ECO 245: Empirical Methods for Applied Microeconomics
Fall 2026

Damon Clark

E-mail: clarkd1@uci.edu
Class time: Tuesday and Thursday 12.30pm-1.50pm
Office Hours: Friday 12pm-1.40pm, sign up here: https://calendly.com/clarkd1-1/office-hour-appointment/

Overview

This course is designed to introduce you to - and strengthen your knowledge of - the empirical methods used in applied microeconomics. More narrowly, the focus will be on the methods used in program evaluation; that is, to estimate the effect of some variable X on some variable Y. You may have seen these methods before, but it is important that you understand exactly what are their strengths and weaknesses, how they are related and how you should use them.

With that in mind, the course will involve three components:

- A chalk-and-talk component in which I will review these methods, discuss important extensions and discuss how the methods are related.
- A data analysis component in which you are given the data associated with a particular study and asked to re-apply the method.
- A discussion component in which you are given a paper that applies the method and are asked to discuss it. See the course website for details of the papers to be discussed.

Pre-Requisites

Ideally, a student taking this class will have (a) a sound grasp of econometrics at the undergraduate level (i.e., solid performance on an upper-division undergraduate econometrics course) (b) a reasonable grasp of econometrics at the graduate level (i.e., exposure to some graduate courses) and (c) a research question that they would like to address using one or more of the methods taught in the course. In practice, one of (b) and (c) might suffice: a student that is sufficiently motivated can work on the technical side of things as the course progresses; a technically minded student can use the course to help think about research questions. There is no way around (a): a student that does not have a solid grasp of undergraduate-level econometrics will get little out of this course.

Evaluation

The final grade will be determined as follows:

- Class participation (10%): Please tell me ahead of class if you'll be absent.
- Presentation (30%): I'll provide more details in class.
- Data analysis (60%): this will be based on four (data-based) homework assignments.

Readings

There are two sets of books/papers that it will be useful to have for reference. The first are the econometrics textbooks you used in your undergraduate and graduate econometrics courses. Books in the former category include the following (other editions of each are fine):

- Stock and Watson (2015)
- Wooldridge (2015)

Books in the latter category include the following (other editions again fine):

- Cameron and Trivedi (2005)
- Greene (2011)
- Wooldridge (2010)

You should choose whichever suits your tastes regarding informality/formality, practical/theoretical and so on. I turn to different textbooks for different topics.

The second set of textbooks/papers that will be useful are those dealing specifically with applied methods. The main ones are:

- Angrist and Pischke (2009)

and at a lower (undergraduate level):

- Angrist and Pischke (2014)

Other books/chapters that you might find useful from time to time are:

- Angrist and Krueger (1999)
- DiNardo and Lee (2011)
- Murnane and Willett (2010)

Please email me if you would like to read something more advanced.

Course Schedule

The following table describes the course schedule. The lectures will roughly follow this schedule, although I won't stick to it too rigidly and it is possible if not likely that we will end up one of two lectures ahead of or behind schedule. The papers to be presented (and the students that will present them) will be determined as we go along. The homework dates are fixed.

Lectures	Topic	Homework
1 (9/24)	Introduction	
2 (9/29)	Introduction (cont.)	
3 (10/1)	Standard Errors	
4 (10/6)	Standard Errors (cont.)	PS1 Assigned
5 (10/8)	Randomization	
6 (10/13)	Randomization	
7 (10/15)	Randomization (cont.)	PS1 Due, PS2 Assigned
8 (10/20)	Instrumental Variables	
9 (10/22)	Instrumental Variables (cont.)	
10 (10/27)	Regression Discontinuity	
11 (10/29)	Regression Discontinuity (cont.)	PS2 Due, PS3 Assigned
12 (11/3)	Regression Control/Matching	
13 (11/5)	Regression Control/Matching (cont.)	
14 (11/10)	Differencing	
15 (11/12)	Differencing (cont.)	PS3 Due, PS4 Assigned
16 (11/17)	Heterogeneous Treatment Effects	
17 (11/19)	Heterogeneous Treatment Effects (cont.)	
18 (11/24)	Heterogeneous Treatment Effects (cont.)	
19 (12/1)	Heterogeneous Treatment Effects (cont.)	PS4 Due
20 (12/3)	No class (conference)	

There will be no class on Thursday, December 3, because I will be at a conference.

Presentations

I expect there will be a student presentation in each of Lectures 7-18. Closer to Lecture 7 see the "presentation-instructions" document on the course webpage for details of the papers to be presented and some instructions/tips for presenters. You will each do 2-3 presentations. I will email you exactly one week before you are due to present and then you will have 7 days to prepare.

References

Angrist, J., and S. Pischke (2009): *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press, Princeton, NJ.

——— (2014): *Mastering 'Metrics: The Path from Cause to Effect*. Princeton University Press, Princeton, NJ.

Angrist, J. D., and A. B. Krueger (1999): "Empirical strategies in labor economics," in *Handbook of labor economics*, vol. 3, pp. 1277–1366. Elsevier.

Cameron, C. A., and P. K. Trivedi (2005): *Microeconometrics: Methods and Applications*. Cambridge University Press.

DiNardo, J., and D. S. Lee (2011): "Program Evaluation and Research Designs," in *Handbook of Labor Economics*, ed. by D. E. Card, and O. Ashenfelter, vol. 4, chap. 5, pp. 463–536. Elsevier.

Greene, W. (2011): *Econometric Analysis*. Prentice Hall, 7 edn.

Murnane, R. J., and J. B. Willett (2010): *Methods matter: Improving causal inference in educational and social science research*. Oxford University Press.

Stock, J. H., and M. W. Watson (2015): "Introduction to econometrics 3rd ed.," .

Wooldridge, J. M. (2010): *Econometric Analysis of Cross-Section and Panel Data*. MIT Press, 2 edn.

——— (2015): *Introductory econometrics: A modern approach*. Cengage learning.