

Data Science in Economics with Python

An introduction to the Python programming language and its use in data science



PROGRAMME
Master 1

SEMESTER
Semester 2

CREDITS
2 ECTS

CONTACT HOURS
15h Lectures

Course Description

This course offers an introduction to the Python programming language and its use in data science[cite: 208]. The content covers data manipulation, data analysis, and extends to the use of modern Python libraries to implement machine learning methods[cite: 209].

Applications covered in the lectures align with scenarios that students may encounter during their internship or their professional career[cite: 210]. Students are expected to handle the data provided by the instructor and utilize their acquired Python knowledge to deliver high-quality analytical work.

Learning Outcomes

- Using Python to manipulate and visualize data in business and economics[cite: 211].
- Construct, estimate, and interpret statistical models using Python packages to address real-world economic issues[cite: 212].
- Understand how to apply machine learning techniques using Python to business problems for predictive modeling, uncovering patterns, and making economic forecasts[cite: 213].

Indicative Content

1. **First steps:** Introduction to Python.
2. **User-defined functions:** Building functions to optimize workflow[cite: 214].
3. **Handling datasets:** Managing data to facilitate statistical analysis.
4. **Descriptive analysis:** Data visualization and descriptive statistics[cite: 215].
5. **Modeling:** Implementing econometric and machine learning models.

Teaching & Learning Approach

The course blends technical instruction in Python programming with practical applications in economics and business[cite: 216]. The emphasis is on hands-on workflow optimization, data manipulation, and applying machine learning techniques to real-world scenarios that prepare students to take on challenges in their future professional environments.

Assessment

Classroom exam