DEPARTMENT OF MATHEMATICAL SCIENCES

MVG301 Programming with Python, 7.5 credits

Programmering med Python, 7,5 högskolepoäng

First Cycle

Confirmation

This course syllabus was confirmed by Department of Mathematical Sciences on 2021-09-24 to be valid from 2022-01-17, spring semester of 2022.

Field of education: Science 100%
Department: Department of Mathematical Sciences

Position in the educational system

The course is read during the second semester of the Mathematics program, but can also be read as an independent course. It is a basic course in programming and is counted, in the course requirements for a bachelor's degree, as a course outside the main area of Mathematics.

The course can be part of the following programme: 1) Bachelor's Programme in Mathematics (N1MAT)

Main field of studies	*Specialization*
-	G1F, First cycle, has less than 60 credits in first-cycle course/s as entry requirements

Entry requirements

General entry requirements and the equivalent of the course MMG200 Mathematics 1.

Learning outcomes

On successful completion of the course the student will be able to

- independently construct (well structured) programs in Python,
- construct simple graphics using the Matplotlib.Pyplot library,

- describe and use some functions from the NumPy, SciPy and SymPy libraries respectively.

Course content
Briefly about the basic structure of a computer. Problem solving and Algorithms. The basics in programming with Python; simple data types, expressions, some control flow tools. Input and output, reading and writing files. Defining functions, parameters and passing arguments. The libraries NumPy, SciPy och SymPy are briefly discussed. Documentation and debugging. Some common data structures in Python. Recursion. Creating simple graphics using the Matplotlib.pyplot libary. A first look at classes and objects in Python.

Form of teaching

Language of instruction: Swedish

Assessment
The course is assessed through an exam at the end of the course and obligatory computer labs.

If a student, who has failed the same examined component twice, wishes to change examiner before the next examination, a written application shall be sent to the department responsible for the course and shall be granted unless there are special reasons to the contrary (Chapter 6, Section 22 of Higher Education Ordinance).

Grades
The grading scale comprises: Pass with Distinction (VG), Pass (G) and Fail (U).

Course evaluation
The course is evaluated with an anonymous questionnaire and/or a discussion with the student representatives. The results of and possible changes to the course will be shared with students who participated in the evaluation and students who are starting the course.

Additional information
For a list of course literature, see:
https://www.chalmers.se/sv/institutioner/math/utbildning/grundutbildning-goteborgs-universitet/kurslitteratur/Sidor/Kurslitteratur-i-matematik.aspx

The course MVG301 Programming with Python replaces the course MVG300 Programming with Matlab. It is not allowed to be registered and/or examined in more

than one of these courses.