Theory of Statistics I

Single subject and programme course

7.5 credits

Statistisk teori I

732G20

Valid from:

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

Date determined
2007-01-22

Revision date
2011-09-01; 2018-03-22

Main field of study
Statistics

Course level
First cycle

Advancement level
G1X

Course offered for
- Bachelor´s Programme in Statistics and Data Analysis

Entry requirements
For admission to the course, the courses Introduction to Statistical Methodology, 15 HE credits, Linear Algebra, 7.5 HE credits and Mathematical Analysis 1 for Statisticians, 15 HE credits must be completed.

Intended learning outcomes
The aim of the course is that the student should acquire the theoretical bases of statistical concepts and methods that are required for qualified work and research in statistics.

On completion of the course, the student should
- be able to use knowledge of the most common statistical inference methods
- demonstrate a good understanding of the main principles within point estimation, interval estimation and hypothesis test,
- have the ability to use appropriate estimation and testing methods on different practical problems, and be able to use statistical programs to solve them,
- in a knowledgeable way, be able to assess the theoretical conditions of different statistical methods for a number of different applications.

Course content

The course covers general concepts and methods of probability theory and inference theory.

The following parts are covered:
- basic probability theory,
- random variables, distributions, moments,
- certain known discrete and continuous distributions,
- distribution theory for random sampling,
- point estimation theory, including, among others, the maximum likelihood method,
- interval estimation,
- significance testing,
- power functions,
- Gaussian approximation formula.

Teaching and working methods

The teaching takes the form of lectures, teaching sessions, seminars and computer exercises. Language of instruction: Swedish.

Examination

The course is examined through a written examination.

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