

Applied Microeconometrics II

Fall 2023

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1. OVERVIEW

In this course you will continue to develop your empirical analysis skills, building on the content you learned in Applied Microeconometrics I (AM1). We will cover additional (advanced) topics concerning the methods learned in Microeconometrics I (AM1) and introduce structural methods. TA review sessions and homework will cover statistical software coding skills meant to help students implement the methods learned. The course is particularly suitable for students utilizing empirical methods in their master's thesis, PhD students, and students who anticipate working on empirical projects in a business or public policy context. Assignments and readings will be tailored to match students' area of interest.

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2. PREREQUISITES

Students are required to have already taken Applied Microeconometrics I or a similar course.

3. ASSESSMENT AND GRADING

- Four assignments (4X10%=40%)
- Paper presentation (20%)
- Two paper reviews in your field of interest (30%)
- Participation (10%): Quizzes during class- quizzes on course material, full points for submitting answer. 12 quizzes in total/ you need at least 10 for full participation points.

Note that the two paper reviews and the paper presentation should be using three **different** quasi-experimental methods (e.g. difference in differences, instrumental variables, regression discontinuity designs).

List your policy interests here:

https://docs.google.com/spreadsheets/d/1xD5wQRDa_4DG5f2viCGj4jcEUcHIpeURHi1S1rnVgc/edit?usp=sharing

The format of the reviews will be somewhat standardized (you will need to address specific questions about the paper- **see Lecture notes 1**). Relevant papers will be selected by the instructor based on student policy/concentration interests. You are encouraged to work in groups for the assignments, paper reviews and paper presentations (**maximum group size 3**). The groups will likely be formed based on similar topic areas of interest (e.g. labor, education, environment, development, crime, etc.)

PHD students (and masters students interested in research) :

Same points for assignments and participation, but

Replace Paper presentation (20%) + Two paper reviews in your field of interest (30%)

With Research proposal and presentation (20%+15%) + One paper review in your field of interest (15%)

4. GUIDELINES FOR PAPER REVIEWS AND PROPOSALS

Paper reviews- 2 pages

- Section 1. Describe the research question(s) -1 paragraph
- Section 2. Explain the problem of causal identification: why can't we just use OLS? Is there selection bias, are there unobservables, what are the identification problems?- 1 paragraph
- Section 3. Explain what estimator(s) is/are used. If several estimators are used, explain why. Explain how the estimators solve the identification problem. 2-3 par.
- Section 4. What are the authors' findings? How do you expect these findings differ from what we would find with just a naive OLS estimate? 2 par.
- Section 5. What robustness checks do the authors implement? What validity concerns do the robustness checks address? - 2-3 par.
- Section 6. Critique the paper. Think about potential confounding factors that may hinder identification. Challenge the assumptions made in the paper. What are the remaining threats to validity? - no more than 2-4 par.

Paper proposal-PhD students- 5-6 pages

- Section 1. Statement of the policy/research question.
- Section 2. Background on the policy/research question. Please make the background relevant to the specific policy question.
- Section 3. Other approaches to solving this problem (briefly) review other policy/research papers dealing with the same (or similar) research question).
- Section 4. Data and sample- describe what data you (would) use. Provide details about what variables you would use, how they are measured, provide sample summary statistics if they are available. Discuss how you would go about getting the data.
- Section 5. Method- Explain the problem of causal identification you are trying to solve.
- Section 6. Explain what estimator(s) you want to use and how it/they would solve the identification problem.
- Section 7. Discuss the limitations of your proposed study and validity concerns.

Paper presentation- 15 minutes presentation, 6-7 slides recommended, 10 max.

- Is brief on background and motivation, just enough for audience to understand empirical strategy.
- Focuses on explaining the main robustness checks, no need to provide overall evaluation (but you're welcome to)
- Uses relevant illustrations and tables from paper (fine to take snapshots).

5. READINGS

- Experimental and Quasi-experimental Designs for Generalized Causal Inference, William R. Shadish, Thomas D. Cook, Donald Thomas Campbell [selections will be posted on the course website]
- Mastering Metrics: The Path From Cause to Effect, Princeton University Press, 2014- Joshua D. Angrist and Jörn-Steffen Pischke
- Garret Christensen, Edward Miguel. Transparency, Reproducibility, and the Credibility of Economics Research, Journal of Economic Literature, 56(3): 920-980
- Duflo, Esther, Rena, Hanna and Stephen P.Ryan. 2012. Incentives Work: Getting Teachers to Come to School, American Economic Review, 102(4)
- Additional readings will be posted on the course website.

6. COURSE SCHEDULE

		Assignments due date
Wed Oct 25 U006	Lecture 1. Power calculations and clustering. Validity framework and replicability	
Thu Oct 26 U006	Lecture 2. Replicability and good practices in empirical research; Validity framework (continued). Best principles for descriptive studies.	
Fri Oct 27 T004	Review session 1: Review: hypothesis tests and power calculations, help for Assignment 1	
Wed Nov 1 U006	Lecture 3. Difference in differences topics: event studies, triple differences, multiple treatments, synthetic control methods, heterogeneity in treatment effects	

Thu Nov 2 U006	Lecture 4. Difference in differences topics (cont.)	
Fri Nov 3 T004	Review session 2: Difference in differences in Stata (code and supporting examples for Assignment 2)	
Wed Nov 8 U006	Lecture 5. Difference in differences topics (cont.)	Assignment 1 due-submit on Mycourses
Thu Nov 9 U006	Lecture 6. Instrumental variable topics: overidentifying restrictions test, many/weak instruments, etc, Bartik instruments, instruments in randomized trials.	
Fri Nov 10 T004	Review session 3: Discussing assignment 1 solutions and IV code (supporting examples for Assignment 3)	
Wed Nov 15 U006	Lecture 7. Regression discontinuity design topics: nonparametric RD, sensitivity to functional form, etc.	Assignment 2 due-Submit on Mycourses
Thu Nov 16 U006	Lecture 8. Regression discontinuity design topics cont. Introduction to structural models: discrete choice models	
Fri Nov 17 T004	Review session 4: Discussing assignment 2 solutions; regression discontinuity code (supporting examples for Assignment 3)	

Wed Nov 22 U006	Lecture 9. Structural models of utility maximization: introduction: Discrete choice models	
Thu Nov 23 U006	Lecture 10. Structural models: more examples	Assignment 3 due- Mycourses
Zoom/ Y319	Thu Nov 23 Afternoon and Fri Nov 24: 15-minute meetings with teams presenting next week- slides emailed at least one day in advance of meeting	
Fri Nov 24 T004	Review session 5: Stata Code for basic discrete choice (supporting examples for Assignment 4)	
Wed Nov 29 U006	Student presentations: difference in differences	
Thu Nov 30 U006	Student presentations: instrumental variables	
Fri Dec 1 T004	Student presentations: regression discontinuity designs	Assignment 4 due- Mycourses
TBD, depending on enrollment	PhD student research proposal presentations - A draft of the research proposal emailed a week in advance. - The meeting will take place no later than Dec 5th	Paper summaries due*- Mycourses
	*- you have the option to submit paper reviews early and get feedback anytime during the semester.	

Classrooms U006 and T004:

