IX1305 Mathematics III 7.5 credits

Matematik III

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

Establishment

Course syllabus for IX1305 valid from Autumn 2008

Grading scale

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

Education cycle

First cycle

Main field of study

Mathematics, Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

Discrete mathematics Discrete mathematics is mathematics connected to computer science. The main goal is to give the student basic knowledge in this field.- After the course the student will be able to:_* describe a problem with a graph and know basic properties of graphs* show some statements by induction__* be able to do some calculations in the ring Zn and in the field Zp__* use basic relations for the natural numbers_ **More over the student will be able to use a mathematical computer program. Mathematical statistics__The main goal is that the student will be able to practically use statistical methods. After the course the student will be able to describe data graphically with statistical parameters as the mean and variance. Given a set of data the student will be able to* make point estimations of some statistical variables and to calculate the error of the estimation._* make confidence intervals*** construct a hypothesis test_ **More over the student will be able to make simulations based on random events.**

Course contents

_Discrete mathematics
__• Recursion and induction
__• Graphs
__• Relations
_• Algebra (groups, rings and fields) _Mathematical statistics
__• Descriptive statistics
__• Point estimation
__• Confidence interval
__• Hypothesis testing
_• Simulation

Examination

- TEN1 - Examination, 4.5 credits, grading scale: A, B, C, D, E, FX, F
- LAB1 - Laboratory Work, 3.0 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.

Other requirements for final grade

Written exam 3p__Laborations 2p

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.