ML1300 Computer Programming Basic Course 7.5 credits

Programmering grundkurs

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

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for ML1300 valid from Autumn 2008

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Knowledge corresponding to admission requirements for Bachelor of Science in Engineering.
Basic experience of computers.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

The course provides an introduction to programming and a review of an imperative programming language. The course will give a solid ground for coming courses that contain programming.

In order to pass, the student should be able to write structured programs in a given language, with particular focus on the following:

- formulate simple algorithms for given problems and realise these algorithms in program code
- use an IDE to write, execute and debug a program
- introduce and choose data types and variables, including compound, for data storage
- explain the difference between variable value and address/reference, and differences in memory use when storing different data types
- write functions for well delimited assignments
- divide problems in parts, implement and test step-by-step, by selecting appropriate test data
- divide a program in several modules/files to promote abstraction, reusing and maintenance
- write executable programs from a simple program design (e. g. top-down design diagram, pseudo code or flow-chart)
- use external files for data storage

For higher marks, the student shall be able to

- analyse larger programming assignments and structure solutions on several levels, containing problem analysis, comprehensive design, well designed user interface, separation of a problem into parts, modules and functions, and implementation

Course contents

- Background, introduction to programming languages
- Problem analysis, structuring
- Modular programming, debugging, testing
- Data types, variables, compound data types
- Memory managing
- Sequence, selection, repetition
- Operators, arithmetics
- Functions
- File handling

Course literature

C programming: a modern approach, K. N. King, 1996 ISBN 0-393-9645-2

Examination

- TEN1 - Examination, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- ÖVN1 - Laboratory Experiments, 4.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Other requirements for final grade

Passed written exam.
Passed lab assignments and practical exam.
The final grade is based on all parts of the examination.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.