# Introduction to Python

Single subject and programme course

3 credits

Introduktion till Python

732A74

Valid from: 2018 Spring semester

**Determined by**
Course and Programme Syllabus Board
at the Faculty of Arts and Sciences

**Date determined**
2018-03-20

## Main field of study
Computer Science

## Course level
Second cycle

## Advancement level
A1N

## Course offered for
- Master's Programme in Statistics and Machine Learning

## Entry requirements
A bachelor's degree in one of the following subjects: statistics, mathematics, applied mathematics, computer science, engineering, or equivalent. Completed courses in calculus, linear algebra, statistics and programming are required. Documented knowledge of English equivalent to Engelska B/Engelska 6

## Intended learning outcomes
After completion of the course the student should at an advanced level be able to:
- Write a computer code for scientific computing using basic Python language elements
- Use simple and advanced data structures for problem solving
- Apply tools available in some commonly used Python packages
- Correct mistakes in own codes by means of debugging tools

## Course content
- Python basics: programming environment and documentation, program flow, variables, comments, numerical operators, loops, conditional statements.
- Data structures: simple data types, tuples, lists, dictionaries, sets, iterators and generators.
- Functions and functional programming, anonymous lambda functions, comprehensions.
- Classes and object oriented programming, objects and message passing
- The standard library and essential third-party packages for graphics, scientific computing and data manipulation.
- Debugging.

## Teaching and working methods

The teaching comprises lectures and computer exercises. Homework and independent study are a necessary complement to the course.

## Examination

Written reports on computer exercises. Detailed information about the examination can be found in the course's study guide.

If the LiU coordinator for students with disabilities has granted a student the right to an adapted examination for a written examination in an examination hall, the student has the right to it. If the coordinator has instead recommended for the student an adapted examination or alternative form of examination, the examiner may grant this if the examiner assesses that it is possible, based on consideration of the course objectives.

Students failing an exam covering either the entire course or part of the course twice are entitled to have a new examiner appointed for the reexamination.

Students who have passed an examination may not retake it in order to improve their grades.

## Grades

Two grade scale, older version, U, G

## Other information

Planning and implementation of a course must take its starting point in the wording of the syllabus. The course evaluation included in each course must therefore take up the question how well the course agrees with the syllabus.

The course is carried out in such a way that both men´s and women´s experience and knowledge is made visible and developed.

## Department

Institutionen för datavetenskap