HI1024 Computer Programming, Basic Course 8.0 credits

Programmering, grundkurs

Course syllabus for HI1024 valid from Autumn 13

This is a translation of the Swedish, legally binding, course syllabus.

Grading scale: A, B, C, D, E, FX, F
Education cycle: First cycle
Main field of study: Technology

Intended learning outcomes

The course will be an introduction to programming in an *imperative programming language*. The course will give a solid ground in programming for coming courses in the program.

To obtain a pass, the student shall know how to write structured programs, where these things are specially important:

- create easy algorithms for given problems and translate them to program code.
- use an IDE to write, execute and debug programs.
- choose and use simple and more complex data types and variables.
- explain the difference between *parameters passed by value* and *reference parameters*. Know how different data types are stored in memory.
- write functions for well defined problems.
- break up a problem in sub problems, implement and test, step by step, choosing suitable test data.
- divide a program in more source files to support *abstraction, reuse* and *maintenance*.
- write programs with help of : *top down design, pseudo-code* and *flowchart*
- use external files for data storage
- analysis of more complex programming tasks. Structuring the solution in more levels including: problem analysis, overall design, well formed graphical user interface, divide the problem in sub problems, modules and functions and implementation.

Course main content

- Introduction to programming languages
- Problem analysis and structured programming
- Module programmering, debugging and testing
- Variables, basic and structured data types
- Sequence, selection and repetition
- Operators and arithmetics
- Functions
- Data files

Language of instruction

Language of instruction is specified in the course offering information in the course and programme directory.

Eligibility

Basic computer skills. General entrance requirements. - successful completion of upper secondary education, knowledge of Swedish and English

Literature

K N King, C Programming A Modern Approach, 2 ed, WW Norton & Co, ISBN: 9780393979503

Examination

- LAB1 - Computer Exercises, 2.0 credits, grading scale: P, F
- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- TEN2 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F