

PYTHON - Syllabus

- **Introduction to Python.**
- **Conditional Branching Control Statements.**
- **Conditional Looping Control Statements.**
- **Functions**
- **Data Structures**
- **Modules and Packages**
- **File-handling**
- **Exception handling – Python Try Except**
- **OOPs – Object Oriented Programming – Class, Object, Inheritance, polymorphism**
- **Reference Types**
- **Thread – Multithread**
- **GUI – (Graphical User Interface)**
- **Database connectivity**
- **Networking –client and Server program**
- **Standard Library**

Syllabus Covered:

1. Introduction to python

- What is python?
- What can python do?
- Why Python?
- Pycharm (Community Edition) Installation
- Comments

- Variables
- Datatypes
- Numbers
- Casting
- Strings
- Booleans

2. Conditional Branching Control Statements(if-Else, elif):

- Python conditions
- Indentation
- Simple if
- Elif, else
- Shorthand if, else
- Logical operator (and , or , not)
- Jumping Statements

3. Conditional Looping Control Statements(while, for):

1. While loops

- Introductions
- Jumping Statements (break, continue, pass)
- Nested while
- Practice section

2. For loops

- Introductions
- Using Jumping statements(break, continue, pass)
- Nested for loops
- Range() functions
- Practice sections

4. Functions :

1. what is functions?
2. Creating a functions
3. Calling a functions
4. Arguments
5. Numbers of Arguments
6. Arbitrary Arguments
7. Keyword Arguments
8. Arbitrary Keyword Arguments
9. Recursion

5. Data Structures:

1) List:

- Access list items
- Change list items
- Add list items
- Remove list items
- Loop list items
- List methods
- Exercise

2) Tuple:

- Access Tuples Elements
- Update and unpack Tuples
- Loops Tuple items
- Tuple methods

3) Set datatype:

- Access set items
- Remove set items
- Set Methods

4) Dictionary :

- Access dictionary items
- Change dictionary items
- Loops dictionary items
- Dictionary methods
- Exercise

6) Modules and Packages:

- What is modules?
- Create a module
- Inbuilt modules (Dates, math, Json)

7) File-Handling:

- What is File-Handling?
- Python file handling
- Python read files
- Python write and create files
- Python delete file

8) Exception-Handling:

- What is try-except?
- Exception Handling
- Using else & finally
- Raise an exception

Tasks

9) OOPs:

1. Class and Objects

- Introduction
- Class & Objects
- Constructor
- Self parameter
- Object-methods

2. Inheritance:

- What is inheritance?
- Single inheritance
- Multiple inheritance
- Multilevel inheritance

3. Polymorphism:

- What is polymorphism?
- Function polymorphism
- Class Polymorphism
- Inheritance polymorphism

10) References Types:

1. Iterators:

- What is Iterators?
- Iterator vs Iterable
- Looping through an Iterator
- Stop Iteration

2. Generators:

- What is generator?

- Generator-function
- Generator-object

3. Closures:

- What is Closures?
- Nested functions?
- When to use closures?

4. Decorators:

- What is decorators?

11. Thread:

- Multithreading

II . Advance Python

1. GUI – (Graphical User Interface)

- What is GUI?
- Textbox
- Listbox
- Option Button
- Menu
- Canvas

2. Database Connectivity

- Mysql-
- Create table
- Insert table
- View the table

3. Networking

- Client side
- Server side

4. Standard Library

- Numpy