Programming with Applications in Engineering

Programme course

6 credits

Problemlösning och programmering

TDDD44

Valid from: 2017 Spring semester

Determined by
Board of Studies for Mechanical
Engineering and Design

Date determined
2017-01-25

Offered for the last time
Autumn semester 2018

Main field of study

Computer Science and Engineering

Course level

First cycle

Advancement level

G1X

Course offered for

- Energy - Environment - Management, M Sc in Engineering

Entry requirements

Note: Admission requirements for non-programme students usually also include
admission requirements for the programme and threshold requirements for
progression within the programme, or corresponding.

Prerequisites

Ada: No programming knowledge necessary. Basic mathematics from Swedish
gymnasium. MatLab: Parts of "Matematisk grundkurs" and "Linjär algebra med
geometri". This courses are given in parallel with this course.

Intended learning outcomes

Ada: Basic knowledge of imperative programming, e.g. in Ada. Experience of
working in a minor programming project.
MatLab: Understanding and using imperative programming constructs in
MatLab. Increased understanding of conecpts addressed in the courses
"Matmatisk grundkurs" and "Linjär algebra med geometri".

Course content

Using system software such as compilers, linkers and text editors. Specifically
Ada: language elements, data types, declarations, expressions, statements, sub
programs, input/output, recursion, program structure, packages. Data structures
such as arrays, records and files. A minor project assignement. Specifically
MatLab: language elements, expressions, statments, sub programs, input/output
(textually and graphically), recursion. Data structures such as vectors and
matrices. The MatLab tool in general and the basic built-in functions related to
algebra.

Teaching and working methods

The course consists of lectures and laborative exercises.

Examination

UPG2	Optional lab assignment	0 credits	U, G
LAB4	Laboratory work in Matlab	2.5 credits	U, G
LAB2	Laboratory work in ADA	2.5 credits	U, G
DAT2	Computer examination	1 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Other information

Supplementary courses: Programming

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Ahmed Rezine

Examiner

Torbjörn Jonsson

Course website and other links

http://www.ida.liu.se/~TDDD44

Education components

Preliminary scheduled hours: 88 h
Recommended self-study hours: 72 h

Course literature

Se kurshemsidan för rekommendationer.

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.