



# BB1000 Programming in Python 7.5 credits

## Programmering i Python

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

## Establishment

Course syllabus for BB1000 valid from Autumn 2019

## Grading scale

A, B, C, D, E, FX, F

## Education cycle

First cycle

## Main field of study

Technology

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

After completion of the course the student shall have

Knowledge and understanding to:

- describe basic syntax, computer types and structure in Python, use logic control flows (repetitions and branching), separate code in units (functions), with the purpose of applications in problem solving.
- Use libraries to develop algorithms in code, with the purpose to calculate and present results graphically.
- Use versioning tools for backup on own computer as well as for collaboration in group, using resources on the web.
- Apply test-based development tools when writing programs.

## Course contents

The course aims to give basic knowledge on how to write programs in Python. The course consists of the following parts:

- Python syntax: variables, data types, functions and modules.
- File management, reading, converting and writing of data.
- Basic Linux (bash).
- Version management with git.
- Object oriented programming and classes.
- Program testing with pytest.
- The libraries, numpy, pandas and matplotlib
- Decorators and iterations in python.

## Specific prerequisites

Swedish secondary school Physics 2, Chemistry 1 and Mathematics 4 or equivalent

## Examination

- DAT1 - Computer assignment, 7.5 credits, grading scale: A, B, C, D, E, FX, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

The learning objectives are examined with E-level assignments during the computer lab. In addition, a voluntary examination with computer will be offered with problems at A-D level. For grades A-D, an approved grade on DAT1 and a voluntary examination with a computer are required.

## **Ethical approach**

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.

## **Additional regulations**

Students are advised to use their own computer (laptop) for the course.