Research Methodology and Statistics

Forskningsmetodik och statistik
9 credits

Programme course

729G48

Valid from: 2026 Spring semester

Determined by	**Main field of study**	
Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Cognitive Science	
Date determined	**Course level**	**Progressive specialisation**
2018-11-13	First cycle	G1N
Revised by	**Disciplinary domain**	
Chairman of the Course and Programme Syllabus Board at the Faculty of Arts and Sciences	Social sciences	
Revision date	**Subject group**	
2025-04-24	Other Subjects within Social Science	
Offered first time	**Offered for the last time**	
Spring semester 2019		
Department	**Replaced by**	
Institutionen för beteendevetenskap och lärande		

Course offered for

- Bachelor's Programme in Cognitive Science

Entry requirements

General entry requirements for undergraduate studies
and
Social Studies, English and Mathematics corresponding to the level in Swedish upper secondary education (Samhällskunskap 1b or 1a1 and 1a2, Engelska 6, Matematik 2a/2b/2c or Matematik B)

Intended learning outcomes

After completion of the course, the student should be able to:

- formulate scientific hypotheses and use statistics to test them
- describe different measurement scales, distributions and statistical tests
- assess scientific work
- describe scientific practice and research ethics
- discuss and motivate choice of theory, method, analysis, and interpretation of results in a study
- conduct and report a scientific study
- apply criteria to constructively oppose another's work
- assess and discuss reliability and validity in scientific studies.

Course content

The course will cover the following areas:

- Scientific method
- Experimental and non-experimental design
- Control, sampling, measurement, levels of measurement, power
- Reliability and validity
- Ethical considerations in research
- Descriptive statistics, inferential statistics, and non-parametric statistics
- Designing, conducting and reporting scientific studies in within cognitive science
- Opposing and defending report

Teaching and working methods

Teaching will take the form of lectures, seminars, practicals and labs. Students are expected to work independently, both alone and in groups.

Examination

The course will be examined through individualtake-home exam, group take-home exam, group assignments, and active participation in seminars. Detailed information can be found in the course study guide.

If special circumstances prevail, and if it is possible with consideration of the nature of the compulsory component, the examiner may decide to replace the compulsory component with another equivalent component.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it.

If the coordinator has recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

An examiner may also decide that an adapted examination or alternative form of examination if the examiner assessed that special circumstances prevail, and the examiner assesses that it is possible while maintaining the objectives of the course.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

Grades

Three-grade scale, U, G, VG

Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is conducted in such a way that there are equal opportunities with regard to sex, transgender identity or expression, ethnicity, religion or other belief, disability, sexual orientation and age.

If special circumstances prevail, the vice-chancellor may in a special decision specify the preconditions for temporary deviations from this course syllabus, and delegate the right to take such decisions.

About teaching and examination language

The teaching language is presented in the Overview tab for each course. The examination language relates to the teaching language as follows:

- If teaching language is “Swedish”, the course as a whole could be given in Swedish, or partly, or as a whole, in English. Examination language is Swedish, but parts of the examination can be in English.
- If teaching language is “English”, the course as a whole is taught in English. Examination language is English.
- If teaching language is “Swedish/English”, the course as a whole will be taught in English if students without prior knowledge of the Swedish language participate. Examination language is Swedish or English depending on teaching language.