POLS 703: Advanced Policy Analysis
North Dakota State University, Spring 2024, 3 Credits

Basic Information

Professor: Dan Pemstein
Email: daniel.pemstein@ndsu.edu
Slack: NDSUPOLS703.slack.com
Phone: 701-231-6563

Class Location: Putnam 202
Class Time: TuTh 12:30-1:45
Office Location: Putnam 12
Office Hours: By appointment

Course Description

Bulletin Description

Advanced topics in causal and statistical inference for policy evaluation. Covers randomized controlled trials, survey experiments, and quasi-experimental designs. Addresses problems with measurement and sampling, randomization errors, non-compliance, and spillovers. Emphasizes practical issues in designing policy program evaluations to use these tools to produce causal conclusions.

Course Objectives

Students who complete this course will develop a toolkit for evaluating policy effectiveness using experimental and quasi-experimental methods. In particular, they will understand how to design and analyze randomized controlled trials, survey experiments, and quasi-experimental studies that use instrumental variables, regression discontinuity, and differences-in-differences methods to estimate causal effects from observational data. They will learn the advantages and limitations of these different designs and practice methods for addressing common problems that arise when one applies these tools to policy evaluation. Finally, students will learn how to pre-register studies and develop pre-analysis plans to improve the quality and credibility of their policy analyses and program evaluations.

Required Student Resources

The primary textbook for this class is *The Effect: An Introduction to Research Design and Causality* by Nick Huntington-Klein. It is freely available online, here. All unlinked readings will appear on Blackboard.

We will use R for statistical computing. This course assumes a familiarity with R such as one would obtain in POLS 670. If you have no background in R, please let me know, so I can help you get up to speed. R for Data Science and Modern Dive are useful references.

Schedule

1 Causal Inference for Public Policy Evaluation

Gerber, Green & Kaplan (2014); Stokes (2014); Dunning (2012) Ch. 1

2 Causality & DAGs

Gertler et al. (2016) Ch. 3; Huntington-Klein (2021) Ch. 5, 6, and 7

3 The Potential Outcomes Framework

Morgan & Winship (2015) Ch. 2

4 Causal Identification

Huntington-Klein (2021) Ch. 8, 9, 10, and 11

5 Experiments: Basics + Initial Project Proposals

Gertler et al (2016) Ch. 4; Gerber & Green (2012) Ch. 2–3; Montgomery & Nyhan (2018)

6 Experimental Designs: RCTs

Banerjee & Duflo (2014); Deaton (2014); Duflo, Glannester & Kremer (2008) Parts 3, 5; Bruhn & McKenzie (2009); Glennerster & Takavarasha (2013) Ch. 9

7 Experimental Designs: Survey Experiments

Gaines, Kulkinski & Quirk (2007); Hainmueller, Hopkins, & Yamamoto (2014); Barabas & Jerit (2010); Mumolo & Peterson (2019)

Spring Break

8 Experiments: Complications

Gerber & Green (2012) Ch. 5–8; Glennerster & Takavarasha (2013) Ch. 7–8; Stevenson (2024)

9 Power Analysis for Designing Program Evaluations

Glennerster & Takavarasha (2013) Ch. 6; Duflo, Glannester & Kremer (2008) Part 4; Gelman, Hill, & Vehtari (2021) Ch. 16; Blair, Cooper, Coppock & Humphreys (2019)

10 Pre-Registration, Analysis Plans, & Design Simulations

Huntington-Klein (2021) Ch. 15; Blair, Coppock, and Humphreys (2023) Ch. 2, 4, and 5; J-PAL Research Resources Section 3.8–9; EGAP's 10 Things to Know About Pre-Analysis Plans

11   Causal Inference with Regression

Huntington-Klein (2021) Ch. 13 and 16; Gelman, Hill, & Vehtari (2021) Ch. 19–20

12   Matching for Causal Inference + PAP Outline

Huntington-Klein (2021) Ch. 14

13   Differences in Differences

Huntington-Klein (2021) Ch. 18; Angrist & Pischke (2009) Ch. 5; Jakiela (2021)

