

Python Syllabus

1. INTRODUCTION (Hour 1)

- ☐ Overview of Python
- ☐ Why & What is Python?
- ☐ Python Interpreter & Editor tools usage & pip usage
- ☐ Work Flow of Python

2. BASIC SYNTAX & VARIABLES - (Hour 2- 4)

- ☐ Basic Syntax
- ☐ Variable types / Literals
- ☐ Keywords
- ☐ Operators

3. CONDITIONAL & LOOPING STATEMENTS - (Hour 5-6)

- ☐ IF, Nested If & Ternary conditions
- ☐ For loop
- ☐ While loop
- ☐ break, continue and pass

4. DATA TYPES/STRUCTURES - (Hour 7-10)

- ☐ Arrays
- ☐ Numbers
- ☐ Strings
- ☐ List
- ☐ Tuple
- ☐ Dictionary
- ☐ Set

5. EXCEPTION HANDLING - (Hour 11)

- ☐ Try/ Except/ Finally/ Else
- ☐ Raise & Custom Exceptions

6. FUNCTIONAL PROGRAMMING - (Hour 12 - 14)

- ☐ Introduction to using functions
- ☐ Writing functions
- ☐ More on functions
 - ☐ Global variables & Local Variables
 - ☐ Arguments types
 - ☐ Documenting functions and modules
- ☐ Functions based Decorators

7. FILE HANDLING - (Hour 15)

- ☐ Introduction to file handling
- ☐ Opening and reading a file
- ☐ Opening and writing text to a text file , CSV, JSON
- ☐ Appending to a text file
- ☐ The “with” statement

8. MAGICAL FUNCTIONS/ LIBRARIES: - (Hour 16 - 17)

- ☐ About Generators, Comphrensions
- ☐ Lambda, Filter, Map, Reduce & Other Built-ins
- ☐ Collections, Itertools, Functools

9. OBJECT ORIENTED (OOPS) - (Hour 18 -23)

- ☐ About OOP
- ☐ Class & Objects
- ☐ Understanding self
- ☐ Inheritance & Types
- ☐ Abstraction
- ☐ Polymorphism
 - ☐ Overloading
 - ☐ Overriding
- ☐ Encapsulation & Access Specifiers
- ☐ Solid Principles

10. PYTHON REGULAR EXPRESSIONS - (Hour 24-25)

- ☐ What is Regular Expressions
- ☐ Regex Expressions/ Symbols
- ☐ re.match(), re.search(), re.findall(), re.split(), re.sub()
- ☐ Passing in Modifier Flags

11. THREADS, PROCESS, ASYNCRONOUS - (Hour 26-30)

- ☐ Understanding Concurrency & Parallelism
- ☐ Threads vs Processes
- ☐ Thread
 - ☐ Synchronization
 - ☐ Communication
 - ☐ Thread Pool
- ☐ Process
 - ☐ Synchronization
 - ☐ Communication
 - ☐ Process Pool
- ☐ Asynchronous Programming (Asyncio)
 - ☐ Introduction to Asyncio
 - ☐ Coroutines and await
 - ☐ Task Management in Asyncio
 - ☐ Async I/O Operations

12 Create & Deploy Simple Django Project - (Hour 31-40)

- ☐ Project Setup
 - ☐ Explain Poetry (VENV, build)
 - ☐ Project Creation with Django
 - ☐ Explain Django Attributes & Terminologies
- ☐ Create Login & Sign-Up Registration
 - ☐ Create Views
 - ☐ Create Models(ORM)
 - ☐ Complete Full Functionality
- ☐ Create Unittest cases
- ☐ Create CI/CD Pipeline using GitHub Workflow
- ☐ Build and Deploy using GitHub Workflow.

13. Additional Bonus - (Hour 41-43)

- ☐ Extra Q&A Sessions
- ☐ Career Guidance
- ☐ Full Stack Roadmap
- ☐ Explore Other Python Libraries (Datetime, Logging, Requests, Click)