

Department of Special Education



Syllabus

for research course

**Quantitative Methods, Analysis and Strategies in
Special Educational Research**

**Kvantitativa metoder, analys och strategier
i specialpedagogisk forskning**

**7.5 Higher Education
Credits**

7.5 ECTS credits

Course code:	UQ010FU
Valid from:	Fall semester 2020
Date of approval:	2020-03-03
Department	Department of Special Education
Subject:	Special Education

Decision

Course plan approved by the Board of the Department of Special Education.
PhD Course Doctoral programme in Special Education directed towards Early
Interventions in Early Childhood Education.

Prerequisites and special admittance requirements:

Admitted to a PhD program. PhD students admitted to the Doctoral program in
Special Education directed towards Early Interventions in Early Childhood Education
have priority.

Behörighetskrav: Studenter som är antagna till forskarutbildning har behörighet att gå
kursen. Forskarstuderande som är antagna till Forskarskolan i specialpedagogik med
inriktning mot tidiga insatser i lärandemiljöer inom förskola och under de första
skolåren har företräde.

Learning outcomes

After having completed the course, course participants will be able to:

- Attain knowledge on analysis methodologies and their applications to various types of data,
- Apply appropriate quantitative methods to data, in relation to hypotheses and research questions, in particular in the field of educational science,
- Make interpretation and explanations of results of numeric or graphical outputs,
- Achieve awareness of some current issues, standpoints and debates in quantitative methods and analysis,
- In relation to own research studies, find arguments with support in previous research to motivate some methodological applications,
- Reflect on various alternatives, consider and deliberate in quantitative method issues based upon current literature,
- Identify strengths and weaknesses in own and others' analyses and suggest possible improvements.

Course content

The course gives the student an overview of basic statistic theory and methods: measurements, confidence interval, correlation, t-test, variance analysis, regression.

The course gives introductions to specific methods and applications, related to research questions taken from current research, including practical work with three methods and analysis of data and interpretation of graphical or numeric outputs: for example, correlation, analysis of variance, regression, confirmatory factor analysis, non-parametrical analysis methods, single-case research methods.

The topics of the seminars cover methodological issues: i.e. comparison of methods in analysis of intervention effects or differences between groups (structural equation modelling and regression approaches); myths, critique and debates on various contents (i.e. missing data, construct validation procedure, reliability and validity, factor analysis).

Education

The course's activities will be to a large extent web based, but they include one or more on-site meetings.

The course consists of three modules:

- 1) individual module with self-paced video-recorded lectures;
- 2) small group module with three workshops;
- 3) whole group module with three method seminars and a final seminar.

The participation to the scheduled workshops and seminars is mandatory. Internet connection of high quality is required. The workshops require familiarity with SPSS and practical exercises are included. If workshop requires other programs or applications the necessary information about their installation will be provided in advance.

Forms of examination

Oral and written examinations. The individual module (module 1) is examined with a final questionnaire; the workshops' goals (module 2) are targeted with formative assessments; the seminars' goals (module 3) are assessed both with formative assessment and a final summative assessment.

Course literature

Current list of literature is published on the institution's website www.specped.su.se . Current list of literature is available no later than two months before the start of the course.