bodenseo

Introduction into Python for Scientists and Engineers

The course covers the standard data structures and the usage of their methods. It introduces control structures and functions. Code organization in Modules and Packages is another focus of this introduction. It also introduces techniques for numeric data processing, including efficiently manipulating and processing large data sets using NumPy and Pandas and data visualization with the module Matplotlib.

Content:

- Basic data classes:
  - Integers
  - Floats
  - Strings
- Other data types:
  - Lists
  - Tuples
  - Dictionaries
  - Sets
- Conversions between various data types
- Reference, copy, deepcopy
- Control flow:
  - if Statements
  - for and while loops
  - break and continue statements in loops
  - else statement in loops

- Functions
- Reading and writing Files
- lambda, map and filer
- List Comprehension
- Sorting
- Exception handling
- Modules as an alternative to MATLAB
    - Numpy
    - Matplotlib
    - Pandas

Prerequisite:

Some programming experience with other high-level programming languages like C/C++, Java, Perl, PHP, Tcl or others. Python knowledge is not necessary.

Literature:

http://www.python-course.eu/python3_course.php