



## Course syllabus

Faculty of Technology

Department of Computer Science and Media Technology

1DV532 Inledande programmering med Java, 7,5 högskolepoäng

1DV532 Starting Out with Java, 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 Faculty of Technology 2018-11-08

The course syllabus is valid from spring semester 2019

### **Prerequisites**

General entry requirements for university studies.

## Objectives

This course provides basic knowledge and skills in object-oriented programming with the Java programming language. After completing the course, the student is expected to:

- Understand basic concepts and principles in object-oriented programming.
- Be able to apply object-oriented programming techniques.
- Have acquired basic knowledge and good programming methodology in the Java programming language.
- Have acquired skills to create console applications in the Java programming language, based on a problem description alt. design model.

## Content

The course consists of two modules.

### ***Module 1 Theory 3.5 credits***

- Problem solving with basic algorithm design and object-oriented methodology

with use of program libraries.

- Flow control using control structures of sequences, selections and iterations.
- Basic concepts and syntax of the Java programming language: Classes, objects, methods, data types, variables, operators, value and reference types, arrays, structures, file management, exception handling and debugging, input from keyboard and output to the screen.

### ***Module 2 Practical assignments 4 credits***

- In this section the course participant may independently resolve programming problems, i.e. practical apply theory and create own object-oriented design basis of applications and software solutions in Java. To some extent, the assignments are selectable by severity, interest and ambition.

### **Type of Instruction**

The course is offered entirely at a distance and based on self-study of literature and web-based material that deals with theory, together with instructions for the practical assignments in which knowledge is applied. For the practical application course participants have access to web-based, personalized tutoring.

The course is divided into four steps that build on each other. Each step includes a number of practical applications, with both mandatory and optional tasks of varying severity and for different areas of interest. For approval, these should be implemented according to requirements for each assignment. Each step 1-4 ends with a theory test, which must be approved along with practical applications before next step begins. Fail theory test can be repeated at least twice usually one week apart.

### **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).

The final grade is given for completion of the course and based on the weighted result from both theory tests and applications. The latter consists of programming tasks, whose solution quality is of great importance for the final assessment.

Re-examinations are offered within six weeks under the regular semester periods. The numbers of examinations are limited to five times.

### **Course Evaluation**

During the course or in close connection to the course, a course evaluation is to be carried out. The result and analysis of the course evaluation are to be communicated to the students who have taken the course and to the students who are to participate in the course the next time it is offered. The course evaluation is carried out anonymously. The compiled report will be filed at the Faculty.

### **Credit Overlap**

The course cannot be included in a degree along with the following course/courses of which the content fully, or partly, corresponds to the content of this course: 1DV432,

7.5 credits

### **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**

Walter Savitch: *Absolute Java*, (5th Ed) International Edition, Pearson Education. ISBN 9780273764793

#### **Additional Study Material**

Web-based materials are provided on the course website.

*The Required Reading and Additional Study Material are subject to changes.*