Econometrics of Policy Evaluation (EPE)

Provisional Syllabus – October 2025

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University of Oldenburg – Winter Semester 2025-2026

Basic Information

Instructor email: Cristian Huse
Times: Tuesdays 12.15-15.45
Location: A01 0-005, unless mentioned otherwise (please check Stud.IP)
Course code: 2.02.852

Course Overview

This course presents empirical methods used in Economics and applies them to Applied Microeconomics, especially Environmental and Energy Economics. The tools come from Econometrics and Statistics, being also used in fields such as Political Science and even Medicine (e.g., the evaluation of vaccines and medical treatments in general).

The course builds upon concepts of Statistics and Econometrics and relies on a willingness to use statistical software to understand data. Thus, it is not suitable as a first course in Statistics or Econometrics.

Given the nature of the topic, some degree of independent study is expected. This will occur in the form of preparatory tasks, computer lab sessions, and/or empirical projects, which are crucial for students to effectively understand the material.

The course is roughly organized as follows:

- Introduction to R (statistical software) and Econometrics review
- "Standard" empirical Methods
  - Causality, Randomization, Regression discontinuity, Difference-in-differences, Matching, Instrumental variables;
- Advanced methods (time allowing)
  - RD in time, Synthetic control methods, Alternative DD designs

Course Objectives

- Provide a self-contained treatment of empirical methods which are central to the work of applied economists (and other professionals), including the ability to perform and critically evaluate an empirical analysis – working both independently and in teams;

- Provide a pathway to those interested in writing an empirical Master thesis. Students interested in pursuing this should contact the staff in due course;

- Promote the use of open-source, platform-independent software, in particular the statistical software R, ensuring students can apply these tools in their future careers, especially in resource-limited environments or the non-profit sector.

Format and Structure

- The course consists of a combination of lectures (with theory and applications, e.g., from academic papers), some lab sessions, and exercises. Student contribution is important for a successful class.

- Teaching will be hybrid, i.e.,
    - **Asynchronous component:** course material will be made available one week in advance, ideally (but not necessarily exclusively) as slides and recorded lectures;
    - **Synchronous component:** weekly "live session" where we will essentially flip the classroom (typically 60-90 minutes).

- **What does it mean in practice?**
    - We expect you to go through the slides, recordings, lab sessions, quizzes etc in advance on a weekly basis
    - Please post your questions up to 24 hours before the lecture on the course forum
    - The live sessions will be used to answer you questions and for deepening the discussion.

- **Note:**
    - Weekly live sessions will take place during lecture time;
    - The official syllabus will be posted in advance and we expect students to read it carefully;
    - The material for each topic/lecture will be posted in advance. Given file sizes and technical issues, files (often slides with voice-over) might be sliced into smaller parts;
    - Clearly, this will require substantial independent preparation from your side. Thankfully, the course uses excellent material.

Evaluation

An individual test provisionally scheduled for 3rd February 2026. Please note that I will make sure to also ask questions with a focus on empirics and R.

Please note that we are not able to grade or provide individual written feedback on the problem sets, labs or empirical projects. We have, however, committed resources (applied for by the Chair to improve the learning experience) to be able to hold R sessions and will provide solutions to the assignments. I will also discuss some aspects of exercises in class.

Literature

- Gertler et al (2016). Impact Evaluation in Practice, 2nd. Edition. Washington, DC: Inter-American Development Bank and World Bank. Available from here → referred to as G below.

- Huntington-Klein, N. (2022). The Effect: An Introduction to Research Design and Causality. Routledge. Available from here

- Papers and tutorials to be assigned in due course

Note:

- Gertler's book is used to train policy-makers worldwide by the World Bank whereas Huntington-Klein is a more academic textbook.

- Please note that Gertler's book has a technical companion and a case study whose data (see .dta file) will be used throughout the course.

Overview of Topics

- Introduction to R

- Econometrics Review

- Causality (G, Chapter 3)

- Randomization (G, Chapter 4; HK, Chapter 9)

- Regression Discontinuity Design (G, Chapter 6)

- Difference-in-Differences (G, Chapter 7)

- Matching (G, Chapter 8)

- Instrumental Variables (G, Chapter 9)

- Advanced topics (time allowing)
    - Regression discontinuity in time
    - Synthetic control methods
    - DD for staggered treatments

Note to students of different programmes:

- My strong recommendation to all Master SEM students is that they take EPE as long as Applied Environmental Economics remains a compulsory course so that they have a smooth – and fair – ride. However, note that previous knowledge at the level of the Econometrics course is assumed;

- My strong recommendation is that all Master WiRe/Master in Management students take EPE, especially those interested in courses such as Industrial Organization. However, note that previous knowledge at the level of the Econometrics course is assumed.

Basic information on R and RStudio

Among the vast amount of online resources, you can obtain guidance on how to install and about the difference between R and RStudio here:

https://www.youtube.com/watch?v=YrEe2TLr3MI

https://www.youtube.com/watch?v=IJc2J-qewiU