



## DEPARTMENT OF EDUCATION AND SPECIAL EDUCATION

### **FOU1802, Quantitative research methods in educational research, 5 credits**

Kvantitativa metoder i utbildningsvetenskaplig forskning, 5 högskolepoäng

*Third-cycle level / Forskarnivå*

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#### **Confirmation**

This syllabus was confirmed by the Department of Education and Special Education on 2018-10-11, and was last revised on 2025-03-31. The revised course syllabus is valid from Autumn semester 2025.

#### ***Responsible Department***

Department of Education and Special Education, Faculty of Education

#### **Entry requirements**

For admission to the course, the doctoral student has to be registered as a student in the third cycle in educational sciences or another social science or behavioural science subject.

#### **Learning outcomes**

The course is primarily a formative course that aims to develop participants' general research methodological competence and critical thinking to a level commensurate with a researcher within the discipline. In line with that aim, after completed course the student should be able to:

##### ***Knowledge and understanding***

- account for fundamental concepts in research ethics and good research practice in accordance with Swedish and European standards;
- explain key terms and concepts and analytical techniques at a conceptual level;
- describe what is contained in the notion of validity, including its most common sub-categories and threats to validity.

##### ***Competence and skills***

- discuss quantitative methodologies' possibilities and limitations;

- critically discuss scientific projects and articles with respect to their research design and methods, using appropriate terminology and conceptual tools.

### *Judgement and approach*

- evaluate the relevance of different analytical approaches in relation to research questions, databases and scientific claims;
- reflect on questions of research ethics and related decisions.

## **Course content**

The course will cover how quantitative methods may be used in researching educational science research questions. Point of departure in the course are basic social science methods with further contributions taken from recent developments in measurement theory. The course will also cover how problem statements and scientific claims can be coupled to measurement issues, research methods design and analysis. Validity, reliability and generalizability are central quality criteria that should be observed in all phases of the research process, as are considerations pertaining to research ethics. During the course students will discuss methodological issues and steps that can or should be taken for analyses and conclusions to be regarded as valid.

Through the course participants will acquire an overview and conceptual understanding of both basic quantitative research methodology as well as more advanced qualitative methods lying at the forefront of the educational science research tradition. The focus lies partly on the internal logic of quantitative methods in relation to pedagogical and social scientific research questions, and partly on key scientific concepts and quantitative research terminology.

## **Types of instruction**

Lectures and seminars.

### *Language of instruction*

The course is given in Swedish but can be given in English if necessary

## **Grades**

The grade Pass (G) or Fail (U) is given in this course.

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The grading scale includes the Fail (U) and Pass (G) degrees. Pass means that the learning outcomes have been achieved.

## **Types of assessment**

To pass the course, active participation in the seminars and course tasks is required, along with successful completion of the course's two examination assignments; a written essay and an oral presentation. Both tasks consist of critically reflecting on various validity aspects in relation to

research design, measurement, analysis, results and knowledge claims, as well as reflecting upon relevant research ethical aspects. In the written essay, such a discussion is conducted in relation to a published quantitative study, while the oral presentation consists of discussing corresponding aspects in relation to one's own dissertation study.

## **Course evaluation**

The course will be evaluated after the course. The results will function as a guide for further development of the course.

## **Other information**

Priority to the course are given to doctoral students at the Faculty of Education at the University of Gothenburg, or to doctoral students enrolled in the research school CUL (Centre for Education Science and Teacher Research) .