

Multivariate Methods

Multivariata metoder
7.5 credits

Single subject and programme course

732G08

Valid from: 2010 Autumn semester

Determined by	Main field of study	
The Quality Board at the Faculty of Arts and Sciences	Statistics	
Date determined	Course level	Progressive specialisation
2007-10-05	First cycle	G2F
Revised by	Disciplinary domain	
	Social sciences	
Revision date	Subject group	
2011-09-28; 2018-03-22	Statistics	
Offered first time	Offered for the last time	
Autumn semester 2007		
Department	Replaced by	
Institutionen för datavetenskap		

Course offered for

- Bachelor's Programme in Statistics and Data Analysis

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 3b or 3c)
- 60 ECTS credits passed from semester 1 and 2 and at least 30 ECTS credits passed from semester 3 and 4 Bachelor's Programme in Statistics and Data Analysis

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

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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.