DD1388 Program System Construction Using C++ 7.5 credits

Programsystemkonstruktion med C++

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

Establishment

The official course syllabus is valid from the spring semester 2026 as decided by the director of first and second cycle education: HS-2025-1932. Date of decision: 2025-10-14

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Knowledge and skills in programming, 6 credits, equivalent to completed course DD1337/DD1310-DD1319/DD1321/DD1331/DD1333/DD100N/ID1018/ID1022.

Knowledge in algorithms, data structures and basic software development techniques, 6 credits, equivalent to completed course DD1338/DD1320-DD1328/DD2325/ID1020/ID1021 or completed exam elements KONT and LABD in DD1326.

Intended learning outcomes

On completion of the course, you should be able to

- program with dynamic memory allocation,
- apply the standard library,
- write correct C++ syntax,
- write test code,
- relate to advanced C++ literature,
- program generics with type parametrization,
- apply, in C++, your prior knowledge of object-oriented programming,
- model an extensive object-oriented project,
- present and justify an object-oriented model

in order to

- know that you master the whole language C++,
- with self-confidence be able to take part in C++ projects in the industry and develop or maintain the code.

Course contents

The development of C++ from C and Simula to ISO standard.

Overview of all parts of C++ according to the ISO standard, including classes, simple and multiple inheritance, overloading, generic functions and classes, exceptions, constant declarations, streams, name spaces, type equivalence and type compatibility, the preprocessor.

Program design with C++: good programming style, procedure at object-oriented development in C++, rules of thumb and tips for design and implementation of C++ programme, support for modularisation, memory handling, making the program code more efficient, common errors and traps, Unicode and localisation, use of the standard library, tools for testing, troubleshooting, static and dynamic linking and name mangling, portability.

Examination

- TEN1 - Examination, 1.5 credits, grading scale: P, F
- LAB1 - Laboratory assignments, 6.0 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.

If the course is discontinued, students may request to be examined during the following two academic years.

The exam is conducted as a computer-based test.

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.