

# Python II - advanced techniques



Course code: PYTHON\_ADV

The course is designed for all programmers who have programming experience in Python at the PYTHON\_INTRO course level. In the course, you will learn more advanced elements of the language such as OOP, using generators and iterators, Lambda expressions, anonymous functions, decorators, JSON and many other practical and necessary topics for Python developers.

Affiliate	Duration	Course price	ITB
Praha	5	25 500 Kč	50
Brno	5	25 500 Kč	50
Bratislava	5	1 020 €	50

The prices are without VAT.

## Course terms

Date	Duration	Course price	Type	Course language	Location
 22.06.2026	5	25 500 Kč	Presence	CZ/SK	GOPAS Praha
 13.07.2026	5	867 €	Presence	CZ/SK	GOPAS Bratislava
07.09.2026	5	25 500 Kč	Presence	CZ/SK	GOPAS Praha
21.09.2026	5	1 020 €	Online	CZ/SK	Online
21.09.2026	5	1 020 €	Presence	CZ/SK	GOPAS Bratislava
21.09.2026	5	25 500 Kč	Presence	CZ/SK	GOPAS Brno
30.11.2026	5	25 500 Kč	Presence	CZ/SK	GOPAS Praha
07.12.2026	5	25 500 Kč	Presence	CZ/SK	GOPAS Brno

The prices are without VAT.

## For whom the course is intended:

- Programmers who have programming experience in Python at the PYTHON\_INTRO course level
- Experienced developers who have experience with other programming languages and want to switch to Python. In this case, it is advisable to familiarize yourself with at least the complete basics of the language in advance.

## Required entry skills

- Basic knowledge of Python at the level of the PYTHON\_INTRO course

## Teaching methods

- Expert interpretation with practical examples, exercises on computers.

## Studying materials

- Presentation of the material discussed in printed or online form.

## Syllabus

A quick recap of Python basics

- History and basic features of Python
- Installation and development environment
- Using multiple versions of CPython
- Pure function and variable scope
- Mutability and immutability of objects
- Using collections

### GOPAS Praha

Na Strži 2097/63  
140 00 Praha 4 - Krč  
Tel.: +420 226 201 390  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Brno

Nové sady 996/25  
602 00 Brno  
Tel.: +420 530 513 590  
[info@gopas.cz](mailto:info@gopas.cz)

### GOPAS Bratislava

Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 902 903 132  
[info@gopas.sk](mailto:info@gopas.sk)



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- Use of \*args and \*\*kwargs

## Collection Comprehensions

- Sheet Comprehensions
- Set Comprehensions
- Dictionary Comprehensions

## Modules, packages and distribution of applications (modules and packages)

- Objects, Namespaces and Scope
- Modules
- Packages
- Virtual Environment (external)
- Using Pip
- Freezing
- Using PyPi
- Packaging and Distribution

## PPE techniques

- Class o object
- Using self
- Instance methods
- Class methods
- Static methods
- Inheritance, polymorphism
- Properties
- An object like a dictionary

## Error Handling

- Exception handling
- Raising Custom Exception

## Generators and Iterators

- Iterators, iterables and sequences
- Magic function
- **iter**
- {}
- Magic function
- **next**
- {}
- Custom iterable class
- Generator function
- yield return

## Fundamentals of functional programming in Python

- Nested functions
- Functions as an object
- Keyword non-local
- Closures
- Anonymous / Lambda functions

## Magic methods

- String Conversion
- Arithmetic Operations
- Comparison Operations

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# Python II - advanced techniques

- Conversion

## Decorators

- Built-in Decorators
- Standard library Decorators
- Custom Decorators

## Resources and Persistent Storage

- Work with resources (try / finally)
- Context manager and magic methods
- **enter**
- and
- **exit**
- Working with files (read, write)
- Working with Python pickle formats,
- Key-value database shelf
- JSON, CSV, XLSX

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