

# Research Design and Research Logic

Cologne Center for Comparative Politics

Advanced Seminar for the 2024/25 Winter Term (14335.0703)<sup>1</sup>

**Instructor:** E. Ece Özbey

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**Office Hours:** Wednesday, 15:30 – 17:30 (By appointment), Room 3.13c (IBW Building, Herbert-Lewin-Str. 2, 3<sup>rd</sup> Floor) or Online

**Modules:** CM Research Design

**Course Time & Place:** Wednesday, 12:00 – 15:30

Biweekly block seminars: Kindly refer to the schedule provided below for details.

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

**First and Last Sessions:** October 9, 2024 – January 8, 2025

## Course Overview

Typically, wherever there is a big fire, there are also fire workers. Should we consider shutting down all fire stations as a preventive measure against future outbreaks? Similarly, there is data indicating that individuals who are infected with COVID-19 and get hospitalized face a higher probability of mortality compared to those who are not hospitalized. Should we cease hospitalizing infected people? For both questions, the answer is a resounding “no,” as the proposed solutions fundamentally misconstrue the concept of “causality,” albeit for different reasons.

Throughout this course, you will develop a structured approach to causal reasoning and explore diverse research designs tailored for answering complex causal research questions. In the first part (Weeks 1-2), you will delve into the fundamentals of sound and ethical research as well as the intricacies of inferring causation, exploring what makes one factor causal and another not. In the second part (Weeks 3-4), you will take the first steps in systemizing your causal and theoretical thinking by employing Directed Acyclic Graphs (DAGs) as a modern and informal tool of causal mapping. Simple DAGs can illustrate why closing fire stations or opting not to hospitalize infected individuals might not be effective in preventing fires or reducing deaths caused by COVID-19. More broadly, DAGs can provide insight into which causal research questions can be addressed in principle and how. In the third and final part (Weeks 5-7), you will scrutinize various research designs (maps or blueprints for answering research questions), compare them along numerous dimensions (few cases vs many cases; experimental vs observational; qualitative vs quantitative), and unravel the distinctive strengths and weaknesses inherent in each of them.

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<sup>1</sup> This syllabus is preliminary and subject to changes. Version 1.0: 03.09.2024.

## Learning Outcomes

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

- Elucidate the fundamentals of causality-oriented ethical 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 question 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 course emphasizes group discussions, critical analysis of course materials, and collective exploration of additional resources. To fully benefit from the course, students are expected to come prepared by completing the assigned readings ahead of each meeting. 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 (except for the first assignment that relies on peer-review through group work).

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:

Task	Deadline for Submission
Compose a concise exposé (including a title, causal research question, hypothesis, and Directed Acyclic Graph) and provide feedback on two other seminar participants (20 points)	Sign up: October 30, 2024 Exposé: November 27, 2024 Feedback: December 4, 2024
Design a compelling and engaging research poster to succinctly convey your study's rationale, theoretical assumptions, hypotheses, and your developed causal model. (35 points)	December 18, 2024
Drawing from the groundwork laid by previous assignments, craft a detailed exposé (3000 words, allowing a $\pm 5\%$ margin) that meticulously elucidates the intricacies of your research design (45 points)	February 5, 2025

## Grading

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

Points	Grade
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

Registration is only possible independently by the students, for the course and the exam separately via KLIPS. The deadline for exam registration will be announced following the start of the semester. Late registrations, unfortunately, cannot be accommodated. Detailed instructions and support for exam registration can be found on the Institute's website:

<https://politik.uni-koeln.de/en/studies/examinations/registration>.

## Course Schedule

Week	Subject
<b>Week 1   October 9, 13:00 – 13:30</b>	Session I: <i>Fundamentals and Varieties of Research</i>
<p>Halperin, S., &amp; Heath, O. (2017). <i>Political Research: Methods and Practical Skills</i> (2nd ed.), Oxford, New York: Oxford University Press: Chapter 2.</p> <p>King, G., Keohane, R. O., &amp; Verba, S. (1994). <i>Designing Social Inquiry: Scientific Inference in Qualitative Research</i>. Princeton: Princeton University Press: Chapter 1.</p>	
<b>Week 1   October 9, 14:00 – 15:30</b>	Session II: <i>Research Goals and Research Questions</i>
<p>Halperin, S., &amp; Heath, O. (2017). <i>Political Research: Methods and Practical Skills</i> (2nd ed.), Oxford, New York: Oxford University Press: Chapter 5.</p> <p>Day, C., &amp; Koivu, K. L. (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 23, 12:00 – 13:30</b>	Session I: <i>How to Write a Research Paper</i>
<p>Writing For Research. (2016, September 25). <i>Structuring and Writing Academic Papers</i>. Medium. <a href="https://medium.com/@write4research/structuring-and-writing-academic-papers-5ccae16c33a4">https://medium.com/@write4research/structuring-and-writing-academic-papers-5ccae16c33a4</a></p> <p>Gündoğan, B., Koshy, K., Kurar, L., &amp; Whitehurst, K. (2016). How to Make an Academic Poster. <i>Annals of Medicine and Surgery</i>, 11, 69-71.</p>	
<b>Week 2   October 23, 14:00 – 15:30</b>	Session II: <i>Conducting Ethical Research (in Times of AI)</i>
<p>European Science Foundation, &amp; All European Academies. (2011). <i>The European Code of Conduct for Research Integrity</i>. European Science Foundation.</p>	

