

Linear Statistical Models

Single subject and programme course

15 credits

Sambandsmodeller

732G21

Valid from:

Determined by

The Quality Board at the Faculty of Arts
and Sciences

Date determined

2007-01-22

Revision date

2013-06-13

Main field of study

Statistics

Course level

First cycle

Advancement level

G1X

Course offered for

- Bachelor's Programme in Statistics and Data Analysis

Specific information

The course is disused. Offered for the last time Autumn semester 2017.

Examination is offered on a total of at least five occasions for each examination component.

These occasions should be distributed across at least two semesters following the final ordinary course instance. These can be found in the course's last course room in Lisam.

Contact the department to access the course room.

Entry requirements

For admission to the course, the student is required to have completed the courses Introduction to Statistical Methodology, Analysis of Public Statistics and Linear Algebra in the Programme for Statistics and Data Analysis, or the equivalent.

Intended learning outcomes

The aim of the course is that the student acquires knowledge and skills in analysing correlations between variables, which is required for qualified work as a statistician.

On completion of the course, the student should

- be able to apply knowledge of the most common methods in analysis of linear correlations,
- demonstrate a good understanding of the principles of selection, estimation and validation of linear statistical models,
- have the ability to use appropriate linear models to study correlations between variables in data,
- be able to use statistical software to carry out the analyses,
- in a knowledgeable way, be able to assess the quality of given amounts of data and the generalisability based on identified correlations in the data.

Course content

The following is studied in the course:

- simultaneous inference for multiple random samples,
- models for one-way and two-way analysis of variance with both fixed and random effects,
- analysis of contrasts and paired comparison,
- introductory experimental design with block experiments,
- non-parametric analytical methods,
- covariance and correlation,
- simple and multiple linear regression analysis, polynomial regression, simple models of time series regression, regression models of unbalanced experimental design and covariance analysis, logistic regression, Poisson regression with model selection methods and non-parametric regression analysis,
- algebraic description,
- degrees and categorical explanatory variables,
- multicollinearity problems and model selection methods,
- analysis of divergent observations,
- multiplicative models, hierarchical models.

Teaching and working methods

The teaching takes the form of lectures, computer exercises, calculation exercises, supervision in groups and project seminars.

Language of instruction: Swedish.

Examination

The course is examined through a written examination and through written assignments that should be presented in writing.

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 carried out in such a way that both men's and women's experience and knowledge is made visible and developed.

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 carried out in such a way that both men's and women's experience and knowledge is made visible and developed.

Department

Institutionen för datavetenskap