Stockholm University

Syllabus
for course at first level

Fundamentals of Statistics
Statistikens grunder

15.0 Higher Education Credits
15.0 ECTS credits

Course code:	ST111G
Valid from:	Spring 2012
Date of approval:	2010-10-06
Changed:	2011-06-09
Department	Department of Statistics
Subject	Statistics

Decision
This syllabus was approved by the Board of the Department of Statistics on October 6, 2010 and revised on June 9, 2011.

Prerequisites and special admittance requirements
Swedish upper secondary school courses English B, Mathematics C and Social Sciences A or equivalent.

Course structure

Examination code	Name	Higher Education Credits
11ST	Fundamentals of Statistics 1	6
12SI	Compulsory Exercise in Fundamentals of Statistics 1	1.5
13ST	Fundamentals of Statistics 2	6
14SI	Compulsory Exercise in Fundamentals of Statistics 2	1.5

Course content
The course consists of four course units:
1. Fundamentals of Statistics 1
2. Compulsory exercise, Fundamentals of Statistics 1☐
3. Fundamentals of Statistics 2
4. Compulsory exercise, Fundamentals of Statistics 2

This course emphasizes the conceptual background of Statistics and its applications in empirical surveys, with special focus on descriptive statistics and statistical inference. The course also gives an orientation of the role of statistics in science. The model concept is discussed thoroughly with special focus on probability models and their applications within different fields. Furthermore, an introduction to the use of statistical software is given.

The concepts that are more thoroughly treated are:
Knowledge building. Models, especially probability models. Basic probability theory. Discrete and continuous stochastic variables and their distributions. Data collection. Descriptive Statistics in the form of tables and diagrams. Index. Sampling distributions and the central limit theorem. Point estimation. Interval estimation. Hypothesis testing. Goodness-of-fit test and independence test. Regression. Statistical surveys. Decision theory.

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:
- critically review statistical surveys from a scientific point of view
- design statistical models for elementary problems within different fields of application
- solve basic problems in probability theory
- solve basic problems in inference theory
- conduct basic data analyses using statistical software and present the results

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 be in the form of 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

Misc

The course has previously been given under the course code ST110G.

Required reading

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