

# Research Design and Research Logic

Cologne Center for Comparative Politics

Advanced Seminar for the 2023/24 Winter Term (14335.0703)<sup>1</sup>

**Instructor:** E. Ece Özbey

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**Office Hours:** Tuesday, 15:30 – 17:00, IBW Building Room 3.13c (By appointment)

**Modules:** CM Research Design

**Course Time & Place:** Block seminars on Wednesdays, 14:00 – 17:30

With the exception of Week I; Please check the schedule below!

Room 3.40 (IBW Building, Herbert-Lewin-Str. 2, 3<sup>rd</sup> Floor)

**First and Last Sessions:** October 18, 2023 – January 31, 2024

## Course Overview

Usually, whenever there is a big fire, there are also fire workers. Should we close all fire stations to prevent future outbreaks? There is also evidence that people who are infected with Covid-19 and get hospitalized have a higher probability of dying than infected people who are not hospitalized. Should we stop hospitalizing infected people? For both questions, the answer should be “no” because the suggested answers “get the causality wrong”, albeit for different reasons.

In this course, you will learn how to systemize your causal reasoning and explore different research designs for answering causal research questions. In the first part (Weeks 1-2), you will learn about the fundamental of good and ethical research as well as what it means to infer causation and what it is that makes one factor causal and another not. In part two (Weeks 3-4), you will make the first steps to systemize your causal and theoretical thinking using directed acyclic graphs (DAGs) as a modern, informal tool of causal mapping. Simple DAGs can demonstrate why the closing of fire stations and non-hospitalization of infected people wouldn't help much in preventing fires and deaths caused by Covid-19. More generally, DAGs can give one an idea about what causal research questions can be answered in principle and how. In the third part (Weeks 5-7), we will discuss different research designs (a map or plan for answering a research question). We will explore and compare the designs across common dimensions – few cases vs many cases;

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<sup>1</sup> This syllabus is preliminary and subject to changes. Version 1.0: 07.07.2023.

experimental vs observational; qualitative vs quantitative – and carve out their unique strengths and weaknesses for answering research questions.

## **Learning Outcomes**

Upon completion of this course, the students will be able to:

- Elucidate the fundamentals of causality-oriented empirical research
- Describe and distinguish different understandings of causation
- Theorize causal models and visualize them using DAGs
- Evaluate the implications of different causal models for analysis and for overall research
- Familiarize with a variety of research designs and the research questions one can (and cannot) answer with causal models
- Develop a research design for a research questions of their choice

## **Prerequisites**

This seminar is intended for both novice and experienced graduate students. A general understanding of concepts and theories of comparative politics, as well as knowledge of fundamental quantitative and qualitative research methods, is sufficient to partake in the seminar.

While perfection is neither expected nor required, students should possess the ability to comprehend and articulate themselves in English, as it will be the primary language used in class.

## **Course Structure**

The course is structured around seven synchronous, in-person block seminars, with two sessions each. It adopts a dynamic and interactive seminar format that encourages active participation and fosters collaborative learning. In addition to individual research, the seminars emphasize group discussions, critical analysis of course materials, and collective exploration of various concepts. To fully benefit from the course, students are expected to come prepared by completing the assigned readings ahead of each session. All course materials will be easily accessible through ILIAS, our online learning platform.

## **Assessment**

This course follows a portfolio model of examination, which requires students to complete multiple assignments and submit them via ILIAS within specified deadlines. The format and specific criteria for each assignment will be communicated through ILIAS, ensuring transparency and clarity. Feedback is an

essential component of the learning process, and therefore, the assignments will be returned to students with comments.

Failing to meet the requirements for a single assignment will not have negative consequences on its own. Instead, the final grade will be based on the cumulative points earned throughout the course, considering the following components:

<b>Task</b>	<b>Deadline for Submission</b>
Write a short essay with a research question and its justification (15 p.)	November 22, 2023
Based on the research question, formulate hypotheses on a causal relationship of your choice and formalize them in a causal model (35 p.)	December 20, 2023
Present your research question, its motivation, the theory and causal model, and a research design appropriate to test them in a research poster (50 p.)	February 21, 2024

## **Grading**

At the end of the semester, points will be converted to final grades as follows:

<b>Points</b>	<b>Grade</b>
96 – 100	1,0
91 – 95	1,3
86 – 90	1,7
81 – 85	2,0
76 – 80	2,3
71– 75	2,7
66 – 70	3,0
61 – 65	3,3
56 – 60	3,7
51– 55	4,0
0 – 50	5,0

## **Registration**

Students have to register for the course and the exam separately via KLIPS. The deadline for exam registration will be communicated later.

