DD1312 Programming Techniques and Matlab 8.0 credits

Programmeringsteknik och Matlab

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 DD1312 valid from Autumn 2019

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Language of instruction

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

Intended learning outcomes

Having passed the course, the student should be able to:
• design programs without code repetitions
• divide a larger problem in manageable parts
• divide a program
• apply control structures
• design and present user friendly output
• create flexible applications
• choose appropriate names of identifiers
• design interactive programs
• use and design composite data types (classes)
• transfer data between file and program,
• review others' programs
• handle matrices and use matrix operations in Matlab
• use existing functions from the Matlab library for computation and visualisation.
• write own Matlab functions, in order to be able to
• use programming to solve problems,
• apply the problem solving methodology also within other fields than programming,
• discuss software development with experts
• assess commercial programs
• independently and in a group be able to solve problems by designing programs of up to 500 lines in a modern programming language.
• utilise Matlab as an aid for numerical computations and visualisation in other courses.

Course contents

Fundamental computer concepts.

Programming in a modern programming language (Python). Data structures. Using simple graphics routines. Problem-solving through division into sub-problems. Program structuring. Several smaller programming assignments as well as one larger, individual programming assignment with strong emphasis on structuring and specification of included modules.
Interactive computation, programming and two-dimensional graphical presentation in Matlab.

Course literature

Kurslitteratur meddelas senast 4 veckor före kursstart på kursens hemsida.

Examination

- LAB1 - Laboratory Work, 2.0 credits, grading scale: P, F
- LAB2 - Laboratory Work, 1.5 credits, grading scale: P, F
- LAB3 - Laboratory Work, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- MAT1 - Laboratory Work, 1.5 credits, grading scale: P, 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.

It is the examiner who, in agreement with KTH´s coordinator for disabilities, will decide on possible adapted examination for students with a proven permanent disability. The examiner may permit another examination format at the re-examination of individual students.

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.