Multivariate Methods

Single subject and programme course

7.5 credits

Multivariata metoder

732G08

Valid from: 2010 Autumn semester

Determined by
The Quality Board at the Faculty of Arts and Sciences

Date determined
2007-10-05

Revision date
2011-09-28; 2018-03-22

Main field of study
Statistics

Course level
First cycle

Advancement level
G1X

Course offered for
- Bachelor´s Programme in Statistics and Data Analysis

Entry requirements
The student must have passed courses in statistics corresponding to at least one year of full-time undergraduate studies. Also linear algebra is required.

Intended learning outcomes
Having completed the course, the student should be able to
- use knowledge about the most common multivariate methods
- display good understanding of major principles for interpretation and assessment of multivariate models
- use a standard statistical computer package to estimate and assess components from a given data set with multivariate methods
- verbally interpret the results from an analysis of multivariate models

Course content
The course provides basic skills for professional work with statistical problems with several correlated random variables.
Multivariate normal distributions. Distributions of quadratic forms. Confidence regions and test. Principal components
analysis. Factor analysis. Discriminant analysis. Cluster analysis. Canonical correlation. Multidimensional
scaling.

Teaching and working methods
Computer exercises in which the students have access to supervision provide practical experience of data analysis. The teaching comprises lectures and computer exercises.

Examination

The course is examined by exercises and by an oral or a written exam.

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 instead 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.

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.

Department

Institutionen för datavetenskap