

## Introduction to Design of Quantitative Research, 3.5 credits

Introduktion till design av kvantitativa studier, 3,5 högskolepoäng

<b>Course code:</b>	FOUK031
<b>Host School:</b>	School of Education, Culture and Communication
<b>Valid from:</b>	Date of decision
<b>Established by:</b>	Dean of the School
<b>Decision date:</b>	2024-11-19
<b>Last modified:</b>	--
<b>Level of education:</b>	Third cycle level
<b>Language:</b>	English

### Course objective

The course teaches participants to develop fundamental knowledge of quantitative methods in scientific studies. The course introduces fundamental concepts for the design of quantitative studies.

### Course content

- Quantitative research traditions (theory/philosophy of science)
- Design of quantitative studies including sampling and data collection and their possibilities and limitations
- Key statistical concepts
- Descriptive statistics
- Basic analysis of quantitative data including correlation analysis and hypothesis testing (such as mean comparison tests and regression analysis)
- Reliability and validity in quantitative studies

### Intended learning outcomes

After completing the course, the doctoral student should be able to:

1. understand main concepts in quantitative methods and assess their applicability in their own contexts.

2. design a quantitative study using appropriate data collection tools and data analyses.
3. comprehend and critically discuss the design, use and results of quantitative methods in scientific articles (within the doctoral student's field of research).

## **The intended qualitative targets in the Higher Education Ordinance, appendix 2.**

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

For the Degree of Doctor, the doctoral student shall demonstrate:

- A2: familiarity with research methodology in general and the methods of the specific field of research in particular.

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

For the Degree of Doctor, the doctoral student shall demonstrate:

- B1: the capacity for scholarly analysis and synthesis as well as to review and assess new and complex phenomena, issues and situations autonomously and critically,
- B2: the ability to identify and formulate issues with scholarly precision critically, autonomously, and creatively, and to plan and use appropriate methods to undertake research and other qualified tasks within predetermined time frames and to review and evaluate such work,

### ***Judgement and approach***

For a Degree of Doctor, the doctoral student shall demonstrate

- C2: specialised insight into the possibilities and limitations of research.

## **Teaching formats**

Lectures, computer labs and seminars.

## **Examination**

SEM1, active participation in seminars and computer labs, 1 credit, relevant to learning outcomes 2 and 3, grade fail (U) or pass (G).

INL1, written assignment, 2.5 credits, relevant to learning outcome 1 and 3, grade fail (U) or pass (G).

## **Grade**

Two-grade scale fail (U) or pass (G).

A person who has not passed the regular examination shall be given the opportunity to retake the test.

## **Requirements**

To participate in the course and the examinations included in the course, the applicant must be admitted to doctoral studies.

## **Selection criteria**

Selection of applicants will be made in accordance with the ranking below.

1. Doctoral students at Mälardalen University.
2. Doctoral students at other higher education institutions.
3. Teachers at Mälardalen University who hold a PhD.

## **Transitional and other provisions**

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