Public Affairs 397C Program Evaluation

Unique Number	63459
Instructor	Jeff Denning SRH 3.242 jeffdenning@utexas.edu
Meeting Time	T 9-12
Classroom	SRH 3.245
Office Hours	M 10-11, T 1-2 and by appointment
Prerequisites	Introduction to Empirical Methods for Policy Analysis
Website	jeffdenning.com/teaching

Required Text

Mastering 'Metrics: The Path from Cause to Effect by Joshua D. Angrist and Jörn-Steffen Pischke ISBN 978-0-691-15284-4

Reference Material

Causal Inference: The Mixtape https://mixtape.scunning.com/

Learning Outcomes

Students will learn how to use statistics to evaluate the effects of policy. Students will:

1. Demonstrate an understanding of the assumptions underlying commonly used empirical approaches for the identification of causal effects, including:
    - Ordinary least squares
    - Matching
    - Interrupted time series
    - Difference in differences
    - Fixed effects
    - Instrumental variables
2. Read and understand contemporary academic literature in program evaluation. Students will provide written evaluations of selected academic papers, including a clear description and critique of the empirical methods used.
3. Apply modern empirical methods using data analysis exercises.
4. Complete a research project in which they identify a question, assemble a dataset, thoughtfully apply appropriate empirical methods, and clearly describe their methodology, assumptions, and findings.

Course Grading

Final grades will be calculated according to this weighting:

Homework	10%
Class Participation	5%
Quizzes	25%
Midterm	25%
Term Paper	35%

Grading for the semester will be done as follows: First, a total score for the semester will be calculated using the weights from above. Second, a distribution of grades will be determined based on a subjective evaluation by the instructor that determines grade cutoffs for each letter grade. Course grades will be regularly posted on Canvas

Homework

There will be several homework assignments. Each assignment may be done in groups of up to three individuals. The lowest homework grade will be dropped. Several of the homework assignments will require that you use STATA to complete them, hence STATA is required for this class. See below for more on how to get STATA. Homework will primarily graded for completion and keys will be posted after the homework is due.

Homework (and relevant datasets) will be posted on my website jeffdenning.com/teaching

Ways to get Stata

As a graduate student, you can buy a 6-month grad license to use Stata BE which is all you'll need for $48. This is what I strongly recommend.

You can use Stata on the StatApps server in the Department of Statistics and Data Science. See this link for more information. This has some downsides such as not allowing you to install new commands. I do not recommend relying on this for this class.

Stata is installed on all ~15 computers in the computer lab in SRH 3.200. To use Stata, you need to use these computers in Windows mode (not Mac). If you use these machines, it will be harder to get help on problem sets and with your final project.

Class Participation

You will also be expected to complete the midcourse evaluation and end of course evaluation. You should attend the course and participate in classroom discussions having read the prior day assignment. Points may be lost for violating the laptop/electronics policy (see below).

Quizzes

There will be several quizzes throughout the semester. These will be administered at the beginning of class (and will be handwritten). The lowest quiz scores will be dropped.

Term Paper

A ten page term paper (not including tables) is due on the last day of class. This paper must be written in groups of two or three individuals. A complete draft must be turned in at the assigned due-date in order to receive full credit on the paper. You are also required to submit a rough draft at an earlier date. You will present your paper on the second to

last class day. The rough draft is worth 5 percent, the presentation is worth 15 percent, and the final paper is worth 15 percent. As part of your term paper you will turn in your code and log file (or equivalent).

Laptops/Electronics

In general, you may not use laptops, tablets, or any other electronic devices during class. I may make an exception to this policy when we work on Stata/data exercises in class. In that case, I will tell students the week before class and laptops will be put away after the Stata exercise is done.

I do make exceptions for students with disabilities, if you are in need of an exception please talk to me. There is good research to support this decision. If you would like to read more about the rationale for this policy see

- Sue Dynarski summarizing current research in the New York Times
- RCT run at West Point Carter, Greenberg, Walker (2017) "The impact of computer usage on academic performance: Evidence from a randomized trial at the United States Military Academy," Economics of Education Review

Students with Disabilities

If you are a student with a disability, or think you may have a disability, and need accommodations please contact Disability and Access (D&A). You may refer to D&A's website for contact and more information: http://disability.utexas.edu/. If you are already registered with D&A, please deliver your accommodation letter to me as early as possible in the semester so we can discuss your approved accommodations.

