

**SYLLABUS**

# **Introduction to Programming 7.5 credits Z0010E**

**Introduktion till programmering**

**Course syllabus admitted: Spring 2022 Sp 3 - Present**

**DECISION DATE  
2021-04-28**

# Introduction to Programming 7.5 credits Z0010E

## Introduktion till programmering

### First cycle, Z0010E

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Datalogi	Computer Technology

## Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language + Swedish upper secondary school courses Mathematics 3c (specific entry A8).

Or:

Swedish upper secondary school courses Matematik D (specific entry 8)

## Selection

## Examiner

Fredrik Bengtsson

## Course Aim

The student should:

- Demonstrate knowledge of proven experience in design and construction of imperative programs and capacity to plan and carry out advanced tasks in the form of implementation of imperative programs designed to solve specific technical problems.
- Demonstrate the ability to model problems and to identify and formulate solutions in a modern imperative language.
- Demonstrate the ability to critically analyze and evaluate technical solutions in the form of existing programs in imperative languages , as well as predict and evaluate sequences of events in these.

## Contents

Introduction to program development and development environments. Variables and program states, choice, iteration, recursion. Arithmetic and logic expressions, strings and text processing. Generalisation, parametrisation and function abstraction. Dynamic data structures, the file concept, standard libraries and error handling. References vs. values, the alias problem. Introduction to objects. Problem solving, program structure and documentation.

## Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

Instruction consists of lectures, seminars and laboratory work. Lab assignments will be associated with a deadline.

## Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided.

Written exam and both oral and written presentation of laboratory assignments.

Passing the lab assignments part of the course requires a passed grade on all individual assignments.

## Literature. Valid from Spring 2022 Sp 3

Alternative 1 - buy:

Titel: Think Python: How to Think Like a Computer Scientist

Author: Allen B. Downey

Publisher: O'Reilly Media

ISBN 9781491939369

Alternative 2 - download:

Titel: Think Python: How to Think Like a Computer Scientist

Author: Allen B. Downey

Publisher: Green Tea Press

Link for download: <http://greenteapress.com/wp/think-python-2e/>

## Course offered by

Department of Computer Science, Electrical and Space Engineering

## Modules

Code	Description	Grade scale	Cr	Status	From period	Title
0001	Laboratory work	U G#	3	Mandatory	S22	
0002	Written exam	G U 3 4 5	4.5	Mandatory	S22	

## Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

## Syllabus established

by Jonny Johansson, HUL SRT 2021-04-28