Object Oriented Programming

Programme course

8 credits

Objektorienterad programmering

TDP004

Valid from: 2017 Spring semester

Determined by
Board of Studies for Computer Science
and Media Technology

Date determined
2017-01-25

Main field of study

Programming

Course level

First cycle

Advancement level

G1F

Course offered for

- Programming, Bachelor's Programme

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

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

Intended learning outcomes

After the course, the student should be able to:

- describe in detail concepts, design principles, methods and techniques used in object oriented programming
- use object oriented program design to solve problems in a correct and appropriate way
- construct an object oriented program solving a smaller realistic problem

Course content

- Craft: Using the constructs of an object oriented programming language. The ability to make a basic object oriented design with classes and methods. Using tools and libraries for software development. The ability to create readable and well design object oriented source code. The ability to work individually in C++.
- Theory: Concepts in object oriented programming and design. Object oriented programming and constructs in object oriented programming languages, e.g. class, object, encapsulation, inheritance. Constructs for repetition and choice. Input/Output. Data structures and algorithms using standard libraries: containrar, search, sorting, iterators. Datatypes, declarations, statements, expressions, functions. Dynamic memory management.
- Techniques: C++, including standard libraries.

Teaching and working methods

Lectures, labs, programming workshops and own practice. Lectures address the subject matter and techniques of the course. Labs and exercises gives individual experience of basic programming. Programming workshops are for in detail discussions.

Examination

LAB2	Laboratory work	4 credits	U, G
DAT2	Computer examination	4 credits	U, 3, 4, 5

LAB2 include to collect a number of points by preparation and active participation in course activities (mainly classes, seminars and dojos).

Grades

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

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Ahmed Rezine

Examiner

Klas Arvidsson

Course website and other links

http://www.ida.liu.se/~TDP004

Education components

Preliminary scheduled hours: 78 h
Recommended self-study hours: 135 h

Course literature

Additional literature

Books

Stanley B. Lippmann, Josée Lajoie och Barbara E. Moo, *C++ Primer* (5:e upplagan eller senare
or other book covering C++ 2011.

Other

See course homepage for further information and material.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.