# 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 Spring 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

After having passed this course the students are expected to be able to:

- follow syntactic rules in a programming language
- apply rules for better programming style (such as user friendly programs, comments, error management, structure, flexibility)
- find and correct program errors
- modify given programs
- create programs for managing files
- use control structures (if statements and loops) when needed,
- break down problems into smaller manageable problems
- use functions and data structures in program library
- develop simple graphical user interfaces
- review programs,
- manage matrices in Matlab
- define functions in Matlab
- usefunctions in Matlab library for calculation and visualization

in order to be able to:

- use programming to solve problems
- consider computers and programming to be natural tools in engineering work
- see the similarities between program construction and other types of construction work
- discuss concepts in computer science with experts
- assess commercial software
- use Matlab for numerical methods and visualization in other courses.

## Course contents

Fundamental computer concepts.

Programming in a modern programming language (Python). Data structures.

Simple graphics. Problem solving by dividing the problem into sub-problems.

Program structuring. Several small programming exercises and one larger, individual programming exercise with emphasis on structuring and specification of the modules being used.

Interactive computing, programming, and two dimensional visualization 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.

In this course all the regulations of the code of honor at the School of Computer science and Communication apply, see: http://www.kth.se/csc/student/hederskodex/1.17237?l=en_UK.

## Other requirements for final grade

Programming assignments (LAB1; 2 university credits).
Programming assignments (LAB2; 1.5 university credits).
Programming assignments (LAB3; 3 university credits)
Programming assignments (MAT1; 1.5 university credits)

## 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.