Functional and Imperative Programming, Part 2

Programme course

5 credits

Funktionell och imperativ programmering, del 2

TDDE24

Valid from: 2017 Spring semester

Determined by

Board of Studies for Computer Science
and Media Technology

Date determined

2017-04-24

Main field of study

Computer Science and Engineering, Computer Science

Course level

First cycle

Advancement level

G1X

Course offered for

- Computer Science and Engineering, M Sc in Engineering
- Computer Science and Software Engineering, 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

Elementary computer skills, basic programming in Python and basic discrete mathematics (sets, functions, relations, induction, graphs, logical expressions).

Intended learning outcomes

The aim of the course is that the students should develop their ability to formulate and solve problems using programming. After the course the student will be able to:

- describe basic concepts of computer science related to programming and programming languages, in particular programming languages
- formulate and implement recursive and iterative algorithms
- construct abstractions with different types of support from the programming language

Course content

The following topics are addressed during lectures:

- programming and its relation to mathematics
- recursion
- data and program abstraction, abstract data types and data driven programming
- functional programming

Teaching and working methods

Theory is addressed mainly during a series of seminars, with a small number of supplementary lectures. The ability to solve problems is trained during labs.

Examination

LAB1	Laboratory work	2 credits	U, G
DAT1	Computer Examination	3 credits	U, 3, 4, 5

Grades

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

Other information

Supplementary courses: Imperative programming and Ada, Object oriented programming and Java, Data and program structures

Department

Institutionen för datavetenskap

Director of Studies or equivalent

Peter Dalenius

Examiner

Fredrik Heintz

Course website and other links

Education components

Preliminary scheduled hours: 0 h
Recommended self-study hours: 133 h

Course literature

Additional literature

Books

Zelle, John M., (2010) *Python Programming: An Introduction to Computer Science* Franklin, Beedle & Associates Inc.
ISBN: 978-1-59028-241-0