Macrosoft

Vzdelávanie s trvalým efektom

DOCUMENT

Course syllabus

CATEGORY

Java, Python courses

TRAINING FORMAT

In Bratislava or online with a lecturer

PRICE EXCL. VAT

648,78 €

PRICE INCL. VAT

798,00 €

including 23 % VAT

PDF SYLLABUS

Python Programmer - Key Skills

Clear overview of course topics, training scope and key information.

The Python course is intended for everyone who wants to learn the modern Python programming language. Python is an ideal programming language even for complete beginners. The course syllabus and program are compiled so that course graduates can find employment on the labor market. It also includes an introduction to artificial intelligence for programmers. After completing the course, you will receive a Certificate from us. The package includes courses: Python Programming - Basics with a scope of 2 days Python Programming - Advanced with a scope of 2 days Introduction to Working with Artificial Intelligence with a scope of 2 days

COURSE CONTENT

01 **Installing Python and PyCharm IDE**

creating first scripts running a program in PyCharm IDE running a program on Linux

02 **Python Language**

characteristics of the Python language history of the language and its use

03 **Lexical Structure of Python**

comments and white spaces identifiers, literals operators and separators keywords

04 **Data Types and Variables**

Boolean data type numbers and strings None data type

Macrosoft

Vzdelávanie s trvalým efektom

05 **Working with Strings**

creating strings basic operations with strings string formatting

06 **Operators and Expressions**

types of operators (logical, relational, arithmetic) precedence and associativity of operators

07 **Program Flow Control**

conditions loops

08 **Containers in Python**

tuples, lists, dictionaries, sets

09 **Dates and Time with the PyQt Library**

QDate, QTime and QDateTime classes universal time daylight and winter time

10 **Creating Charts with the Matplotlib Library**

creating and exporting charts line, bar and pie charts

11 **Working with Excel Files with the Openpyxl Library**

reading and writing data formulas, images and charts

12 **Working with Images with the Pillow Library**

image manipulation image export creating a watermark

13 **Creating a GUI with the PyQt Library**

principles of graphical user interface basic components (QLabel, QPushButton, QSlider) event programming working with graphics

14 **Creating Web Requests with the requests Library**

GET, POST, HEAD requests working with JSON data authentication

15 **Web Applications with the Flask Library**

basics of web applications routing templates

Macrosoft

Vzdelávanie s trvalým efektom

16 **Functions**

function types creating functions anonymous functions

17 **Object-Oriented Programming**

OOP principles classes, objects and methods inheritance

18 **Modules**

meaning of modules, built-in modules working with modules creating custom modules

19 **Packages**

meaning of packages working with packages

20 **Files and Directories**

writing to files reading from files with command working with CSV files

21 **Exceptions**

errors in a program catching and creating exceptions

22 **Practical Examples**

creating charts, working with images simple graphical and web application

23 **Basics of Python Language - Review**

lists (array), tuples and working with them working with strings, formatting, string module dictionaries and working with them

24 **Working with Files**

basics of working with files opening files for reading and writing working with files

25 **Errors and Exceptions**

familiarization with exceptions types, raising, catching and handling exceptions

Macrosoft

Vzdelávanie s trvalým efektom

26 **Object-Oriented Programming**

basics of OOP, classes, properties and methods constructors and destructors inheritance and multiple inheritance

27 **Debugging**

using a debugger for testing, finding errors, but also understanding a program written by another programmer

28 **Introduction to Working with Artificial Intelligence AI**

definition and history of AI, key areas and applications

29 **Use of AI**

creative writing, creation of images, music, video and code, robotics

30 **Theoretical Basics**

machine learning, neural networks, deep learning networks

31 **Large Language Models (LLM)**

definition of LLM, creation of language models, use of existing models

32 **Chatbots**

Copilot, Gemini, ChatGPT, DeepSeek

33 **Prompts**

definition of prompts, principles of prompt creation

34 **Practical Examples**

text summarization, translations, information mining, document analysis

---

This document serves as an informational overview of the course syllabus. Current dates, venue and availability are listed at Macrosoft.sk.

https://www.macrosoft.sk/en/courses/python-programmer