Statistics 7.5 credits
B0005M

Statistik

Course syllabus admitted: Autumn 2012 Sp 1 - Autumn 2012 Sp 2

DECISION DATE
2012-04-03

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Statistik

First cycle, B0005M

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Matematik	Mathematics

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language and Mathematics Calculus, Undergraduate Level 1

Selection

The selection is based on 1-165 credits.

Examiner

Lars Bergström

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Course Aim

The purpose of the course is to give basic knowledge of Statistics with emphasis on probability theory and statistical conclusion.

After completed course the student should be able to:

· Utilize different descriptive methods to describe one or several variables (e g diagrams, tables and numerical amounts)

· Know basic probability concepts

· Distinguish some discrete as well as continuous distributions (e g binomial, Poisson, hyper-geometric and the normal distribution)

· Calculate expected value and variance

· Understand the significance of the central limit- theory

· Decide if a point estimate is unbiased and if it is efficient (compared to another estimate)

· Calculate a confidence-interval for one expected value as well as for the difference between two expected values

· Calculate the confidence-interval for a proportion

· Execute tests of hypotheses

· Have good command of non-parametric methods such as sign-tests, Chi-2 tests and Wilcoxons rank sum test

Contents

The probability concept, independent occurrences, conditional probabilities, stochastic variables, expected values, variance, some statistic standard-distributions and the central limit- theorem with applications

Descriptive statistics, describe linear relations of two variables, estimation and testing of hypotheses, random values and simulation. Laboratory work with computer with statistical software.

Realization

Each course occasion´s language and form is stated and appear on the course page on Luleå University of Technology's website.
Lectures, exercises and laboratory work.

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Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Written test and Assignments.

Remarks

Substitutes MAA031 and MA1009.

Literature. Valid from Autumn 2012 Sp 1

Vännman, K.. (2002) Matematisk statistik. 2 uppl. Lund : Studentlitteratur. (337 s). ISBN 91-44-01690-5

Course offered by

Department of Engineering Sciences and Mathematics

Items/credits

No items/credits available

Syllabus established

by Dept TVM Mats Näsström 2012-04-03