## Course Schedule

Week	Subject
<b>Week 1   October 18, 12:00-15:30</b>	Session I: <i>Fundamentals and Varieties of Research</i>
<p>Halperin, Sandra and Oliver Heath (2012): <i>Political Research: Methods and Practical Skills</i>. Oxford, New York: Oxford University Press: Chapter 2.</p> <p>King, Gary, Robert O. Keohane and Sidney Verba (1994): <i>Designing Social Inquiry: Scientific Inference in Qualitative Research</i>. Princeton: Princeton University Press: Chapter 1.</p>	
<b>Week 1   October 18, 12:00-15:30</b>	Session II: <i>Research Goals and Research Questions</i>
<p>Halperin, Sandra and Oliver Heath (2012): <i>Political Research: Methods and Practical Skills</i>. Oxford, New York: Oxford University Press: Chapter 5.</p> <p>Day, Christopher and Kendra L. Koivu (2018): Finding the Question: A Puzzle-Based Approach to the Logic of Discovery. <i>Journal of Political Science Education</i> 15(3): 377-386.</p>	
<b>Week 2   October 25, 14:00-17:30</b>	Session I: <i>How to Write a Research Paper</i>
tba	
<b>Week 2   October 25, 14:00-17:30</b>	Session II: <i>Conducting Ethical Research (in Times of AI)</i>
tba	
<b>Week 3   November 22, 14:00-17:30</b>	Session I: <i>This Thing Called "Causation"</i>
<p>Rohlfing, Ingo and Christina Isabel Zuber (2021): Check Your Truth Conditions! Clarifying the Relationship between Theories of Causation and Social Science Methods for Causal Inference. <i>Sociological Methods &amp; Research</i> 50 (4): 1623-1659.</p> <p>Huntington-Klein, Nick (2021): <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapter 5.</p>	
<b>Week 3   November 22, 14:00-17:30</b>	Session II: <i>Causal Models and Basic Terms</i>
<p>Huntington-Klein, Nick (2021): <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapters 6 &amp; 7.</p> <p>Vander Wee, Tyler (2015): <i>Explanation in Causal Inference</i>. Oxford: Oxford University Press: 22-35.</p>	

Week	Subject
<b>Week 4   December 6, 14:00-17:30</b>	Session I: <i>Keep That Backdoor Shut</i>
<p>Huntington-Klein, Nick (2021): <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapter 8.</p> <p>Mutz, Diana C. (2016): Harry Potter and the Deathly Donald. <i>PS: Political Science &amp; Politics</i> 49 (4): 722-729.</p>	
<b>Week 4   December 6, 14:00-17:30</b>	Session II: <i>Walking through the Front Door &amp; Causal Mediation</i>
<p>Huntington-Klein, Nick (2021): <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapter 9.</p> <p>Röth, Leonce (2022): Pathway analysis, causal mediation and the identification of causal mechanisms. In Negri, F. and Damonte, A. (Eds.). <i>Causality in Policy Studies</i>. Springer.</p>	
<b>Week 5   December 20, 14:00-17:30</b>	Session I: <i>Basics of Quantitative Designs</i>
<p>Keele, Luke (2015): The Statistics of Causal Inference: A View from Political Methodology. <i>Political Analysis</i> 23 (3): 313-335.</p> <p>Angrist, Joshua D. and Jörn-Steffen Pischke (2009): <i>Mostly Harmless Econometrics: An Empiricist's Companion</i>. Princeton: Princeton University Press: Chapter 2.</p>	
<b>Week 5   December 20, 14:00-17:30</b>	Session II: <i>Natural Experiments</i>
<p>Dunning, Thad (2008): <i>Natural Experiments in the Social Sciences: A Design-Based Approach</i>. Cambridge: Cambridge University Press: Chapter 2.</p> <p>Silva, Bruno Castanho and Sven-Oliver Proksch (2020): Fake It 'Til You Make It: A Natural Experiment to Identify European Politicians' Benefit from Twitter Bots. <i>American Political Science Review</i>: 1-7.</p>	
<b>Week 6   January 10, 14:00-17:30</b>	Session I: <i>Regression-Discontinuity Designs</i>
<p>Dunning, Thad (2008): <i>Natural Experiments in the Social Sciences: A Design-Based Approach</i>. Cambridge: Cambridge University Press: Chapter 3.</p> <p>Smith, Leah M., Linda E. Lévesque, Jay S. Kaufman and Erin C. Strumpf (2017): Strategies for evaluating the assumptions of the regression discontinuity design: A case study using a human papillomavirus vaccination programme. <i>International Journal of Epidemiology</i> 46 (3): 939-949.</p>	

Week	Subject
<b>Week 6   January 10, 14:00-17:30</b>	Session II: <i>Differences-in-Differences</i>
<p>Worldbank (2011): Impact Evaluation in Practice: Chapter 6.</p> <p>Bensch, G., Kluve, J., &amp; Peters, J. (2011). Impacts of rural electrification in Rwanda. <i>Journal of Development Effectiveness</i>, 3(4), 567-588.</p>	
<b>Week 7   January 31, 14:00-17:30</b>	Session I: <i>Comparative Case Studies</i>
<p>Lijphart, Arend (1971): Comparative Politics and the Comparative Method. <i>American Political Science Review</i> 65 (3): 682-693.</p> <p>Rohlfing, Ingo (2012): Case Studies and Causal Inference: An Integrative Framework. Basingstoke: Palgrave Macmillan: Chapter 4.</p>	
<b>Week 7   January 31, 14:00-17:30</b>	Session II: <i>Process Tracing &amp; Wrap Up</i>
<p>Bennett, Andrew and Jeffrey Checkel (2014): Process Tracing: From Methodological Roots to Best Practices. Andrew Bennett and Checkel, Jeffrey (ed.): <i>Process Tracing in the Social Sciences: From Metaphor to Analytic Tool</i>. Cambridge: Cambridge University Press: 1-37.</p> <p>Trampusch, Christine and Bruno Palier (2016): Between X and Y: How Process Tracing Contributes to Opening the Black Box of Causality. <i>New Political Economy</i> 21 (5): 437- 454.</p>	