:59pm. I will NOT accept any late assignment for this project.

Extra Credit Methods Review

You may choose and write about a R function OR econometric technique that we did NOT cover in class for a small amount of extra credit. I will add whatever grade you receive on this assignment times 5% to your overall. For example, if you have a 87% final grade and receive a extra credit grade of 80%, then your final grade will be a 91% (87 + 5*0.8). You may find further information on our Canvas page. This will be posted around week 6 or 7 and will also be due on Wednesday December 6 at 11:59pm.

Attendance/Participation

Attendance and participation are **NOT mandatory**. I will not be punishing for no shows. However, I **highly recommend** showing up to class because previous data have showed that students who show up to class tend to do better on exams than those who do not. Please do not come asking me to do another lecture for a class that you missed. I will NOT record my lecture, but I will post any lecture materials.

Class Rule/Expectation

- Please turn off/silence your cell phone during class time
- No recording or taping of the lecture without my approval.
- If you have to leave the class early, please sit near the door so your classmate won't get distracted when you are leaving.
- If you decide to not pay attention during class, please sit towards the back of the class, so your classmate won't get distracted with your YouTube video, etc.
- Start working on your assignments **early**

Academic Misconduct

I will NOT tolerate any cheating or plagiarism of any kind. Anyone caught with academic misconduct will receive an F for the course and be referred to the Student Conduct and Community Standards office. Please refer to Section IV part 1 of Student Conduct Code if you are unsure if your behavior constitutes as an academic misconduct.

Copyright

I will post lecture notes, assignments, study guides, etc. on Canvas. I am the exclusive owner of copyright in those materials I create. You may take notes and make copies of course materials for your own use, but you may NOT reproduce or share these publicly without my approval. A failure to follow this rule is also considered an academic misconduct (see: Section IV part 1f of Student Conduct Code)

Accommodating Disabilities

Accessible Education Center offers assistance to eligible students who encounter barriers to full access or participation in the physical, curricular, or informational environments within the university. If you need any accommodations, please contact Accessible Education Center as soon as possible.

Tentative Course Schedule

Subject to Change

EC 320 Review (Chapters 0-6)
Heteroskedasticity (Chapter 7)

Midterm I

Consistency/Instrumental Variable (Chapters 8, 9)
Time Series (Chapters 11-13)
Panel Data (Chapter 14)
Misc. Topics (Not in the book)