Linnæus University

Dnr: 2014/3161-3.1.2

Course syllabus

Faculty of Technology

Department of Computer Science and Media Technology

2DV600 Programvaruteknisk översiktskurs, 7,5 högskolepoäng
2DV600 Foundations of Software Technology, 7.5 credits

Main field of study
Computer Science

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G2F

Date of Ratification
Approved by Faculty of Technology 2014-10-03
The course syllabus is valid from autumn semester 2015

Prerequisites
120 credits of which at least 60 credits must be in Computer Science or the equivalent. Basic programming skills corresponding to the course 1DV506, Problem Solving and Programming, 7.5 credits.

Objectives
Upon completion of the course, the student should:

- be able to implement programs in Java
- have knowledge of different types of software testing and have practical experience of unit testing (JUnit)
- be able to define and apply formal languages concepts like finite automata, regular expressions, context-free grammars, and parsing
- be able to define and apply algorithmic theory concepts like time complexity, simple search and sorting algorithms, greedy algorithms, and dynamic programming
- be able to implement data structures like lists, graphs, trees, sets, and hash tables

Content
The course covers the following topics:

- object-oriented programming in Java
- software testing in general, unit testing (JUnit) in particular
- data structures (sequential structures, hashing, trees, graphs, sets)
- formal languages (finite automata, regular expressions, context-free grammars, recursive descent)
- algorithm theory (time-complexity, greedy algorithms, dynamic programming)

Type of Instruction
Lectures and practical assignments.

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 student´s performance is made through written exams and/or oral tests and presentation of compulsory practical assignments. The assessment method will be decided at the start of the course. Students who do not pass the regular examination are given the opportunity to do a resit 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.

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: 2DV100 Foundations of Software Technology, 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
Handout
Handout and other relevant literature will be selected together with the supervisor and the examiner.