Econ 311: Causal Inference
Fall 2024

Professor: Caitlin Myers
Lectures: W 1:30-4:15 pm in 75 Shannon St. 224
Office Hours: T 1:30-2:30 p.m. and Th 9:00-10:00 a.m.in WNS 002
Schedule an individual meeting: https://calendly.com/caitlinkmyers

Course description

The "science" in "social science" is not a delusion of rigor. In this course we will cover powerful and sophisticated empirical methodologies social scientists use to implement the scientific method and test hypotheses about cause and effect. We will begin with an overview of randomized trials: experiments in the laboratory and field. We will then discuss alternate, "quasi-experimental," approaches that empiricists adopt when randomized trials are not feasible or ethical. Along the way we will cover differences-in-differences estimation, event study designs, instrumental variables, and regression discontinuity designs. Assignments will center on the replication of important findings from the economics literature.

Learning Goals

Students will learn to apply the scientific method to social questions. Students will be able to use sophisticated econometric methodologies to critically engage the empirical research literature in economics and to provide rigorous and credible answers to their own research questions. Students will become expert users of the statistical software package Stata. Students will practice communicating findings in both written and oral forms. Students will feel supported and encouraged in engaging the world with curiosity, open-mindedness, and humility.

Course Meetings

This class meets once a week, on Wednesday from 1:30-4:15 p.m. in Room 224 of the 75 Shannon Street building. This is a long class period. To keep students engaged, I will mix things up, varying our activities between lecture and application. We'll also take brief breaks to stretch and walk around.

Office hours and Appointments

I have two types of office hours: drop-in hours TR and by-appointment hours on MWF. During drop-in hours, stop by WNS 002 to review material and work on problems collaboratively with me and classmates. If you wish to have a one-on-one meeting with me, you should schedule an appointment for an individual meeting on MWF using my Calendly page. If no slot is available, then I am booked that day.

I do not have an open-door policy where I encourage you to pop into my office any old time. This is not because I do not want to see y'all—I absolutely do! But here's the thing: it's really hard to focus on a task when someone might interrupt at any moment. So insted of being perpetually on call, I schedule drop-in and by-appointment office hours so that you can find me 5 days a week. During the scheduled times I will be here, fully focused and ready to help and chat. Please try to see me during those times, but also feel free to reach out via email if you have an urgent concernn or question, or are unable to find a time to see me within a week.

Platform

This course is organized into modules which are presented using Canvas. There you will find a detailed schedule for the course, assignments, grades, and additional resources. You should check Canvas frequently and also set up your notification settings to stay up-to-date with new postings.

Textbook

Scott Cunningham. 2021. Causal Inference: The Mixtape. New Haven, CT: Yale University Press. Currently available for free online at https://mixtape.scunning.com and as a PDF posted to CanvaS. The text of all additional assigned readings will be posted to Canvas.

Software

We will use the statistical software package Stata (v 18.0). Students can access Stata in campus computing labs and/or by installing Stata for free on their personal computers. While you are welcome to work in labs outside of class, you will also need to be able to access Stata on a personal laptop during class.

Accessibility Services

If you require additional accommodations sanctioned by the Student Disability Resource Center, please submit your letter within the first week of class or immediately upon receiving it. I will be happy to work with you to make this course accessible.

Evaluation

Your class grade will be determined by participation (20%), assignments (50%), and a final project (30%). Please note that I do not round. The grading scale is as follows:

Overall Average	Final Grade	Overall Average	Final Grade
94.0-100%	A	77.0-79.9%	C+
90.0-93.9%	A-	74.0-76.9%	C
87.0-89.9%	B+	70.0-73.9%	C-
84.0-86.9%	B	60.0-69.9%	D
80.0-83.9%	B-	<60%	

Participation (20%)

Participation is evaluated by short participation assignments completed outside of class that are designed to incentivize and reward participation, preparation, engagement, and attention. Each participation assignment will be posted to Canvas and clearly marked as contributing to your participation grade. Participation assignments may take a variety of forms including but not limited to open-note online quizzes, annotating readings, and posts to a discussion board. You may consult any source that you wish for these assignments, including notes, books, the internet, and classmates. The only exception is that your work must fall within the bounds of the AI policy outlined below. I will not accept late short participation assignments. However, I will drop your lowest two grades on participation assignments.

