Object Oriented Problem Solving

Programme course

10 credits

Objektorienterad problemlösning

TDDI82

Valid from: 2018 Spring semester

Determined by
Board of Studies for Computer Science
and Media Technology

Date determined

Main field of study
Computer Science and Engineering

Course level
First cycle

Advancement level
G1X

Course offered for
- Computer Engineering, B Sc in Engineering

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Basic object oriented programming course, preferably using C++

Intended learning outcomes
The student will work to gain knowledge and skills in problem solving using object oriented programming in C++.

After a completed course, the student should be able to:

- formulate and create solutions to programming problems using an object oriented approach
- solve data processing problems using selected components from the standard template library
- create simple class and function templates
- be able to describe and analyze ethical aspects related to the subject

Course content

- Abstraction and object oriented methods (object oriented analysis and design)
- The following concepts; inheritance, encapsulation, association, aggregation, composition, polymorphism
- Create simple class diagrams using UML
- Function and class templates
- The Standard Template Library (STL) including iterators, containers, algorithms and adaptors
- Lambda expressions and function objects
- Seminary discussion of ethical aspects related to the software development process.

Teaching and working methods

New content is presented during lectures and discussed in smaller lesson groups. The student then practices during labs and in a project.

Examination

DAT1	Computer examination	2 credits	U, 3, 4, 5
LAB1	Problem solving	2 credits	U, G
UPG1	Seminars	1.5 credits	U, G
PRA2	Project	4.5 credits	U, G

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Ola Leifler

Examiner

Klas Arvidsson

Education components

Preliminary scheduled hours: 64 h
Recommended self-study hours: 203 h