UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Research Methods: Statistics and Data Analysis in Cognitive Neuroscience G1F

7.5 credits

Course code: KU346G
Version number: 4
Valid from: 1 July 2024
Ratified by: Curriculum Committee for Bioscience
Date of ratification: 25 January 2024

1. General information about the course

The course is provided by the University of Skövde and is named Research Methods: Statistics and Data Analysis in Cognitive Neuroscience G1F (Forskningsmetoder: statistik och dataanalys i kognitiv neurovetenskap G1F). It comprises 7.5 credits and is a first-cycle course. The level of progression is G1F.

The course is a part of the main field of study in Cognitive Neuroscience. The disciplinary domain of the course is Natural Sciences.

2. Entry requirements

Admission to the course requires passed courses worth 30 credits in the main field of cognitive neuroscience, including the course KU137G Basic Research Methods and Philosophy of Science G1N (or the equivalent).

3. Course content

This course provides theoretical and practical knowledge in statistics and data analysis, as applied within cognitive neuroscience. This includes an overview of central concepts (e.g., sampling and population distributions, estimation, models, and experimental designs), a review of various approaches for flexibly analyzing data, and an introduction to the more specific topics of systematic reviews and meta-analyses. In addition, this course will also give students practical experience in applying this knowledge in order to analyze empirical data using statistical software.

4. Objectives

After completed course the student should be able to:

- describe some of the central ideas in research methodology and statistics, such as measures of central tendency, distributions, and estimation,
- evaluate various statistical methods and analyze data using both statistical modelling and classical statistical tests,
- complete the basic steps of a systematic review and meta-analysis, and
- critically assess strengths and weaknesses of applied methodology and statistics in research articles.

5. Examination

The course is graded A (Excellent), B (Very good), C (Good), D (Satisfactory), E (Sufficient) or F (Fail).

A final grade of the course is only issued when both the examination parts in the course have been passed.

In order to be examined for the component Oral presentation, the student must have already passed the component Written assignments.

The examinations of the course consist of the following modes of assessment:

- **Written assignments**
  5 credits, grades: A/B/C/D/E/F (determines the final grade)
- **Oral presentation**
  2.5 credits, grades: G/U

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of lectures and workshops.

The teaching is conducted in English.

7. Course literature and other educational materials

Field, A. (2017). *Discovering statistics using IBM SPSS Statistics* (5th ed.). London: SAGE. ISBN 9781526419521.

Scientific articles and other relevant materials may be added according to the teacher's instructions.

Reference literature

American Psychological Association (2020). *Publication Manual of the American Psychological Association* (7th ed.). Washington, DC: American Psychological Association. ISBN 9781433832161.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.