Assignments (50%)

Mastery of the material will be evaluated with four extensive replication assignments. Each replication assignment will include a series of questions related to the econometric technique(s) covered in the corresponding unit as well as a replication exercise based on an empirical paper that we have read and discussed. You may consult any source that you wish for these assignments, and I will encourage and facilitate collaboration by working on these assignments with you during class. However, the work that you turn in must be your own.

On the class following the due-date for a replication assignment, there will be a written 50-minute in-class exam during which you may not consult any sources except what is in your head. Your score on this exam is part of your grade on teh associated assignment. The exam is designed to incentivize and assess your mastery of the material covered by the assignment.

Late assignments will only be accepted until the Monday after the assignment was due, at which point I will post a key. Late assignments will be docked 5 points per day beginning after 5 pm on the day they were due.

Final Project (30%)

A detailed research proposal is due at the end of the semester in the form a 5-10 page paper. More information is provided with the assignment on Canvas.

Due dates for major assignments

The tentative due dates for the four replication assignments in this course are as follows:

> Assignment 1: October 10
> Assignment 2: October 31
> Assignment 3: November 14
> Assignemnt 4: December 2 [No late assignments accepted]

The final research project will be due on December 16, 2024 at 5 pm. This assignment can be submitted via Canvas.

Honor Code

Like you, I take the honor code very seriously. You must write the honor code on all assignments. Books, articles, notes, Stata manuals, and internet sources that do not violate the AI policy outlined below can be used on every type of assignment in this course. Classmates can work together and discuss replication assignments and the research proposal. You may not discuss a participation assignment with classmates, unless the assignment explicitly allows collaboration.

Artificial Intelligence (AI) technologies

Artificial Intelligence (AI) technologies, including machine learning models, automated research tools, and large language models (LLMs), are increasingly available and offer various applications in academic settings. While these tools can assist in the learning process, you must use them responsibly to uphold academic integrity. This policy outlines the acceptable and unacceptable uses of AI tools for assignments in this course.

Acceptable uses of AI

Coding help: Using AI to help figure out a tricky bit of code.

Idea Generation: Using AI to brainstorm ideas for topics, theses, or arguments.

Research Assistance: Utilizing AI to identify and/or summarize articles, papers, or datasets that will be further examined and cited.

Drafting Aid: Leveraging AI to help outline or draft parts of an assignment, provided that the content is significantly revised and meets the assignment's originality requirements.

Grammar and Style Checks: Employing AI tools for editing and proofreading.

Translation Services: Utilizing AI for basic translation needs when dealing with sources in foreign languages, followed by appropriate citation.

Unacceptable uses of AI

Plagiarism: Submitting text generated by AI without proper citation or presenting it as your own original work. (Along those lines…I used ChatGPT 4 to write 90% of this AI policy.)

Full Assignment Generation: Using AI to produce entire assignments or significant portions thereof without substantive original contribution.

Use of AI when explicitly prohibited: The use of any AI tool is expressly prohibited during any of the 4 50-minute in-class exams.

Penalties for Misuse of AI

Misuse of AI tools will be considered a violation of the honor code.

Disclosure

If you use AI tools in an assignment, you must disclose this fact in your submission. A simple statement such as "[Name of AI tools] were used for initial drafting, research summarization, and grammar checks" will suffice.

Final Notes

Because AI technologies are evolving rapidly, the course AI policy is subject to change. Any alterations will be communicated to the students in class and and via email.

Citation for my use of AI to generate this section

"Write a policy on the use of AI for my syllabus" prompt. *ChatGPT* 4.0, OpenAI, 7 Sep. 2023, chat.openai.com/chat.