**🎯 Objective**

Equip students with foundational and practical Python programming skills for data handling, scripting, automation, and problem-solving.

**🗓️ Training Duration**

* **Total Duration**: 15-25 Hours
* **Mode**: In-person
* **Tools Required**: Python (direct install), VS Code.

**📚 Module Breakdown**

**🧩 Module 1: Introduction to Python**

* Features and applications
* Installing Python and IDEs
* Writing and executing Python scripts
* Python syntax and indentation

**🔢 Module 2: Variables, Data Types & Operators**

* Variables and naming conventions
* Data types: int, float, str, bool
* Type casting and checking types
* Arithmetic, logical, comparison, assignment, and bitwise operators
* Input/Output operations

**🔁 Module 3: Control Flow**

* if, elif, else statements
* while and for loops
* break, continue, pass
* List comprehensions

**📦 Module 4: Data Structures**

* Lists
* Tuples
* Sets
* Dictionaries
* Basic operations: indexing, slicing, iteration, methods

**🧰 Module 5: Functions and Modules**

* Defining and calling functions
* Arguments and return values
* \*args, \*\*kwargs
* Lambda functions
* Modules and import statements
* Built-in vs user-defined modules

**📁 Module 6: File Handling**

* Reading and writing text files
* Working with CSV and JSON
* Context manager (with statement)

**❗ Module 7: Error Handling**

* Types of errors
* try, except, finally
* raise and custom exceptions

**🔧 Module 8: Object-Oriented Programming (OOP)**

* Classes and objects
* \_\_init\_\_() method
* Class vs instance variables
* Inheritance and polymorphism
* Encapsulation