Faculty of Health, Science and Technology
Computer Science

Syllabus

Course Approval
The syllabus was approved by the Faculty Board of Health, Science and Technology on 6 February 2014 , and is valid from the Autumn semester of 2014 at Karlstad University.

Course Code: DVGA01
Programming Techniques, 7.5 ECTS Credits
(Programmeringsteknik, 7.5 Swedish credit points)
Degree Level: Bachelor
Progressive Specialisation: G1N (First cycle, has only upper-secondary level entry requirements)

Language of Instruction
The language of instruction is Swedish.

Prerequisites
General admission requirements plus upper secondary level Mathematics C and Physics B, or the equivalent.

Major Field of Study
DVA (Computer Science)

Learning Outcomes

Upon completion of the course, the students should be able to:
-use a programming environment to compile and run simple programmes,
-explain how a simple programme, written in a high-level language, works in natural language and with the help of a modeling language,
-independently construct a high-level programming language for solving simple problems,
-document their problems with the help of contract programming, and
-give a written account of the set laboratory assignments.

Content and Form of Instruction

The course covers basic problem solving in object-oriented high-level languages. Instruction is in the form of lectures, exercises, and laboratory classes.

The course comprises the following components:
-introduction to object-oriented programming,
-selection,
-iteration,
-functions,
-contract programming,
-types of data,
-sorting algorithms and search algorithms, and
-UML (Unified Modeling Language) activity diagrams

The students will also be introduced to recursion, pointers, linked lists, and file management.

Reading List

See separate document.

Examination

Examination is in the form of obligatory assignments and a final written exam.

Grades

One of the grades 5 (Pass with Distinction), 4 (Pass with Merit), 3 (Pass), or U (Fail) is awarded in the examination of the course.

Quality Assurance

Follow-up relating to learning conditions and goal-fulfilment takes place both during and upon completion of the course in order to ensure continuous improvement. Course assessment is based on student views and experiences as reported in written course evaluations and/or group discussions. Students will be informed of the result of the evaluation and of the measures to be taken.

Course Certificate

A course certificate will be provided upon request.

Additional Information

Students who enrolled before 1 July 2007 will complete their studies in accordance with the requirements of the earlier admission. Upon completion students may request degree and course certificates to be issued under the current ordinance if they meet its requirements.

The local regulations for studies at the Bachelor's and Master's levels at Karlstad University stipulate the obligations and rights of students and staff.