

Computational Economics I (Python) - CAEN/UFC

Instructor: Marcelo Aarestrup Arbex

Period: August 04 - 27, 2020

Lecture Time: Tuesdays, Thursdays, 2:00 - 5:00pm (Brazil)

Lecture Location: Google Meet or Zoom.

A. Course Description

The main goal of this course is to introduce students to computational economics using Python. Python is a general-purpose programming language conceived in 1989 by Dutch programmer Guido van Rossum. Python is free and open source, with development coordinated through the Python Software Foundation. Python has experienced rapid adoption in the last decade and is now one of the most popular programming languages. This course will use materials from QuantEcon <https://python.quantecon.org/>, which hosts lecture series on economics, finance, econometrics and data science, as well as additional reference materials (listed below).

List of Topics (tentative dates)

1. Introduction to Python - **04, 06 August 2020**
 - About Python
 - An Introductory Example
 - Functions
 - Python Essentials
 - OOP I: Introduction to Object Oriented Programming
2. Scientific Libraries - **11, 13 August 2020**
 - Python for Scientific Computing
 - NumPy
 - Matplotlib
 - SciPy
 - Other Libraries: Numba, Pandas.
3. Python Programming - **18 August 2020**
 - Writing Good Code
 - Debugging
4. Tools and Techniques - **20, 25, 27 August 2020**
 - Geometric Series for Elementary Economics
 - Linear Algebra
 - Multivariate Hypergeometric Distribution
 - Modeling COVID-19

B. Reference Material

- *Quantitative Economics with Python*, <https://python.quantecon.org/>
- *Economic Dynamics: Theory and Computation*, John Stachurski, The MIT Press, 2009.
- *Applied Computational Economics and Finance*, Mario Miranda and Paul Fackler, The MIT Press, 2002.