# 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**
2018-01-24

## Main field of study
Computer Science and Engineering, Computer Science

## Course level
First cycle

## Advancement level
G1N

## Course offered for
- Master of Science in Computer Science and Engineering
- Master of Science in Computer Science and Software 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

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|---|---|---|---|
| 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

Jonas Kvarnström

## Course website and other links

# Education components

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

# Course literature

## Books

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