Inappropriate Use of Course Materials All course materials (e.g., outlines, handouts, syllabi, exams, quizzes, PowerPoint presentations, lectures, audio and video recordings, etc.) are proprietary. Students are prohibited from posting or selling any such course materials without the express written permission of the professor teaching this course.

Course Outline

		Topic	PS/Quiz
Jan	13	Causal Effects in Policy Analysis/Rubin Causal Model	
	20	Randomized Controlled Trials	
	27	*Canceled due to ice*	
Feb	3	*No Class*	
	10	Regression	PS1 Q1
	17	Instrumental Variables	PS2
	24	Regression Discontinuity	PS3 Q2
Mar	3	Differences in Differences	PS4 Q3
	10	Fixed Effects/Inference	PS5 Q4
	17	*Spring Break*	
	14	Matching/Synthetic Control	
	31	**Midterm** (Interrupted Time Series)	
Apr	7	Prediction & Practice Hypotheticals	Rough Draft Due
	14	Present Papers	
	21	Final Thoughts	Final Draft Due

Final Drafts of Papers Due Beginning of Class Tues Apr 21

Reading List (reference papers appear in italics)

- Causal Effects in Policy Analysis/Rubin Causal Model
  - Nothing
- Randomized Control Trials
  - Mastering Metrics Chapter 1
  - *Amy Finkelstein Ted Talk*
  - Carter Greenberg Walker (2017) "The Impact of Computer Usage on Academic Performance: Evidence from a Randomized Trial at the United States Military Academy"
- Regression
  - Mastering Metrics Chapter 2
- Instrumental Variables
  - Mastering Metrics Chapter 3
  - Angrist and Evans 1998 "Children and their parents labor supply: Evidence from exogenous variation in family size" American Economic Review
- Regression Discontinuity
  - Mastering Metrics Chapter 4
  - Hansen (2015) "Punishment and Deterrence: Evidence from Drunk Driving" American Economic Review
  - One paper TBD
  - *"Regression Discontinuity Designs: A Guide to Practice" Imbens Lemieux Journal of Econometrics 2008*
  - *Calonico, Cattaneo, Titiunik see website*
- Differences in Differences
  - Mastering Metrics Chapter 5
  - Card Krueger (1994) "Minimum Wages and Employment: A case study of the fast food industry in New Jersey and Pennsylvania" American Economic Review
  - *Baker, A., Callaway, B., Cunningham, S., Goodman-Bacon, A., & Sant'Anna, P. H. (2025). Difference-in-differences designs: A practitioner's guide. Journal of Economic Literature.*
- Fixed Effects

  - Denning (2017) "College on the Cheap: Consequences of Community College Tuition Reductions" American Economic Journal: Economic Policy

- Matching
  - Deming (2009) "Early Childhood Intervention and Life-Cycle Skill Development: Evidence from Head Start" American Economic Journal: Applied Economics

- Synthetic Control
  - Abadie Diamond (2010) "Synthetic Control Methods for Comparative Case Studies: Estimating the Effect of California's Tobacco Control Program" Journal of the American Statistical Association

- Interrupted Time Series
  - Jensen (2007) "The Digital Provide: Information (Technology), Market Performance, and Welfare in the South Indian Fisheries Sector" Quarterly Journal of Economics

- Inference
  - Bertrand, Duflo, Mullainathan (2004)"How Much Should We Trust Differences-In-Differences Estimates?" Quarterly Journal of Economics

- Prediction
  - Black, Sandra E., Jeffrey T. Denning, and Jesse Rothstein. 2023. "Winners and Losers? The Effect of Gaining and Losing Access to Selective Colleges on Education and Labor Market Outcomes." American Economic Journal: Applied Economics 15 (1): 26–67.