

# SOSxxxx - Research Designs for Causal Inference

## Course content

This course offers an introduction to several research designs particularly suited to making causal inferences. Social scientists routinely ask causal questions such as “*Does divorce affect children’s school performance?*” and “*Does family policies affect gender relations?*” Questions of this type are notoriously difficult to answer, and many sociologists have traditionally been very careful not to voice any causal ambition on behalf of their empirical analyses.

Researchers in the social sciences now have at their disposal a wide array of tools that allows them to provide more plausible answers to causal questions. In this course, participants will be introduced to and trained in a selection of the most commonly used and most powerful of these tools.

Taking the counterfactual model of causal effects as the point of departure, the problems associated with drawing causal inferences from observational data will be discussed. From these, the course moves on to demonstrations of various research designs that are particularly well suited for establishing causal effects. These include regression discontinuity designs, panel data methods including «differences-in-differences», and instrumental variable models.

The course is applied, in the sense that it is taught through a combination of lectures and computer lab sessions where participants will replicate results from exemplary studies. Time will also be allotted to critically discuss empirical challenges from the participants’ own research projects.

## Learning outcome

### Knowledge

- Of the counterfactual model for causal effects
- Of the problems associated with drawing causal inferences from observational data
- Of various research designs that are well suited for establishing causal effects

### Skills

- To evaluate if research use appropriate statistical methods to establish causal effects

- To use advanced statistical techniques using observational data in Stata
- To present your work in the form of journal articles

### **Competences**

- To critically assess research designs using observational data
- To choose appropriate research methods

### **Admission**

Students who are admitted to study programmes at UiO must each semester register which courses and exams they wish to sign up for [in Studentweb](#).

If you are not already enrolled as a student at UiO, please see our information about [admission requirements and procedures](#).

This course is a part of the Master's program in Sociology. This course is aimed at doctoral students, researchers and talented master students in the social sciences with an interest in causal inference. Participants should have a good working knowledge of applied regression analysis. Prior exposure to Stata is an advantage.

Interested external master students and participants outside the Department of Sociology and Human Geography shall fill out this [application form](#).

The application deadline is four weeks prior the course.

## **Prerequisites**

### **Formal prerequisite knowledge**

- Bachelor's degree.
- [SOS1120 Kvantitativ metode](#) or equivalent
- [SOS4020 Kvantitativ metode](#) or equivalent

### **Overlapping courses**

- 6 credits overlap with [SOS9019 Research Designs for Causal Inference](#)

## **Teaching**

The course will be organized as lectures, seminars, and labs. This course is taught at the University of Oslo, Blindern campus, Harriet Holter's House.

The lectures are given in English.

**Participation in the lectures and seminars is mandatory** (note that you must be present at 6 out of 7 lectures/seminars). Approved compulsory attendance is valid until the course is no longer offered.

### **Absence from compulsory tuition activities**

If you are ill or have another valid reason for being absent from compulsory tuition activities, [your absence may be approved or the compulsory activity may be postponed](#).

### **Instructors**

[Andreas Kotsadam](#) holds a Ph.D. from the University of Gothenburg.

[Niklas Jakobson](#) holds a Ph.D. from University of Gothenburg. Both publish in several social science disciplines.

## **Examination**

Masters participants obtain 10 ECTS credits by completing the course requirements which are:

- active participation in the course
- submission of a homework (referee reports)
- Oral exam or presentation of a research proposal

### **Use of sources and citation**

You should familiarize yourself with the rules that apply to [the use of sources and citations](#). If you violate the rules, you may be suspected of [cheating/attempted cheating](#).

### **Language of examination**

The students can choose whether they will write the paper and exam in English, Norwegian, Swedish or Danish.

### **Grading scale**

Grades are awarded on a pass/fail scale. Read more about [the grading system](#).

## **Explanations and appeals**

It is recommended to request an explanation of your grade before you decide to appeal.

### **Appeal**

- [Appeal about grades](#)
- [Complaint about formal exam errors](#)

### **Explanation**

The deadline to request an explanation is one week after the grade is published. For oral and practical examinations, the deadline is immediately after you have received your grade.

The explanation should normally be given within two weeks after you have asked for it. The examiner decides whether the explanation is to be given in writing or verbally.

Ask for explanation of your grade in this course:

- home assignment

### **Withdrawal from an examination**

If you wish to withdraw from the exam you must do so in Studentweb at least two weeks [prior to the deadline](#). Failure to do so will be counted as one of the three opportunities to sit the exam.

## **Evaluation**

The course is subject to continuous evaluation. At regular intervals we also ask students to participate in a more comprehensive evaluation.