

# Causal Data Analysis

Fall Semester (2<sup>nd</sup> quarter), Academic Year 2025/2026

Course leader:	Álmos Telegdy (E224, almos.telegdy@uni-corvinus.hu)
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Department:	Institute of Economics
Course type:	Compulsory or core elective (depending on the program)
Prerequisites:	According to the training program
Credits:	6
Number of hours per semester	4+4 for 6 weeks (second quarter)
Time of lecture and seminar:	according to the Neptun system

## Aims and objectives and description of the course:

This course presents the most important techniques used in the analysis of cross sectional and panel data when the aim is to draw causal relations between two variables. The course presents these methods in a comprehensible way and places large emphasis on understanding how to interpret the results and under what conditions they can be considered as causal relations (instead of simple correlations between two variables). The discussion of the econometric methods is accompanied with examples. In the seminars students use the R software and practice how to employ the methods on real data. The course is crucial for learning how to accomplish high-quality policy analysis.

## Methodology to be used:

Teaching theory, case studies, classroom discussions, group assignments.

## Detailed class schedule:

Date of class	Topics to be discussed, readings required for the class	Readings
Week 1	A framework for causal data analysis	Ch. 19
Week 2	Designing and analyzing experiments	Ch. 20
Week 2	Regression and matching with observational data	Ch. 21
Week 3	Difference-in-differences	Ch. 22
Week 4	Methods for panel data: fixed effects and first differences	Ch. 23
Week 5	Synthetic controls and event-time analysis	Ch. 24
Week 6	Regression discontinuity design and instrumental variables	Ch. 21 + supplementary material

## **Assignments**

**Short empirical analysis:** students work in pairs. They write a short outline of the question they want to analyze and send it to the professor. Having received feedback, they write an analysis that is about 5 pages long. More information will be distributed in the class.

**Midterm exam:** the material from the material of the first weeks 1-3 (closed book exam).

**Final exam:** the material from weeks 4-6 (closed book exam).

## **Assessment, grading**

This is a practical course, and the assessment is based on a “term mark.” There will not be a final exam, but students gather points during the course, based on the following activities.

- 30% - short empirical paper (1 Dec – outline, 14 Dec – final)
- 35% - midterm examination (24 Nov, seminar)
- 35% - second examination (15 Dec)

In order to pass the course, students must achieve 50% in each assignment: (1) midterm examination, (2) final examination, (3) empirical analysis.

## **Class participation**

Class participation is compulsory.

## **Plagiarism**

Any and all statements contained in any assignment or paper that are based upon ideas or words of another must be properly credited to the original author or source. Paraphrasing the ideas or words of another is acceptable so long as the original author or source is cited. DO NOT quote words or expressions from existing works verbatim without designating the passage as a quote and crediting the source. Any student who plagiarizes the work of any other person (author, professor, student, parent, friend, etc.) is committing academic dishonesty and misconduct.

Any student committing plagiarism will be automatically given 0 point for that assignment.

## **Compulsory readings**

We follow the following textbook: Gábor Békés – Gábor Kézdi (2021), Data Analysis for Business, Economics and Policy. Cambridge University Press, Part IV. In several topics, the course slides will have additional material.

**Grade Conversion Table for Programs and Courses taught in English**

<i>Percentage achieved</i>	<i>Hungarian Grade</i>	<i>ECTS Grade</i>	<i>International Grade</i>	<i>Explanation</i>
97-100	5	A	A+	Excellent
94-96	5	A	A	Excellent
90-93	5	A	A-	Excellent
87-89	5	B	B+	Excellent/Very good
84-86	4	C	B	Good
80-83	4	C	B-	Good
77-79	4	C	C+	Good
74-76	3	D	C	Satisfactory
70-73	3	D	C-	Satisfactory
67-69	3	D	D+	Satisfactory
64-66	2	D	D	Low pass/Sufficient
51-63	2	E	D-	Low pass/Sufficient
0-50	1	FX/F	F	Fail, 0 credit
	N		N	No grade received, 0 credit