DD1345 Fundamentals of Programming and Computer Science 7.5 credits

Grundläggande programmering och datalogi

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

Establishment

Course syllabus for DD1345 valid from Autumn 2009

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

For single course students: completed upper secondary education including documented proficiency in Swedish corresponding to Swedish B, English corresponding to English A. Furthermore: 7,5 hp in mathematics and 6 hp in computer science or programming techniques.

Language of instruction

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

Intended learning outcomes

After the course, the student should be able to

- use the algorithms and the data structures in the course to dealsuccessfully with practical problems of the types occurring in labsand exams (these are all on the web),
- analyse the properties of algorithms in practical problems of thetypes occurring in labs and exams,
- use Matlab for calculations and visualization of mathematicalproblems

in order to

- develop computer scientific thinking and thereby efficientlysolve programming problems.

Course contents

- Basic programming in Python
- Classical data structures: stacks, queues, lists, trees, graphs,hash tables
- Algorithms and algorithms analysis: searching and sorting,optimization, pattern matching, complexity measures,theoretical limits
- Abstraction techniques: abstract data types, interfaces
- Problem solving techniques: recursion, hierarchical decomposition,abstraction
- Programming and visualization in Matlab

Course literature

Course literature will be announced at least 4 weeks before course start at course home page.

Examination

- LAB2 - Laboratory Work, 1.5 credits, grading scale: A, B, C, D, E, FX, F
- TEN1 - Examination, 3.0 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.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

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.