Collegio Carlo Alberto

UNIVERSITÀ DEGLI STUDI DI TORINO

MaDaS
Master in Data Science for Complex Economic Systems

CODING IN PYTHON

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Learning Objectives

The module is an introduction to the Python programming language. At the end of the module, the students should be familiar enough with Python language to read and write non-trivial Python code and, when needed, to exploit the potential of specific Python packages.

Course Content

The module is an introduction to the Python programming language and mainly deals with the following topics:
1) native data types
2) flow control structures and functions
3) file I/O
4) introduction to classes
5) introduction to NumPy for scientific computing

Depending on time availability and students' familiarity with these subjects, a few hours might be devoted to an introduction to specific Python packages (e.g. Pandas, Network, etc.).

Course Methodology

The course will be held in the computer lab. Students will be taught how to write their own code through concrete examples. Students are encouraged to actively interact in class and will be asked to work   on   problem   sets   assigned   during   the   lessons.

Reference

- Michael Dawson, Python Programming for the Absolute Beginner
- Allen Downey, Think Python. How to Think Like a Computer Scientist (available online for free at http://greenteapress.com/thinkpython/thinkpython.pdf)
- Wes McKinney, Python for Data Analysis
- software: https://www.python.org/downloads/

Code examples will be presented during the course.

Course Evaluation

Students will be evaluated (pass/fail) on the basis of group projects that will be individually discussed in detail with each of them. Projects will be assigned during the course.

About the Instructor - Junior Despina Fellow

Ph.D. candidate at Vilfredo Pareto Doctorate in Economics. Paolo got his Master's degree in Physics from the University of Turin and a second level Master's degree in Finance from the University of Turin and Collegio Carlo Alberto. After working in the financial services industry for a couple of years, he started his PhD in Economics in October 2013. His interests range from Complex Systems and Artificial Intelligence to Network Analysis and Agent-based simulation in Economics. He is currently adopting a distant reading approach to the analysis of knowledge evolution in the economic discipline