



HÖGSKOLAN I GÄVLE

Data Analysis and Statistics 1 7.5 cr

Dataanalys och statistik 1 7,5 hp

Set by Board of Mathematics, Natural and Computer Sciences

Version

Set at	Valid from
5/18/10	HT2007
11/14/13	VT2014
6/7/16	VT2016

Level	G1N
Education level	First cycle
Course identifier	ST001A
Credits	7.5 cr
Main field of study	Not defined
Subject group	Statistics
Disciplinary domain	Natural sciences 100.0 %

Learning outcomes

On completion of the course, the student should:

- based on a given amount of data, be able to summarise and visualise the distribution of one variable and the bivariate distribution of two variables using statistical programs.
- be able to calculate the statistical uncertainty for means and proportions.
- be able to make statements about population means and proportions based on random samples.
- be familiar with statistical principles and techniques to visualise, compile and summarise data.
- be familiar with the concepts of chance, probability and random variable and basic laws describing them.
- be familiar with the preconditions for enabling statistical conclusions.
- have general knowledge of techniques for collecting data.

Course content

- to find public statistics presented by SCB (Statistics Sweden)
- to describe data using different graphs and to draw conclusions about data distribution from graphs

- to compile raw data in tables; principles for extracting information from cross tables
- to summarise data with measures of centre, spread and association
- to analyse data by means of normal distribution
- principles of data collection through experiments: and
- through sampling
- to be able to analyse relationships between variables using scatter plots, simple linear regression and correlation measures; to be able to illustrate and interpret relationships using cross tables
- to be familiar with the concepts of chance, probability and random variable and basic principles and laws in probability theory
- to know to how the population parameters mean and proportion are estimated and the distribution of the estimations, and normal approximation and the central limit theorem
- to be able to estimate mean and proportion and differences between two means or proportions using confidence intervals and draw conclusions based on the results

Teaching	Lectures/teaching sessions/supervision and calculation and computer exercises		
Prerequisites	General entry requirements + Mathematics 2a or 2b or 2c.		
Examination	Written assignments and written examination.		
Grade	A, B, C, D, E, Fx, F		
Other regulations	<p>The student's practical work may be adapted to the student's main field of study. Grading criteria are provided by the course coordinator or examiner at the beginning of the course.</p> <p>The course may not be included in a higher education degree together with any of the following courses:</p> <p>Data Analysis and Statistics 1 for Technicians and Natural Scientists Basic distance course in statistics Basic distance course in statistics for technicians and natural scientists Established for HT2007</p>		
Sustainable environment	Content with sustainable development is not relevant to this course.		
Module			
	0020	Written Assignments	1.5 cr Grade: UG
	0030	Written Examination	6 cr Grade: AF