

PY-INP PYTHON INTRODUCTION (v3.8)



DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
4 Days	Introduction	Python	Instructor Led	NA

INTRODUCTION

In this Python training course, students learn to program in Python. The course is aimed at students new to the language who may or may not have experience with other programming languages. The course was written using Python 3.8, but is relevant for all students using Python 3.

AUDIENCE PROFILE

This course is intended for students who want to learn Python programming and may or may not have programming experience.

PREREQUISITES

Before attending this course, students must have:

- Some programming experience (recommended but not compulsory)

COURSE OBJECTIVES

After completing this course, students will be able to:

- Learn how Python works and what it is good for
- Understand Python's place in the world of programming languages
- Learn to work with and manipulate strings in Python
- Learn to perform arithmetic operations in Python
- Learn to work with Python sequences: lists, arrays, dictionaries, and sets
- Understand variable scope and global variables
- Learn to manipulate strings using various operations and methods
- Learn to perform operations on sequences (indexing, slicing, unpacking)
- Learn to write functions in Python
- Learn to Handle exceptions effectively
- Learn to work with dates and times in Python

COURSE CONTENT

Module 1: Python Basics

- Getting Familiar with the Terminal
- Running Python
- Running a Python file
- Collecting User Input

Exercise 1: Hello, World!

- Literals
- Python comments
- Data Types

Exercise 2: Exploring Types

- Variables

Exercise 3: A Simple Python Script

- Constants
- Deleting Variables
- Writing a Python Module
- Print() Function
- Collecting User Input

Exercise 4: Hello, You!

- Reading from and Writing with Files

Exercise 5: Working with Files

Module 2: Functions and Modules

- Defining Functions
- Variable Scope
- Global Variables
- Function Parameters

Exercise 6: A Function with Parameters

- Default Values

Exercise 7: Parameters with Default Values

- Returning Values
- Importing Modules
- Methods vs. Functions

Module 3: Math

- Arithmetic Operators
- Assignment Operators
- Precedences of Operations
- Built-in Math Functions
- The math Module
- The random Module

Exercise 9: How many Pizzas Do We Need?

Exercise 10: Dice Rolling

Module 4: Python Strings

- Quotation Marks and Specials Characters
- String Indexing

Exercise 11: Indexing Strings

- Slicing Strings

Exercise 12: Slicing Strings

- Concatenation and Repetition

Exercise 13: Repetition

- Combining Concatenation and Repetition
- Python Strings are Immutable
- Common String Methods
- String Formatting

Exercise 14: Playing with Formatting

- Formatting String Literals (f-strings)

Exercise 15: Outputting Tab-delimited Text

Module 5: Iterables:

Sequences, Dictionaries, and Sets

- Definitions
- Sequences
- Lists
- Sequences and Random

Exercise 16: Remove and Return Random Element

- Tuples
- Ranges
- Converting Sequences to Lists
- Indexing

Exercise 17: Simple Rock, Paper, Scissors Game

- Slicing

Exercise 18: Slicing Sequences

- min(), max(), and sum()
- Converting Sequences to Strings with str.join(seq)
- Splitting Strings into Lists
- Unpacking Sequences
- Dictionaries
- The len() Function

Exercise 19: Creating a Dictionary from User Input

- Sets
- *args and **kwargs

Module 6: Virtual Environments, Packages, and pip

Exercise 20: Creating, Activating, Deactivating, and Deleting a Virtual Environment

- Packages with pip

Exercise 21: Working with a Virtual Environment

Module 7: Flow Control

- Conditional Statements
- Compound Conditions
- The is and is not Operators
- all() and any()
- Ternary Operator
- In Between
- Loops in Python

Exercise 22: All True and Any True

- Break and continue
- Looping through Lines in a File

Exercise 23: Word Guessing Game

Exercise 24: for.. else

- The enumerate() Function
- Generators
- List Comprehensions

Module 8: Exception Handling

- Exception Basics
- Wildcard except Clauses
- Getting information on Exceptions

Exercise 25: Raising Exceptions

- The else Clause
- The finally Clause
- Using Exceptions for Flow Control

Exercise 26: Running Sum

- Raising Your Own Exceptions

Module 9: Python Dates and Times

- Understanding Time
- The time Module
- Time Structures
- Time as Strings
- Times as Strings
- Time and Formatted Strings
- Pausing Execution with time.sleep()
- The datetime Module
- Datetime.datetime Objects

Exercise 27: What Color Pants Should I wear?

- Datetime.timeDelta Objects

Exercise 28: Report on Departure Time

Module 10: FileProcessing

- Opening Files

Exercise 29: Finding Text in a File

- Writing to Files

Exercise 30: Writing to Files

Exercise 31: List Creator

- The os Module
- Walking a Directory
- The os.path Module
- A Better Way to Open Files

Exercise 32: Comparing Lists

Module 11: PEP8 and Pylit

- PEP8
- Pylit

ASSOCIATED CERTIFICATIONS & EXAM

There is no associated exam for this course.