PhD Course

**Econometrics**

Block course

Time: February 1st - February 3rd, 2023, Place: Room 0029, Moorweidenstraße 18)

**Course instructor:** Professor Martin Spindler (UHH)

**Course value:** 2 SWS or 5 LP

**Course overview:**
The main goal of this course is to give an introduction to causal inference, and if time allows to recent developments, in particular on the use of Machine Learning Methods for Causal Inference. Handouts of the slides will be provided during the course. The target audience are empirical researcher / PhD students who want to apply those methods for their research.

**Topics:**

1) **Introduction to Causal Inference / Basic Framework**

2) **Methods for Causal Inference (Diff-in-Diff, IV, Propensity Score Matching, Randomized Control Trials, ...)**

3) **Recent Developments**

**Teaching language:** English

**Student evaluation:** presentation of a recent paper in a blocked session (Summer Term 2023) or presentation / written summary of a research project / idea

**Registration:** not required
Schedule (tentative)

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<th>Date</th>
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<th>Location</th>
<th>Topics</th>
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<tr>
<td>Day 1 (February 1st)</td>
<td>8:30 - 10:00</td>
<td>0029, Mo 18</td>
<td>Introduction, Basics of Causal Inference, RCT, Diff-in-Diff, Instrumental Variables Estimation</td>
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<td>10:15 - 11:45</td>
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<td>Day 2 (February 2nd)</td>
<td>10:30 - 12:00</td>
<td>0029, Mo 18</td>
<td>Regression Discontinuity, Panel Data Methods, Propensity Score Matching</td>
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<td>13:00 - 14:00</td>
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<td>Day 3 (February 3rd)</td>
<td>8:30 - 10:00</td>
<td>0029, Mo 18</td>
<td>Current research papers and recent developments</td>
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<td>10:35 - 11:45</td>
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References (advanced papers)


Athey and Imbens (2016). Recursive Partitioning for Heterogenous Causal Effects. PNAS.


