



## Course syllabus

Faculty of Technology

Department of Computer Science and Media Technology

1DV506 Problemlösning och programmering, 7,5 högskolepoäng  
Problem Solving and Programming, 7.5 credits

### **Main field of study**

Computer Science

### **Subject Group**

Informatics/Computer and Systems Sciences

### **Level of classification**

First Level

### **Progression**

GIN

### **Date of Ratification**

Approved 2014-12-08

Revised 2019-05-11 by Faculty of Technology.

The course syllabus is valid from autumn semester 2019

### **Prerequisites**

General entry requirements and Mathematics 3b / 3c or Mathematics C (Field-specific entry requirements 12/A12).

## Objectives

After the course the student should be able to:

- describe object-oriented concepts like modularisation, abstraction and encapsulation
- describe the concepts syntax and semantic
- develop simple programs in Java involving a few classes
- describe the syntax of the language Java
- describe how concepts like modularisation, abstraction and encapsulation are supported by Java
- describe the most commonly used classes in the Java Standard Library

## Content

The following theoretical parts are treated:

- fundamental elements in object oriented programming
- object oriented modelling and problem solving

The following parts in Java are treated:

- classes and objects

- methods, constructors, and fields
- simple data types and related operations
- control statements
- simple input and output from keyboard/screen
- arrays
- the Java class library
- The library classes Random, Math, ArrayList

## Type of Instruction

Teaching consists of lectures and practical assignments. Practical assignments are individual or carried out in groups. The course can also be given as a distance learning course.

## Examination

The course is assessed with the grades A, B, C, D, E, Fx or F.

The grade A constitutes the highest grade on the scale and the remaining grades follow in descending order where the grade E is the lowest grade on the scale that will result in a pass. The grade F means that the student's performance is assessed as fail (i.e. received the grade F).

Assessment of the students' performance is made through written and/or oral examination or practical programming examination and/or presentation of mandatory assignments. The assessment method is decided at the start of the course.

Students who do not pass the regular examination are given the opportunity to do a resit examination shortly after the regular examination.

## Course Evaluation

A course evaluation will be carried out and compiled after the course is completed. The compilation will be presented to the current board as well as to the students and filed by the coordinating department.

## Other

Grade criteria for the A–F scale are communicated to the student through a special document. The student is to be informed about the grade criteria for the course by the start of the course at the latest.

## Required Reading and Additional Study Material

### **Required reading**

Introduction to Java Programming and Data Structures (Global Edition), Y. Daniel Liang, 11th edition, 2019. 400 (1000) sidor.

FTK, *Distributed material*. Pages 100.