Week	Subject
<p>Nosek, B. A., Ebersole, C. R., DeHaven, A. C., &amp; Mellor, D. T. (2018). The Preregistration Revolution. <i>Proceedings of the National Academy of Sciences</i>, 115(11), 2600-2606.</p> <p>Stockemer, D., Koehler, S., &amp; Lentz, T. (2018). Data Access, Transparency, and Replication: New Insights From The Political Behaviour Literature. <i>PS: Political Science &amp; Politics</i>, 51(4), 799-803.</p>	
<b>Week 3   November 6, 12:00 – 13:30</b>	Session I: <i>This Thing Called “Causation”</i>
<p>Rohlfing, I., &amp; Zuber, C. I. (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, N. (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 6, 14:00 – 15:30</b>	Session II: <i>Causal Models and Basic Terms</i>
<p>Huntington-Klein, N. (2021). <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapters 6 &amp; 7.</p> <p>VanderWeele, T. (2015). <i>Explanation in Causal Inference: Methods for Mediation and Interaction</i>. Oxford: Oxford University Press: Chapter 1.</p>	
<b>Week 4   November 20, 12:00 – 13:30</b>	Session I: <i>Keep That Backdoor Shut</i>
<p>Huntington-Klein, N. (2021). <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapter 8.</p> <p>Mutz, D. C. (2016). Harry Potter and the Deathly Donald. <i>PS: Political Science &amp; Politics</i>, 49(4), 722-729.</p>	
<b>Week 4   November 20, 14:00 – 15:30</b>	Session II: <i>Walking through the Front Door &amp; Mediation</i>
<p>Huntington-Klein, N. (2021). <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapter 9.</p> <p>Röth, L. (2023). Pathway Analysis, Causal Mediation, and the Identification of Causal Mechanisms. In A. Damonte, A. &amp; F. Negri (Eds.), <i>Causality in Policy Studies: A Pluralist Toolbox</i> (pp. 123-151). Cham: Springer International Publishing.</p>	
<b>Week 5   December 4, 12:00 – 13:30</b>	Session I: <i>Basics of Quantitative Designs</i>

Week	Subject
<p>Keele, L. (2015). The Statistics of Causal Inference: A View from Political Methodology. <i>Political Analysis</i>, 23(3), 313-335.</p> <p>Angrist, J. D., &amp; Pischke, J. S. (2009). <i>Mostly Harmless Econometrics: An Empiricist's Companion</i>. Princeton: Princeton University Press: Chapter 2.</p>	
<b>Week 5   December 4, 14:00 – 15:30</b>	Session II: <i>Natural Experiments</i>
<p>Dunning, T. (2008). <i>Natural Experiments in The Social Sciences: A Design-Based Approach</i>. Cambridge: Cambridge University Press: Chapter 2.</p> <p>Hyde, S. D. (2007). The Observer Effect in International Politics: Evidence From a Natural Experiment. <i>World Politics</i>, 60(1), 37-63.</p> <p>Silva, B. C., &amp; Proksch, S. O. (2021). Fake It ‘Til You Make It: A Natural Experiment to Identify European Politicians’ Benefit from Twitter Bots. <i>American Political Science Review</i>, 115(1), 316-322.</p>	
<b>Week 6   December 18, 12:00 – 13:30</b>	Session I: <i>Regression-Discontinuity Designs</i>
<p>Dunning, T. (2008). <i>Natural Experiments in The Social Sciences: A Design-Based Approach</i>. Cambridge: Cambridge University Press: Chapter 3.</p> <p>Eggers, A. C., &amp; Hainmueller, J. (2009). MPs for Sale? Returns to Office in Postwar British Politics. <i>American Political Science Review</i>, 103(4), 513-533.</p> <p>Smith, L. M., Lévesque, L. E., Kaufman, J. S., &amp; Strumpf, E. C. (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>	
<b>Week 6   December 18, 14:00 – 15:30</b>	Session II: <i>Differences-in-Differences</i>
<p>Bechtel, M. M., &amp; Hainmueller, J. (2011). How Lasting is Voter Gratitude? An Analysis of the Short- and Long-Term Electoral Returns to Beneficial Policy. <i>American Journal of Political Science</i>, 55(4), 851-867.</p> <p>Gertler, P. J., Martinez, S., Premand, P., Rawlings, L. B., &amp; Vermeersch, C. M. (2011). <i>Impact Evaluation in Practice</i>. World Bank Publications: Chapter 6.</p> <p>Huntington-Klein, N. (2021). <i>The Effect: An Introduction to Research Design and Causality</i>. Boca Raton: Chapman and Hall/CRC: Chapter 18.</p>	

Week	Subject
<b>Week 7   January 8, 12:00 – 13:30</b>	Session I: <i>Comparative Case Studies</i>
<p>Lijphart, A. (1971). Comparative Politics and the Comparative Method. <i>American Political Science Review</i>, 65(3), 682-693.</p> <p>Rohlfing, I. (2012). <i>Case studies and Causal Inference: An Integrative Framework</i>. Basingstoke: Palgrave Macmillan: Chapter 4.</p>	
<b>Week 7   January 8, 14:00 – 15:30</b>	Session II: <i>Process Tracing &amp; Wrap Up</i>
<p>Bennett, A., &amp; Checkel, J. T. (2014). Process Tracing: From Philosophical Roots to Best Practices. In A. Bennett &amp; J. T. Checkel (Eds.), <i>Process Tracing: From Metaphor to Analytic Tool</i> (pp. 3–38). Cambridge: Cambridge University Press.</p> <p>Lieshout, R. H., Segers, M. L., &amp; Vleuten, A. M. V. D. (2004). De Gaulle, Moravcsik, and the Choice for Europe: Soft Sources, Weak Evidence. <i>Journal of Cold War Studies</i>, 6(4), 89-139.</p> <p>Trampusch, C., &amp; Palier, B. (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>	