

Python Programming Course Syllabus

1. Course Duration

The duration of the course is 40 lecture hours and required 60 additional personal coding work hours.

2. Course Topics

Introduction:

- Basic environment setup and execution alternatives.
- Benefits of using Python in your Organization.
- Interpreted languages and compiled languages.
- Using the Python Interpreter.
- Interactive Mode.
- Running python files.
- Working with Python shell.
- Integrated Development Environments (IDES).
- Interactive Mode Programming.
- Script Mode Programming.

Modules and Packages:

- Framework and Packages.
- Use of modules.
- Creating modules.
- Import Statement.
- PYTHONPATH Variable.
- Namespaces and Scoping.
- `dir()` Function.
- `globals()` and `locals()` Functions.
- `reload()` Function.
- Packages in Python.
- Constructing user defined packages.
- Packages for your specific industry.

Basic Operations:

- Types of Operator.
- Arithmetic Operators.
- Comparison Operators.
- Assignment Operators.
- Logical Operators.
- Membership Operators: `in`, `not in`.
- Identity Operators: `is`, `is not`.
- Operator Precedence.

Data Structures:

- Variables.
- Multiple Assignments.
- Numbers.
- Strings.



- Accessing Values in Strings.
- String Special Operators.
- String Formatting Operator.
- Triple Quotes.
- Built-in String Operations.
- Lists:
 - Accessing Values in Lists.
 - Updating Lists.
 - Delete List Elements.
 - Basic List Operations.
 - Indexing, Slicing, and Matrixes.
 - Built-in List Functions & Methods.
- Tuples:
 - Accessing Values in Tuples.
 - Updating Tuples.
 - Delete Tuple Elements.
 - Basic Tuples Operations.
 - Indexing, Slicing, and Matrixes.
 - Built-in Tuple Functions.
- Dictionaries:
 - Accessing Values in Dictionary.
 - Updating Dictionary.
 - Delete Dictionary Elements.
 - Properties of Dictionary Keys.
 - Built-in Dictionary Functions & Methods.
- Program control:
 - if statements.
 - ..else statements.
 - nested if statements.
 - while loop.
 - for loop.
 - nested loops.
 - Loop Control Statements:
 - break statement.
 - continue statement.
 - pass statement.
- Functions:
 - Function definition.
 - Syntax.
 - Calling a Function.
 - Pass by reference or value.
 - Function Arguments.
 - Required arguments.
 - Keyword arguments.
 - Default arguments.
 - Variable-length arguments.
 - The return Statement.
 - Scope of Variables.



- Basic Object Oriented Programming:
 - Creating class in Python.
 - Constructors.
 - Inheritance.
 - Polymorphism.

- File manipulation:
 - Opening files.
 - Working with files.
 - The open function.
 - File modes.
 - The file object attributes.
 - close() method.
 - write() method.
 - read() method.
 - Files: Input.
 - Files: Output.
 - Reading files.
 - Renaming & deleting files.
 - Writing into a file.
 - remove() method.

- Graphic User Interfaces:
 - Basic Operations using Tkinter.
 - Buttons and Textbox.
 - Menu Bar.
 - Message Box and Radio Button.
 - Checkbox and Event Creating.
 - Creating Application in GUI.

- Python and SQL Integration:
 - Overview of SQLite
 - Integrating Python with SQLite

- Student Project.

3. Tuition

400€ per student, 5 students minimum, 12 maximum.
Contact us to find the best delivery method and schedule: info@ostirion.net