14   Instrumental Variables

Huntington-Klein (2021) Ch. 19; Dunning (2012) Ch. 4; Gelman, Hill, & Vehtari (2021) Ch. 21

15   Regression Discontinuity Designs

Huntington-Klein (2021) Ch. 20 Dunning (2012) Ch. 3; Angrist & Pischke (2009) Ch. 6; Stommes, Aronow, Sävje (2021)

16   Policy Evaluation Design Project Workshop

Evaluation

Summary

Homework	48%
Policy Evaluation Design Project	32%
Participation	20%

Homework

Homework assignments will be handed out Tuesdays of odd-numbered weeks (starting on week 3). Each assignment will be due at midnight of the Thursday of the following week. There will be seven assignments in total and the six highest-scoring assignments contribute to your grade, with each of those assignments weighed equally (8% ea). You may turn two assignments in late with no penalty.

Policy Evaluation Design Project

Students will design a policy evaluation using one of the methods that we cover in this course. Students will choose an existing policy, or potential intervention, to evaluate, design a data collection and analysis strategy, run a full analysis of simulated data to test and validate the analysis strategy, and codify their design in a pre-analysis plan.

Students will submit a two page proposal on the Monday of week 5, a skeleton pre-analysis plan on the Monday of week 12, and a draft full design on the Monday of week 16. Final drafts will be due on the last day of finals week.

Participation

Participation includes engagement in class, participation in classroom exercises, and activities outside of class, such as organizing study groups and discussing course-related issues on Slack. Students will write a short (1–2 page) essay assessing their own participation. I will hand out a rubric for self-assessment in the first few weeks of class. Each students will evaluate their own participation with the rubric, explain their suggested grade, and justify their choice with evidence. The instructor will revise grades, if necessary, based on the strength of the evidence presented.

Grades

I use a flat grade scale: $A \geq 90 > B \geq 80 > C \geq 70 > D \geq 60 > F$. If you have a complaint about a grade you must type a formal appeal describing the problem. Your appeal should clearly explain why you believe your grade is incorrect and make a cogent argument for improving your grade.

Class Policies

Attendance

According to NDSU Policy 333 (http://www.ndsu.edu/fileadmin/policy/333.pdf), attendance in classes is expected. In this course attendance is mandatory unless you have a valid reason to miss a session.

Veterans and student service members with special circumstances or who are activated are encouraged to notify the instructor as soon as possible and are encouraged to provide Activation Orders.

Academic Honesty

The academic community is operated on the basis of honesty, integrity, and fair play. NDSU Policy 335: Code of Academic Responsibility and Conduct applies to cases in which cheating, plagiarism, or other academic misconduct have occurred in an instructional context. Students found guilty of academic misconduct are subject to penalties, up to and possibly including suspension and/or expulsion. Student academic misconduct records are maintained by the Office of Registration and Records. Informational resources about academic honesty for students and instructional staff members can be found at http://www.ndsu.edu/academichonesty.

Please make sure that you understand common standards of academic integrity and plagiarism and consult the instructor if you are ever in doubt. I have a no tolerance policy for academic misconduct and students who commit such misconduct should expect, at minimum, to receive a failing grade for this class.

Students with Special Needs

Any students with disabilities or other special needs, who need special accommodations in this course, are invited to share these concerns or requests with the instructor and contact the Disability Services Office (`http://www.ndsu.edu/disabilityservices`) as soon as possible.

Discrimination and Harassment

NDSU is committed to providing a safe and non-discriminatory learning, living, and working environment for all members of its university community. NDSU's policy on discrimination and harassment is available here and the equity office provides information about filing complaints here. Any form of violence or harassment, including sexual assault, relationship violence, and stalking is unwelcome at the University. NDSU provides a Sexual and Gender-Based Harassment and Sexual Assault Resource Guide.

Low-grade discrimination and harassment can be especially pernicious in a classroom setting. Please read this blog post and work to avoid the behaviors that the post describes.

Please note that the instructor has a mandatory responsibility to report instances of discrimination, harassment, sexual assault, and retaliation, as described here. What this means is that as your professor, I am required to report any incidents of such misconduct that I observe, or that students or others report to me.