



DD1315 Programming Techniques and Matlab 7.5 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

The official course syllabus is valid from the autumn semester 2022 in accordance with Head of School decision: J-2021-2304. Decision date: 14/10/2021

Decision to discontinue this course

<p>The course will be discontinued at the end of the Autumn semester 2023 according to the Head of School decision: J-2021-2304.</p><p>Decision date: 14/10/2021</p><p>The course is given for the last time Autumn semester 2021. The last opportunity for examination in the course is given in the Autumn semester 2023.</p><p>The examination is carried out during the transition period within the framework of the course DD1317. The course modules LAB1, LAB2 and LAB3 in DD1315 are replaced by the course modules LAB1, LAB2 respectively LAB3 in DD1317. The laboratory work in the course module MAT1 is reported separately.</p>

Grading scale

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

Education cycle

First cycle

Main field of study

Technology

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 and classes.

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.

Specific prerequisites

Examination

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

Transitional regulations

Examination can be completed until the autumn semester 2023 within the framework of the course DD1317. The course modules LAB1, LAB2 and LAB3 in DD1315 are replaced by the course modules LAB1, LAB2 respectively LAB3 in DD1317. The laboratory work in the course module MAT1 is reported separately.

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.