

# Syllabus

for course at first level

**Regression Analysis and Survey Methods**  
**Regressionsanalys och undersökningsmetodik**

**15.0 Higher Education  
Credits**  
**15.0 ECTS credits**

**Course code:** ST123G  
**Valid from:** Autumn 2011  
**Date of approval:** 2010-10-06  
**Department** Department of Statistics  
**Subject** Statistics

## Decision

This syllabus was approved by the Board of the Department of Statistics on June 6, 2010.

## Prerequisites and special admittance requirements

Fundamentals of Statistics, first level, 15 ECTS credits or equivalent or admitted to the Bachelor Programme in Economics and Statistics.

## Course structure

Examination code	Name	Higher Education Credits
12RI	Compulsory Exercise in Regression and Time Series Analysis	3
13UT	Survey Methods	4.5
14UI	Compulsory Exercise in Survey Methods	3
11RT	Regression and Time Series Analysis	4.5

## Course content

The course consists of four course units:

1. Regression and Time Series Analysis
2. Compulsory exercise in Regression and Time Series Analysis
3. Survey Methods
4. Compulsory exercise in Survey Methods

Course units 1 and 2: Regression and Time Series Analysis

The course units treat basic statistical methods and models for analysis of relationships among variables (regression analysis) and analysis of the development of variables over time (time series analysis). Simple and multiple linear regression are studied in detail, other models such as logistic and nonlinear regression are presented more generally. Model evaluation. The course also gives an introduction to time series analysis. Predictions.

Course units 3 and 4: Survey Methods

The course units provide the student with knowledge of how to plan and conduct statistical surveys, sampling methods and survey methods.

The concepts more thoroughly treated are:

Planning, conducting and reporting of a statistical survey. Different methods for data collection and sources of information. Protection of statistical information. Questionnaire design. Different sampling methods and estimation methods. Different types of error in a survey. Quality reporting. Practical examples from different areas of application and critical review.

Statistical software is used throughout the course.

The content of the course gives extended knowledge of great use for studies of, and applications of, statistical methods in several fields.

### **Learning outcomes**

After completing the course the student should be able to:

- apply multiple linear regression analysis and basic time series analysis, with accompanying statistical inference and model evaluation
- account for more advanced regression models and time series models, such as logistical regression, decide when these models are applicable and analyse the results from studies where these methods have been used
- plan a statistical survey including designing a questionnaire
- justify and conduct different types of random samplings
- solve elementary problems in sampling theory and estimation theory
- account for concepts, methods and theories used when conducting statistical surveys

### **Education**

Teaching forms may consist of lectures, exercises, seminars, computer sessions and tutoring. Some compulsory attendance and other mandatory elements may be required.

### **Forms of examination**

a. Examination will be done by assessing the learning outcomes. Examination will comprise written tests and written reports of compulsory group exercises.

b. Grading is done according to a seven-point scale related to the specified learning outcomes:

A = Excellent  
B = Very Good  
C = Good  
D = Satisfactory  
E = Adequate  
Fx = Inadequate  
F = Totally Inadequate

c. The assessment criteria for the course will be distributed at the beginning of the course.

d. In order to pass the course, the grade E or higher is required on course units 1 and 3 and Pass on course units 2 and 4.

e. Students who receive the grade Fx or F on an examination are entitled to at least four additional examinations to achieve the lowest grade E as long as the course is still given. Students who receive the grade E or higher on an examination may not retake this examination in order to attempt to achieve a higher grade. Students who receive the grade Fx or F on an examination twice by the same examiner are entitled to request that a different examiner be appointed to set the grade of the examination. Such a request must be in writing and sent to the head of the department. Here, the term examination denotes all compulsory elements of the course.

### **Interim**

Students can request examination in accordance with this syllabus up to three times during a period of two years after the course is no longer given. Such a request must be in writing and sent to the head of the department. Here, the term examination denotes all compulsory elements of the course.

### **Limitations**

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### **Misc**

The course has previously been given under the course code ST120G.

### **Required reading**

The course literature is described in an appendix to the syllabus.