

Python for Scientists

Course offered for the LM Environmental Engineering, LM Ingegneria Civile, PhD program in Civil, Chemical and Environmental Engineering Curriculum in Fluid Dynamics and Environmental Engineering

(Possibility of participation for students in other PhD cycles or other PhD courses)

Course Description

This course is designed to introduce the student to the Python Foundations along with content relevant to scientists and engineers interested in using Python for their day-to-day computational tasks. It is a highly interactive training where the student will learn the essentials of the Python language and of the foundational packages of Python's scientific ecosystem. The course starts with a brief overview of the Scientific Python ecosystem, and then different sessions are set to learn about the techniques for numeric data processing, including efficiently manipulating and processing large data sets using NumPy arrays and data visualization with 2D plots using Matplotlib. An introduction to the scientific library Scipy is given along with practical examples. Then, the course will have a session to introduce Pandas to efficiently load, clean, normalize, aggregate, transform, and visualize data. The course will end with a dedicated session to solve problems of interest proposed by the students.

Course Organization

The course consists of lectures and computer based tutorial. A hybrid modality will be offered (virtual and in-presence participation).

Teacher

Andrea Lira Loarca - andrea.lira.loarca@unige.it

Duration

21st - 23rd June from 09:00 until 13:00

12 hours

Introduction to python, editors, scientific libraries (1 hour)

Basics of python programming (1 hour)

Numpy (with examples) (1 hour)

Matplotlib (with examples) (2 hours)

Scipy (with examples) (2 hours)

Pandas (with examples) (2 hours)

Exercises proposed by students. (3 hours)

Overview of advanced libraries (depending time and interest)

Registration

Registration within the 18th of June 2021

Please register here: <https://forms.gle/4srPoY7dnDw4bBck8>