DD1317 Programming Techniques 7.5 credits

Programmeringsteknik

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 the autumn semester 2024 in accordance with the decision from the director of first and second cycle education: J-2024-0732.Decision date: 2024-04-04

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 shall be able to

- divide a larger problem in manageable parts
- divide a program
- design programs without code repetitions
- apply control structures
- create flexible applications
- choose appropriate names of identifiers
- design interactive programs
- use and design composite data types (classes)
- transfer data between file and program,
- design and present user friendly output
- review others' programs
- transfer data to and from spreadsheets
- carry out simple analyses of data in spreadsheet format

in order to be able to

- use programming to solve problems,
- apply the problem solving methodology also within other fields than programming,
- discuss software development with experts
- assess commercial programs
- independently and in a group be able to solve problems by designing programs of up to 500 lines in a modern programming language.
- utilise spreadsheets as aids in other courses.

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.

Generate data with Python on a format that can be read and analysed by means of a spreadsheet program and carry out simple such analyses.

Examination

- KAL1 - Programming Assignments, 1.5 credits, grading scale: P, F
- LAB1 - Programming Assignments, 1.5 credits, grading scale: P, F
- LAB2 - Programming Assignments, 1.5 credits, grading scale: P, F
- LAB3 - Programming Assignments, 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.

LAB2 is conducted as a computer exam.
LAB3 is an individual programming project.

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.