



INSTITUTE OF MEDICINE

SM00046 Medical statistics 1, 5 credits

Medicinsk statistik 1, 5 högskolepoäng

Third-cycle level / Forskarnivå

Confirmation

This syllabus was confirmed by the Council for PhD Education at Sahlgrenska Academy on 2018-12-12, and was last revised on 2019-01-24. The revised course syllabus is valid from Spring semester 2019.

Responsible Department

Institute of Medicine, Sahlgrenska Academy

Entry requirements

Admitted to postgraduate education. Completed the course "Introduction to research".

Learning outcomes

After completing the course the student is expected to be able to:

Knowledge and understanding

- Account for the basic concepts and principles of hypothesis testing.
- Define the theoretical assumptions for the tests.

Competence and skills

- Formulate the research in terms of models.
- Use appropriate tests for different research questions.
- Apply the tests with common statistical software and interpret the output.
- Discuss choice of methods with statisticians.

Judgement and approach

- Appraise statistical results presented in for example scientific papers.

Course content

An introductory course that covers categorical and numerical data, measures of location and dispersion, histograms, box plots, bar diagrams, scatter plots, normal distribution, hypothesis testing, confidence intervals, p-values, power and agreement. Five important areas:

1. Two sample t-test
2. Paired t-test
3. Non-parametric tests
4. Chisquare tests on contingency tables
5. Linear regression

Some corresponding nonparametric alternatives to the above tests. Logistic regression, ANOVA and survival analysis will be introduced. Statistical software labs with main focus on SPSS.

Types of instruction

Lectures, computer exercises.

Language of instruction

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

The course will be given in English and Swedish, respectively, once per term.

Grades

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

Types of assessment

Mandatory home assignments and computer exercises.

A student has the right to request a change of examiner if failed twice on the same exam, if this is practically possible. Such a request should be put forward in writing and addressed to the department.

Course evaluation

Course evaluation is carried out in writing with the aid of the Sahlgrenska Academy's common course evaluation, and orally via a dialogue with the students. The teacher responsible for the course compiles an analysis of the course evaluations and makes suggestions for the development of the course. Analyses and suggestions are conveyed to the students and published on the University of Gothenburg's learning platform, GUL.

Other information

This syllabus was confirmed by the Council for PhD education at Sahlgrenska Academy on 15-09-2015, and was last revised on 28-08-2018. The revised course syllabus is valid from the spring

semester 2019. It was entered into FUBAS on 24-01-2019.