

# 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

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

## 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