

# Python I - introduction to programming

Course code: PYTHON\_INTRO

The course is designed for beginners who want to learn the basics of the modern, elegant and highly efficient Python language. In this course, you will learn the basic features of the language, the use of functions and data structures, and the basics of object-oriented programming in Python. If you have no programming experience, we recommend first taking the course Introduction to Algorithmization and Programming [PRG]

Affiliate	Duration	Course price	ITB
Praha	5	20 500 Kč	50
Brno	5	20 500 Kč	50
Bratislava	5	900 €	50

The prices are without VAT.

## Course terms

Date	Duration	Course price	Type	Course language	Location
<b>G</b> 18.11.2024	5	900 €	Presence	CZ/SK	GOPAS Bratislava prezenčne
<b>G</b> 02.12.2024	5	20 500 Kč	Presence	CZ/SK	GOPAS Brno
02.12.2024	5	900 €	Presence	CZ/SK	GOPAS Bratislava prezenčne
<b>G</b> 16.12.2024	5	20 500 Kč	Presence	CZ/SK	GOPAS Praha
06.01.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Praha
20.01.2025	5	900 €	Online	CZ/SK	GOPAS Bratislava online
20.01.2025	5	20 500 Kč	Online	CZ/SK	GOPAS Praha online
27.01.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Brno
24.02.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Praha
17.03.2025	5	900 €	Presence	CZ/SK	GOPAS Bratislava prezenčne
07.04.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Brno
07.04.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Praha
12.05.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Praha
19.05.2025	5	900 €	Presence	CZ/SK	GOPAS Bratislava prezenčne
16.06.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Brno
23.06.2025	5	20 500 Kč	Presence	CZ/SK	GOPAS Praha

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### Annotation:

The course is designed for beginners who want to learn the basics of the modern, elegant and highly efficient Python language. In this course, you will learn the basic features of the language, the use of functions and data structures, and the basics of object-oriented programming in Python. If you have no programming experience, we recommend first taking the course Introduction to Algorithmization and Programming [PRG]

### For whom the course is intended:

- For beginner developers who want to learn Python programming.

### Required entry skills

**GOPAS Praha**  
Kodaňská 1441/46  
101 00 Praha 10  
Tel.: +420 234 064 900-3  
[info@gopas.cz](mailto:info@gopas.cz)

**GOPAS Brno**  
Nové sady 996/25  
602 00 Brno  
Tel.: +420 542 422 111  
[info@gopas.cz](mailto:info@gopas.cz)

**GOPAS Bratislava**  
Dr. Vladimíra Clementisa 10  
Bratislava, 821 02  
Tel.: +421 248 282 701-2  
[info@gopas.sk](mailto:info@gopas.sk)



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# Python I - introduction to programming

- Basic knowledge of algorithms and programming at the level of the PRG course, or experience with programming in another language

## Teaching methods

- Expert interpretation with practical examples, exercises on computers.

## Studying materials

- Printed presentations of the discussed material.

## Syllabus

### Introduction

- History and basic features of Python
- Installation
- Code writing conventions, syntax basics
- Development environment

### Basic data types and variables

- Strings
- Numbers
- Boolean
- Operators for working with strings
- Arithmetic operators
- Comparison operators and logical operators
- Conversion
- Variables
- Annotation of types and hints
- String formatting

### Program run control

- The if command
- while and for commands
- Range, break and continue

### Function

- Definition of functions and procedures
- Passing parameters
- Standard parameter values
- Scope of variables
- Recursion

### Program debugging (debugging) and catching exceptions

- Debugging the program
- Principle of error handling in Python
- Exception mechanism
- Commands try, except, raise, finally

### Basics of working with collections

- Sheet (list)
- Indexing and slices
- Variable vs. immutable types
- Tuples
- Set
- Dictionary
- String operations like a collection

#### GOPAS Praha

Kodaňská 1441/46  
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# Python I - introduction to programming

- Introduction to List Comprehension

## Built-in Functions

- Overview of basic built-in functions
- Functions for working with strings
- Mathematical functions
- Conversion function

## Modules and Packages

- The principle of modules for creating libraries of functions
- Standard modules
- Beep
- Virtual environment (external)

## Basics of PPE

- Basics of PPE
- Creating classes
- Using constructors
- Create an instance

## Working with files

- Basics of working with resources (try / finally)
- Basics of working with files files (reading, writing)

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