



Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

1MA203 Linjära statistiska modeller, 7,5 högskolepoäng
Linear Statistical Models, 7.5 credits

Main field of study

Mathematics

Subject Group

Mathematics

Level of classification

First Level

Progression

G1F

Date of Ratification

Approved by Organisational Committee 2009-12-01

The course syllabus is valid from autumn semester 2010

Prerequisites

The course 1MA201 Probability Theory, 7.5 hec or the equivalent.

Expected learning outcomes

The student shall be able to:

- Understand and describe the basic linear models in statistics
- Apply the results in order to perform statistical computations
- Recall the definitions of basic notions, be able to relate them, and to use the connections in order to solve statistical problems
- Interpret, communicate and lead an argument in statistical settings, in particular solve assessment problems in small groups and present them to an auditorium
- Recall the assumptions and distributions for the various regression models, apply them to real data and interpret the results
- Check whether the chosen regression parameters are reasonable
- Explain the relationship between simple linear regression and the analysis of correlations
- Recall the assumptions and distributions for the used for ANOVA, apply them to real data and interpret the results.

Content

The course contains:

- estimation and inference for multivariate data

- correlation analysis
- simple and multi linear regression
- one-and multisided analysis of variance
- counting partitions
- non parametric models

Type of Instruction

Lectures and seminars. Compulsory assignments may be given during the course.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

The student's knowledge is assessed in the form of oral and/or written examinations and/or presentation of mandatory assignments. The principal assessment method for the course is determined at the beginning of the course.

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Course Evaluation

After the course a written evaluation of the course will take place according to the University guidelines.

Required Reading and Additional Study Material

Required reading

Milton, J S & och Jesse, C. A. *Introduction to Probability and Statistics: Principles and Applications for Engineering and the Computing Sciences*, McGraw Hill, 2004. pp. 378-569 (798)