DD132U Fundamentals of Computer Science 6.0 credits

Grundläggande datalogi

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

Establishment

Course syllabus for DD132U valid from Autumn 2022

Grading scale

P, F

Education cycle

First cycle

Main field of study

Technology

Language of instruction

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

Intended learning outcomes

Having passed the course, the student should be able to:

- systematically test programs to discover errors,
- use abstraction as a tool to simplify the programming,

- choose appropriate algorithm to a given problem,
- describe different algorithms for searching, sorting and encryption as well as their properties,
- model problems using graphs and implement algorithms for searching in graphs,
- implement and use basic data structures,
- design and analyse simple algorithms with data structures,

in order to:

- become a good problem solver using programming,
- be able to use computational methods in application projects, and
- acquire sufficient prior knowledge to be able to take advanced courses in computer science.

Course contents

Algorithms and data structures: A systematic overview of the concepts abstract data types, stacks, queues, lists, trees, searching, sorting and recursion based on the knowledge the students acquired in the course Fundamentals of programming. Hashing, priority queues, search trees, problem trees, text searching, simple syntax analysis, encryption and automata. Algorithm analysis.

Programming: Software development methodology, programme quality, abstraction, modularisation, testing, system calls, standard libraries.

Examination

- IND1 - Individual home assignments, 2.0 credits, grading scale: P, F
- LAB1 - Laboratory assignments, 4.0 credits, grading scale: P, F

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.