HF1012 Mathematical Statistics 6.0 credits

Matematisk statistik

This is a translation of the Swedish, legally binding, course syllabus.

Establishment

Course syllabus for HF1012 valid from Spring 2019

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Specific prerequisites

Mathematics corresponding to Linear algebra and calculus in one variable.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

Course contents

- Statistics: Descriptive statistics.
- Sets and combinatorics. Probability theory, basic notations.
- Sample spaces, dependent and independent events. Conditional probability. The theorem of total probability.
- Stochastic variables. Expected value, variance and standard deviation.
- Discrete stochastic variables.
- Uniform, hypergeometric distribution.
- The binominal and Poisson distributions.
- Continuous random variables. Uniform distribution, exponential and normal distribution
- Functions of random variables. The central limit theorem.
- Point estimation and confidence intervals for means.
- Covariance, correlation, regression line
- Markov chains
- Introduction to M/M/m queueing systems

Examination

- TEN1 - Examination, 4.0 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Lab Work, 2.0 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.