LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Inledande programmering med Python
Introduction to Programming Using Python

EDAA70, 7,5 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED C/D
Date of Decision: 2023-04-18

General Information

Main field: Technology.
Compulsory for: B1, K1, R1
Elective Compulsory for: W3
Language of instruction: The course will be given in Swedish

Aim

The purpose of the course is to give students an introduction to programming. The focus is on computer science concepts and programming skills with problem solving and stepwise development.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- be able to explain fundamental concepts in imperative and object-oriented programming
- be able to explain and give examples of the use of basic datatypes and simple algorithms
- be able to explain step by step what happens when a program is run

Competences and skills
For a passing grade the student must

- be able to develop and implement algorithms to solve simple problems
- be able to use basic datatypes for collections (lists, sets, and maps)
- be able to structure programs with functions, classes, and methods
- be able to stepwise develop, test, and debug programs

Judgement and approach
For a passing grade the student must

- be able to judge which basic datatypes and algorithms are suited for solving different problems

Contents

- Basic programming constructs like functions, iteration, and conditional statements.
- Basic values and types like integers, floats, Booleans, and strings.
- Variables and assignment.
- Basic data types for composite values, like lists, tuples, sets, and maps.
- Input, output and files.
- Simple algorithms for searching, summation, and similar
- Use of libraries and classes, for example, random numbers, computations, plots, and domain-specific problems. Examples of libraries include NumPy and SciPy.
- Basic knowledge about classes and methods.
- Basic execution model with function calls, parameter transmission, objects and method calls.
- Basic programming methodology with step-wise development, testing and debugging.
- Basic use of programming tools.
- Python 3 is used as the programming language.

Examination details

Grading scale: TH - (U,3,4,5) - (Fail, Three, Four, Five)
Assessment: Written examination. To qualify for the written examination, students must have completed the compulsory course items.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts
Code: 0120. **Name:** Written Examination.
Credits: 3. **Grading scale:** TH. **Assessment:** Written examination. The final grade of the course is based on the result of this examination. To qualify for the written examination, the compulsory course items must be completed. **Contents:** Written examination.
Code: 0220. **Name:** Laboratory Work and Assignments.
Credits: 4,5. **Grading scale:** UG. **Assessment:** The compulsory laboratory work and the assignments must be completed to qualify for a passing grade. **Contents:** Laboratory work and assignments.

Admission

The number of participants is limited to: No
The course overlaps following course/s: EDA011, EDA010, EDA015, EDA016, EDA017, EDA390, EDA500, EDA501, EDA616, EDA618, EDAA10, EDAA20, EDAA55, EDAA65, EDAA45, EDAA50

Reading list

- Allen B. Downey: Think Python 2nd Edition, How to Think Like a Computer

Scientist. O'Reilly, 2015, ISBN: 9781491939369. The book is available freely online at https://greenteapress.com/wp/think-python-2e.

Contact and other information

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