

“Python Syllabus”

An Introduction To Python:-

- What is Python and history of Python?
- Features of Python.
- Installation and Working with Python.
- Understanding Python variables.
- Python basic Operators.
- Python Identifiers, Keywords and Indentation.
- Understanding python blocks.
- Command line arguments.
- Getting User Input.
- Python Data Types.
- What are variables?
- Python Core objects and Functions.

Program Flow Control :-

- Conditional blocks using if, else and else if.
- For loops in python.
- For loop using ranges, string, list and dictionaries.
- Use of while loops in python.
- Loop manipulation using pass, continue, break and else.
- Programming using Python conditional and loops block.

List, Ranges, Dictionaries, Tuples and Sets in Python:-

- Introduction.
- Lists in Python
- Understanding Iterators
- Generators ,Comprehensions and Lambda Expressions
- Generators and Yield
- Next and Ranges
- Understanding and using Ranges
- Python Dictionaries
- Dictionary manipulation.
- Ordered Sets with tuples
- Sets
- Python Sets Examples

File Input and Output in Python:-

- Reading and writing text files.
- Reading config files in python.
- Writing log files in python.
- Understanding read functions, read (), readline (), readlines (), write () and writelines ().
- Writing Binary Files Manually.
- Using Pickle to Write Binary Files.
- Manipulating file pointer using seek.

Object Oriented Programming in Python:-

- OOPs Concepts.
- Concept of class, object and instances.
- Constructor, class attributes and destructors.
- Accessing attributes, Built-In Class Attributes.
- Inheritance and Polymorphism (overlapping and overloading operators).
- Data Hiding.

Exception Handling in Python:-

- Exceptions Handling Introduction.
- Avoiding code break using exception handling.
- Handling various exceptions using try....except...else.
- Try-finally clause.
- Argument of an Exception and create self-exception class.
- Raising an exceptions, User-Defined Exceptions.

Testing and Debugging Python Programs:-

- Debug Python programs using pdb debugger.
- Testing with Python using UnitTest.
- Assert for debugging.
- Iterable and generator in Python.
- Yielding from the generators.

Database Handling in Python Programs:-

- SQL Database connection using python.
- Install the MySQL dB and other Packages
- DML and DDL Operations with Databases.
- Performing Transactions.
- Handling Database Errors.
- Disconnecting Database.
- Web Scraping.

Multithreading in Python Programs:-

- What is multithreading?
- Starting a New Thread.
- Forking threads.
- The Threading Module.
- Synchronizing Threads.

Django Framework:-

- Basic of Django Framework & its uses.
- Installation and setting up Django.
- Pipenv for virtual environments.
- Syntax and URL.
- Class-based views.
- User authentication.
- Custom user models.
- Testing.
- Deploying Django Framework.

Flask Framework & TkInter GUI Framework:-

- Overview of Flask Web App with python.
- Installation of Flask and Demo Application.
- Overview of TkInter Framework
- Tkinter Widgets
