DD1331 Fundamentals of Programming 5.0 credits

Grundläggande programmering

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

The official course syllabus is valid from autumn semester 2024 according to the decision of Director of First and Second Cycle Education: J-2024-0559.Date of decision: March 27th 2024

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

After passing the course, the student should be able to:

- classify syntactic elements in program code with correct terminology
- identify and apply basic data types, classes and type conversions
- apply and debug flow control as well as logical and arithmetic expressions
- analyze the scope and extent of a variable
- debug short programmes written by others
- write and troubleshoot longer programmes
- write a specification for a longer programme
- divide a problem into manageable parts
- divide a program into manageable parts
- use and evaluate good programming practices
- evaluate, troubleshoot and with correct terminology describe recursive algorithms
- combine the embedded functions of the programming language with own functions to solve programming problems

in order to

- be able to carry out computations and solve programming problems
- be prepared for the next course in computer science.

For higher grades, the student should also be able to

- implement an interactive graphical user interface.

Course contents

Fundamental computer concepts.

Programming in a modern programming language (Python). Data structures and classes. Problem-solving through division into sub-problems. Program structuring. Several smaller programming assignments as well as one larger, individual programming assignment with strong emphasis on structuring and specification of included modules. Graphic descriptions of the connection between variable names, types and data.

Examination

- KONT - Partial exam, 1.0 credits, grading scale: P, F
- LAB1 - Laboratory Assignment, 2.0 credits, grading scale: P, F
- PRO1 - Individual programming project, 2.0 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.

Transitional regulations

The earlier course components LAB4, TEN2 and LAB2 have been replaced by LAB1, KONT and PRO1, respectively.

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.