



# HF1013 Discrete Mathematics

## 8.0 credits

Diskret matematik

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 HF1013 valid from Autumn 2011

### Grading scale

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

### Education cycle

First cycle

### Main field of study

Technology

### Specific prerequisites

Knowledge corresponding to Linear algebra and one-variable calculus

### Language of instruction

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

## Intended learning outcomes

- To increase the mathematical tool-box with material of importance for an engineer in computer science.
- Through practice, the student will improve his capacity to communicate mathematics. The exercises will be accounted both as oral and written examinations.
- To solve many of the exercises in the course, the student have to use a computer algebra system.
- The student will be better in solving problems. To model problems from a given problem text. To understand how important it is to understand the problem, make a plan, realize the plan and verify the answer.

## Course contents

- Combinatorics
- Discrete probability
- Number theory
- Sets theory
- Recursion
- Graph theory
- Logic
- Computer algebra system
- Problem solving
- Mathematical language

## Course literature

Will be decided before start of the course

## Examination

- TEN1 - Examination, 5.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Computer Exercises, 3.0 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.

TEN1 - Examination, 5 credits, grade A, B, C, D, E, FX, F both theoretical and practical moments.

ÖVN1 - Laboratory work, 3 credits, grade A, B, C, D, E, FX, F

The results from TEN1 and ÖVN1 will be weighed together

## **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.