

School of Economics and Management

STAN41, Statistics: Multivariate Analysis, 7.5 credits Statistik: Multivariat analys, 7,5 högskolepoäng Second Cycle / Avancerad nivå

Details of approval

The syllabus was approved by The Board of the Department of Statistics on 2018-12-03 to be valid from 2019-09-02, autumn semester 2019.

General Information

Second cycle level course in statistics. The course is a mandatory course in the Master's programme in Statistics. The course may also be taken as a single subject course or within other Master's programmes at Lund University.

Language of instruction: English

Main field of studiesDepth of study relative to the degree
requirementsStatisticsA1N, Second cycle, has only first-cycle
course/s as entry requirements

Learning outcomes

Knowledge and understanding

For a passing grade the student shall

- demonstrate knowledge and understanding of analysing multivariate data,
- demonstrate knowledge of the range multivariate techniques available, and
- demonstrate understanding of the link between multivariate techniques and corresponding univariate techniques.

Competence and skills

For a passing grade the student shall

• demonstrate the ability to summarise and interpret multivariate data,

- demonstrate the ability to apply multivariate techniques and undertake multivariate hypothesis testing,
- demonstrate the skill to perform basic matrix calculations, and
- demonstrate the skill to handle multivariate data.

Judgement and approach

For a passing grade the student shall

- demonstrate the ability to select an appropriate multivariate technique to solve a given problem, and
- demonstrate the ability to draw appropriate conclusions from multivariate hypothesis testing.

Course content

The central theme of the course is the multivariate general linear model, and statistical methods include multivariate hypothesis testing, principal component analysis, factor analysis, discriminant analysis, canonical correlation analysis, and multivariate analysis of variance and covariance and cluster analysis. The course covers theoretical, computational, and interpretive issues of multivariate techniques using computer solution.

Course design

The course is designed as series lectures, exercises and laboratory work.

Assessment

The examination consists of a written exam, home work assignments, laboratory reports and a project.

The university views plagiarism very seriously, and will take disciplinary actions against students for any kind of attempted malpractice in examinations and assessments. Plagiarism is considered to be a very serious academic offence. The penalty that may be imposed for this, and other unfair practice in examinations or assessments, includes suspension from the University for a specified period.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Subcourses that are part of this course can be found in an appendix at the end of this document.

Grades

Marking scale: Fail, E, D, C, B, A.

A (Excellent) 85-100 points/percent. A distinguished result that is excellent with

regard to theoretical depth, practical relevance, analytical ability and independent thought.

B (Very good) 75-84 points/percent. A very good result with regard to theoretical depth, practical relevance, analytical ability and independent thought.

C (Good) 65-74 points/percent. The result is of a good standard with regard to theoretical depth, practical relevance, analytical ability and independent thought and lives up to expectations.

D (Satisfactory) 55-64 points/percent. The result is of a satisfactory standard with regard to theoretical depth, practical relevance, analytical ability and independent thought.

E (Sufficient) 50-54 points/percent. The result satisfies the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought, but not more.

F (Fail) 0-49 points/percent. The result does not meet the minimum requirements with regard to theoretical depth, practical relevance, analytical ability and independent thought.

To pass the course, the students must have been awarded the grade of E or higher.

Entry requirements

90 credits in Statistics, or the equivalent.

Applies from H11

1101 Examination, 7,5 hp Grading scale: Fail, E, D, C, B, A
11L1 Case Studies, 0,0 hp Grading scale: Fail, Pass