Course syllabus

Introduction to Programming Using Python
Inledande programmering med Python

EDAA70, 7.5 credits, G1 (First Cycle)

Valid for: 2025/26
Faculty: Faculty of Engineering LTH
Decided by: PLED C/D
Date of Decision: 2025-04-14
Effective: 2025-05-05

General Information

Main field: Technology **Depth of study relative to the degree requirements:** First cycle, in-depth level of the course cannot be classified
Mandatory for: B1, K1, R1
Elective mandatory 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

- explain basic concepts in imperative and object-oriented programming
- explain and give examples of the use of basic data types and simple algorithms

- choose basic data types appropriate for solving given problems
- interpret (well-written) program code to correctly describe what happens when it is executed

Competences and skills
For a passing grade the student must

- independently implement programs to solve problems in different application domains
- independently create algorithms that use basic data types and collections (lists, sets and key-value tables)
- construct and structure programs consisting of several classes, methods and functions
- be able to stepwise develop, test, and debug programs
- incrementally develop, test and debug programs

Judgement and approach
For a passing grade the student must

- assess which basic data types and algorithms are suitable for solving different problems
- evaluate existing code to find and fix simple programming errors

Contents

- Basic program constructs such as functions, iteration, and conditional statements.
- Basic values and types such as integers, floats, booleans, and strings.
- Variables and assignment.
- Basic data types for composite values, such as lists, tuples, sets, and key-value tables.
- Input, printing and files.
- Simple algorithms for searching, sorting and the like.
- Using existing libraries and classes.
- Basic knowledge of object-oriented programming, classes and methods.
- Orientation on inheritance.
- Basic execution model with function calls, parameter passing, objects and method calls.
- Basic programming methodology with step-by-step 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:

For final grades passed programming assignments and a passed exam are required. In order to participate in the exam, passed programming assignments are required. The final grade for the course is based on the grade of the exam.

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.

Modules
Code: 0120. **Name:** Written Examination.
Credits: 3.0. **Grading scale:** TH - (U, 3, 4, 5). **Assessment:** Approved exam. **The module includes:** Written exam.
Code: 0220. **Name:** Laboratory Work and Assignments.
Credits: 4.5. **Grading scale:** UG - (U, G). **Assessment:** Approved laboratory work and assignments. **The module includes:** Laboratory work and assignments.

Admission

The number of participants is limited to: No
Kursen överlappar följande kurser: 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

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