Introduction to Python Programming: Foundations & Basics

29 March – 2 April 2027
Amsterdam (Netherlands)



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Why This Course

Python has become one of the most versatile and widely used programming languages in data analysis, automation, and software development. This intensive 1-week program provides participants with a solid foundation in Python programming, combining theory with practical exercises to develop real-world coding skills. By the end of the course, participants will be able to write functional Python programs and apply programming concepts to solve everyday challenges.

What You'll Learn and Practice

By participating in this course, you will:

- Understand Python syntax, core concepts, and programming best practices.
- Work effectively with variables, data types, control structures, and functions.
- Manipulate and process data using lists, dictionaries, and file input/output.
- Apply object-oriented programming principles in practical scenarios.
- Gain hands-on experience using Python libraries for data analysis and basic automation.

Program Flow

Day 1: Python Basics

- Introduction to Python and its applications
- Setting up the Python development environment
- Variables, data types, and basic operations
- Control structures: if statements and loops

Day 2: Data Structures and Functions

- Lists, tuples, and dictionaries
- String manipulation and formatting
- Creating and using functions
- Using modules and importing libraries



Day 3: File I/O and Error Handling

- Reading from and writing to files
- Working with CSV and JSON data
- Exception handling and debugging techniques
- Best practices for managing errors

Day 4: Object-Oriented Programming OOP

- Introduction to OOP concepts
- Creating classes and objects
- Inheritance, polymorphism, and encapsulation
- Abstraction and designing reusable code

Day 5: Practical Applications and Advanced Topics

- Working with external Python libraries
- Introduction to data analysis using pandas
- Basic web scraping techniques
- Final project and code review

Training Methodology

The course combines theoretical instruction with hands-on coding exercises to ensure practical learning:

- Guided coding exercises and programming challenges
- Real-world projects to reinforce concepts
- Interactive demonstrations and live coding sessions
- Peer collaboration and code review for continuous improvement

Beyond the Course

Participants will leave the program able to:

- Develop Python scripts to automate routine tasks.
- Build basic data analysis solutions using Python and pandas.
- Create simple web scraping tools to gather online information.
- Apply object-oriented programming to model real-world scenarios.
- Write clean, maintainable Python code and apply best practices for problem-solving.

