

# Multiple Regression and Time Series Analysis

Single subject and programme course

8 credits

Statistik B

732G71

Valid from:

**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

G1X

## 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.

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