NS3EDU – Python Programming Curriculum Industry-Oriented | Job-Focused | Hands-On Training

Program Overview

TheNS3EDU Python Programming Program is designedto build strong Python fundamentals to advanced application development and automation skills. This curriculum focuses on logic building, data handling, scripting, backend basics, real-world projects, and interview preparation, making learners industry-ready Python developers.

LEVEL 1: Python Fundamentals (Beginner Level)

Part 1: Introduction to Python

- Whatis Python

- Features & Advantages of Python

- Python Applications

- Python Installation & Setup

- Python IDEs (VS Code, PyCharm)

- Python Syntax & Indentation

Part 2: Python Basics

- Variables&DataTypes

- Type Casting

- Operators

- Input & Output

- Comments & Keywords

Part 3: Control Flow

- Conditional Statements (if, else, elif)

- Loops (for, while)

- Break, Continue, Pass

- Nested Loops

Part 4: Functions & Modules

- Functions

- Arguments & Return Values

- Lambda Functions

- Built-in Functions

- Modules & Packages

Part 5: Data Structures

- Lists

- Tuples

- Sets

- Dictionaries

- Data Structure Operations

LEVEL 2: Core Python Advanced (Intermediate Level)

Part 6: Strings & File Handling

- String Methods

- String Formatting

- File Handling (Read / Write / Append)

- Working with CSV & Text Files

Part 7: Object-Oriented Programming (OOP)

- Class & Object

- Constructors

- Inheritance

- Polymorphism

- Abstraction

- Encapsulation

Part 8: Exception Handling

- Types of Errors

- Try-Except Block

- Else & Finally

- Custom Exceptions

Part 9: Modules & Libraries

- Python Standard Library

- Math, Random, Datetime

- OS & Sys Modules

- Virtual Environment

Part 10: Python Automation Basics

- Automation Concepts

- File Automation

- Email Automation

- Task Scheduling Basics

LEVEL 3: Advanced Python & Application Development (Professional Level)

Part 11: Database Connectivity

- Introduction to Databases

- Python with MySQL / SQLite

- CRUD Operations

- Database Project

Part 12: Web Development with Python

- Introduction to Web Development

- Flask Framework Basics

- Routing & Templates

- Forms & Sessions

- REST API Basics

Part 13: Python for Data Handling

- NumPy Basics

- Pandas Basics

- Data Cleaning & Processing

- Data Visualization (Matplotlib Intro)

Part 14: Python Scripting & Real-World Use

- Web ScrapingBasics

- API Integration

- Automation Scripts

- Mini Projects

Part 15: Real-World Python Projects

- Console-BasedPythonApplication

- Automation Project

- Database-Driven Application

- Web App Mini Project

- Industry-Level Case Study

Part 16: Career & Interview Preparation

- Python Developer Roles

- Python Interview Questions

- Coding Practice & Logic Building

- Resume & GitHub Profile Setup

- Mock Interviews

Tools & Technologies Covered

- Python(3.x)

- VS Code / PyCharm

- MySQL / SQLite

- Flask

- Git & GitHub

- Virtual Environment

Outcome

Learners become job-ready Python Developers, capable of writing clean code, automating tasks, building applications, and solving real-world problems using Python.