Welcome to Programming with Python!

A course to learn Python for Business

Objectives

This module introduces programming with python. Python is a modern and powerful programming language that is widely used in industry and academic projects. Students will learn how to find a code-based solution to basic and complex problems. The course is based on many examples that illustrate how to tackle a potentially complex issue as well as how to implement a solution.

Learning Outcomes

Upon completion of the course, students …

- can implement solutions to complex problems in python
- know basic concepts of programming and algorithms such as loops, functions
- can apply basic data manipulation and visualization
- will be able to read and write code
- will have experience working with python libraries such as NumPy, Pandas, Matplotlib
- will know how to collaborate in a small team to find solutions for problems at hand

Please note that this course is specifically designed for business students. That is, it is not required to have any prior knowledge or experience in programming to attend this course. The teaching format will make it possible to account for different levels of programming skills such that every student can take the most out of the course.

Course Structure

The course is based on a hands-on approach with a two-fold structure:

1. Lectures: In the lectures, we will introduce concepts and illustrate them in reproducible examples.
2. Hands-on Tutorials: Students will practically apply the concepts of the lecture in hands-on examples.
3. Assignments: Students will solve programming exercises in groups of up to three students that they will have to hand in.

Course Blocks

The core content of the course is organized in three blocks:

1. Part I: Introduction to Programming with Python
2. Part II: Data Science with Python
3. Part III: Programming Projects

You can find more information on the course blocks and the corresponding lectures in the syllabus.

How to see the slides

- This course is based on Quarto
- It uses revealjs to render the slides
- You find the slides for each lecture in the corresponding lecture
- To see the slides, click on `RevealJS` in the top right corner

Passing the Course

- 75% attendance required for passing the course
- You will be given two programming assignments and one project to solve with Python
- You can group up (3 students) and work together
- Each student group submits one solution together

AI Policy

Level 1: Pause – Use of AI defined by the educator

A course chatbot is available on the learning website for exploratory study. It is designed to guide your problem-solving process rather than provide answers directly. Use it as a learning tool, not a solution generator.

You may also use external AI tools (e.g., ChatGPT, Claude, Mistral, Gemini). However:

1. Please be careful and try to understand the code generated.
2. Relying on AI to solve tasks for you weakens your own learning.
3. AI should ideally support understanding — not replace practice.
4. Using AI without understand the code can lead to security risks.

Questions

If you have any questions regarding the course, please contact me under vlcek@beyondsimulations.com.

Contributors

Thanks to Phillip Bach whose previous course laid the foundation for this course.