Universität Regensburg

Impact Evaluation Methods

22124/22125

Summer 2025

Instructor:	Alex Alekseev	**Day & Time:**	Mondays 10:15am–1:45pm
Email:	aleksandr.alekseev@ur.de	**Place:**	R007
Office Hours:	By appointment	**Zoom:**	Link
Office:	RW(L) 518	**Course Page:**	GRIPS link

Overview

The course introduces students to the modern framework for causal inference in economics and other social sciences. The students will learn about the concepts of research design and identification strategy and how to apply these concepts to answer various research questions. The course starts by introducing the two workhorse models for understanding identification: the potential outcomes model and causal diagrams. We will then cover most commonly used tools for identifying and estimating causal effects: regression, matching, instrumental variables, regression discontinuity, and difference-in-differences, as well as a few recent developments, if time permits. Mastering these tools will allow students to answer their own research questions in academic, public, and private-sector contexts. The course will guide students through the intuition behind the methodology, formal derivations and proofs, as well as practical tools to implement each method. The course content relies on a mix of textbooks, article readings, and practical exercises in R.

Learning Objectives

At the end of the course, the students should

- be able to explain the difference between correlation and causation
- understand the role of research design and identification strategy in identifying causal effects
- be capable of using the potential outcomes model and causal diagrams to come up with credible research designs
- know when to apply different causal inference methods
- be able to perform those methods on existing data sets, interpret the results, and defend their identification strategy

Prerequisites

Knowledge of at least introductory-level statistics and econometrics is required. Knowledge of statistical software, such as STATA, R, or Python, is helpful but not required.

Course Outline

1. Causal Diagrams
2. Potential Outcomes Model
3. Randomized Experiments
4. Matching
5. Regression
6. Regression Discontinuity
7. Instrumental Variables
8. Difference-in-Differences
9. Panel Data
10. Student presentations

Literature

- Morgan, S.L., and C. Winship. 2007. *Counterfactuals and Causal Inference: Methods and Principles for Social Research*. Cambridge University Press
- Angrist, J.D., and J.S. Pischke. 2008. *Mostly Harmless Econometrics: An Empiricist's Companion*. Princeton University Press
- Cunningham, S. 2021. *Causal Inference: The Mixtape*. Yale University Press
- Huntington-Klein, N. 2022. *The Effect: An Introduction to Research Design and Causality*. Chapman & Hall

Additional papers will be uploaded on the GRIPS page.

Online Resources

- The Effect: An Introduction to Research Design and Causality
- Causal Inference: The Mixtape
- Causal Inference Bootcamp (Undergraduate Level) Videos by Matt Masten
- Causal Inference – Online Lectures (M.Sc/PhD Level) by Ben Elsner
- R for Data Science

Grading Policy

The final grade will consist of three components: problem sets (20%), class presentation (30%), and a final project (50%). I will be assigning home problems (6 to 10) throughout the course, you will submit them in writing. You will make a presentation (20–30 mins) for your final project during the last two weeks of the course and submit a paper (12–15 pages) at the end of the course. You will choose an existing study from a menu offered by the instructor, replicate its results, and conduct robustness tests using alternative causal inference methods. You have an option to choose a study not from the menu, with the written (by email) permission from the instructor. Each student will submit their own paper. The deadline to submit the paper is **August 25, 2025**.

1,0: 95 to 100

1,3: 90 to 94

1,7: 85 to 89

2,0: 80 to 84

2,3: 75 to 79

2,7: 70 to 74

3,0: 65 to 69

3,3: 60 to 64

3,7: 55 to 59

4,0: 50 to 54

4,3: 45 to 49

4,7: 40 to 44

5,0: less than 40

Course Policies

1. This course syllabus provides a general plan for the course, deviations may be necessary
2. Your constructive assessment of this course plays an indispensable role in shaping education in the University. Upon completing this course, please take time to fill out the course evaluation
3. If you have read the syllabus up to this point, send me an email with "Impact Evaluation Methods" in the subject line and "Syllabus" in the body

4. Students are expected to behave properly in class so as not to interfere with the learning environment of others in the classroom. This includes showing up for class on time, not leaving early (or at least being quiet if either of those do happen), not talking to neighbors in class, not using cell phones during class, etc. All cell phones and other noise-making devices must be turned off during exams. Students not adhering to these guidelines may be asked to leave the class and may be subject to an administrative withdrawal (depending on the severity of the infraction).