IX1305 Mathematics III 7.5 credits

Matematik III

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

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

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 statisticsThe 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

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

Other requirements for final grade

Written exam 3pLaborations 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.