Linnæus University

Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

1DV433 Strukturerad programmering med C++, 7,5 högskolepoäng
Structured programming with C++, 7.5 credits

Main field of study
Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G1N

Date of Ratification
Approved by the Board of the School of Computer Science, Physics and Mathematics 2009-06-23

Revised 2012-08-17. Type of instruction is revised.

The course syllabus is valid from autumn semester 2012

Prerequisites
General entry requirements.

Objectives

The course aims to provide the student with a basic knowledge of structuring problems and translate them into applications developed with the programming language C++.

After finished course, the participant shall:

- have a basic knowledge of structured programming with the programming language C++ and use of modern software development tools
- be able to create structured text-based applications and have learned a good programming methodology
- master and understand commonly used algorithms and data structures.

Content

The course consists of two modules.

Module 1 Theory 3.5 credits
The theory section addresses how problems are structured into smaller parts that finally will be solved with standard algorithms and implemented in C++.

Contents:

- input and output
- simple data types, strings, arrays, structures, user defined types
- control structures for selection and iteration
- functions with and without a return value, data transmission through parameters
- pointers and dynamically generated variables
- text and binary files.

Module 2 Practical assignments 4 credits
In this module the course participant solves different problems and may thus effectively apply theory and create their own programs written in C++. There are exercises in large numbers, from which the student can select severity level and exercises according to interest and ambition. The module ends with a self-chosen project that, if possible, is demonstrated to the group.

Type of Instruction

The course is online and is based on independent studies of the assigned literature and web-based study material. The study material deals with the theory, as well as practical tasks in which the knowledge is applied. For the practical application, the students has an ongoing access to web-based and personal tutoring.

The course is divided into 6 steps that build on each other. Each step includes a number of practical exercises of different difficulty and score.
To pass the course the participant shall perform and report the exercises to reach a certain number of points determined for each step. The participant can select severity level and exercises according to their interest and ambition.

A step ends with a theory test which together with the practical applications must be approved before the next step begins. A failed test can be retaken at least twice with normally one-step intervals.

Examination

The course is assessed with the grades U,3,4 or 5.
On request, students may have their credits translated into ECTS-marks. Such a request must be sent to the examiner before the grading process starts.
Grades are given for completion of the course and are based on severity and quality of the reported exercises and result of tests.
Reexamination is offered within six weeks under the regular semester periods. The number of examinations is limited to five times.

Course Evaluation

A course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

Required Reading and Additional Study Material

Schildt, H (2003) C++*from the ground up.* Third edition. ISBN 0-07-222897.
(Alternatively, an equivalent C++ book in agreement with the course coordinator)
Web based materials are provided on the course website.
The required reading and additional study material are subject to changes.