



UNIVERSITÀ  
DEGLI STUDI DI MILANO-BICOCCA

## SYLLABUS DEL CORSO

### Python Programming

2122-86R-PyProg

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#### Aims

- get to know the basic syntax of the Python (v 3) language and of the Numpy, Matplotlib and Pandas packages, and the structure of their most commonly used classes
- learn how to read and write data tables with Numpy and Pandas
- learn how to produce publication-quality plots with Matplotlib
- get acquainted with the implementation of simple numerical methods exploiting Numpy classes
- model fitting basics in Python

#### Contents

- Installation of a Python environment and package management
- Syntax, data types, native classes, strings and base methods
- the Numpy package
- the Matplotlib package
- the Pandas package
- Data table input/output, data manipulation and visualization
- Creation of a complex plot with Matplotlib
- Model fitting and error estimation

## **Detailed program**

### **Prerequisites**

Access to a computer and the ability to open a terminal window and a text editor are required. Basic mathematical-statistical knowledge and minimal programming experience are expected.

### **Teaching form**

1 CFU, 10 hours. Lectures and hands-on sessions, divided into 2-hour-long meetings.

### **Textbook and teaching resource**

Handouts.

### **Semester**

TBD

### **Assessment method**

Presentation of the candidate's thesis topic (or other topic of choice), highlighting the role of Python

### **Office hours**

Contact the teacher to agree on a time slot.

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