Multiple Regression and Time Series Analysis

Single subject and programme course

8 credits

Statistik B

732G71

Valid from: 2010 Autumn semester

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

Date determined
2008-10-14

Main field of study
Statistics

Course level
First cycle

Advancement level
G1F

Course offered for
- Business and Economics Programme

Entry requirements
and completed Introductory Statistics, or the equivalent.

Intended learning outcomes
On completion of the course, the student should be able to
- formulate, adapt, analyse and interpret models of simple and multiple linear regression and classical models of time series data
- assess adjusted regression models and select models based on different criteria
- carry out and assess forecasts from adapted models
- apply knowledge of models and methods for regression and time series analysis to solve issues in economic and business economic studies.

Course content
The aim of the course is that the student should acquire methodology to analyse and interpret statistical models of relationship between variables and statistical models of time series data.
- Models for simple and multiple linear regression: formulation, adaptation, statistical inference for estimated parameters, forecasts for new values, non-linear and qualitative explanatory variables, residual analysis, multicollinearity, divergent observations, model selection models, exponential models and elasticity models.
- Models for time series data: time series regression, classical decomposition, exponential smoothing methods for forecasting. Analysis of data by means of statistical software.
- Project work with issues related to existing data of an economic or business economic nature.

Teaching and working methods

The teaching takes the form of scheduled lectures, teaching sessions, computer exercises and assisted problem solving. The teaching sessions are held as supervised exercise sessions, while the computer exercises and assisted problem solving are independent work with access to supervision. The project work is carried out in groups outside of scheduled time. Furthermore, the student should exercise self-study.

Examination

The course is examined through a written examination and written project presentations.

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.
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Department

Institutionen för datavetenskap