



FBB3110 Computational Python 5.0 credits

Python för beräkningsvetenskaper

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

Establishment

Course syllabus for FBB3110 valid from Spring 2010

Grading scale

G

Education cycle

Third cycle

Specific prerequisites

Basis UNIX skills

Language of instruction

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

Intended learning outcomes

After having completed the course the student will be able to use python scripts for tasks involving

- numerical problems using object orientational principles, advanced datastructures, classes and overloading operators
- scripts for parameter studies with external software
- subtract information from unformatted data files
- interfaces with numerical packages blas and lapack
- interfaces with compiled languages
- graphical interfaces

Course contents

There will be five meetings with the following content

1. Basics of python and its relation to perl and awk
2. Numerical python (numpy)
3. Interfaces with Fortran and C
4. GUI programming
5. Data handling

Disposition

This course will consist of highly interactive seminars, which depend on the active participations of the students, including completed assignments for each meeting.

Course literature

Lecture notes.

Hans-Petter Langtangen: Python scripting in computational science, 3rd edition (2007)

Examination

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.

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

Other requirements for final grade

To pass the course the student has prepare assignments for each meeting and be present at least 4 of 5 meetings. A missed meeting must be completed with an extra assignment.

There will be a final assignment where the student should write a report describing how scripting has been used (or may be used) in relation to his/her own field of research. The report (1-2 pages) is to be submitted to the BILDA

platform before a predefined date. The second part of the task is to write comments to a report assigned by the teacher written by another student also to be submitted to BILDA. In the final examination meeting the reports and comments will be discussed orally.

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.