

**LORETO COLLEGE, KOLKATA**



**COMPUTER DEPARTMENT**

**OFFERS**

**30 HOURS VALUE ADDED PROGRAMME**

**ON**

**Intermediate Python**



**COURSE FEE:**

**Rs. 1000**

**Last date of  
registration:**

**12 August, 2025**

**CLASSES FOR SEMESTER I STUDENTS ONLY,  
EVERY SATURDAY AT 10:00 A.M., STARTING  
FROM 16 AUGUST, 2025**

FOR ANY FURTHER QUERIES CONTACT

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**REGISTRATION LINK:**

**<https://www.loretocollege.in/VAP/>**

## Objective:

To equip learners with intermediate-level Python skills including data structures, file handling, modules, error handling, and an introduction to real-world applications using Python.

### Module 1: Recap and Advanced Flow Control

- Recap of variables, data types, and basic operators
- Advanced if-else, nested loops, while-else/for-else
- Practice assignments using pattern printing and conditional logic

### Module 2: Functions and Recursion

- Function creation, return values, arguments (default, keyword, variable-length)
- Recursion basics and examples
- Hands-on: Fibonacci series, factorial, calculator using functions

### Module 3: Working with Lists, Tuples, and Sets

- List operations, slicing, nested lists
- Tuples: immutability and applications
- Sets and set operations
- Hands-on: Mini quiz system, inventory list manager

### Module 4: Dictionaries and Comprehensions

- Creating, updating, and looping through dictionaries
- Dictionary methods
- Dictionary and list comprehensions
- Hands-on: Student record system, word counter using dictionary

### Module 5: File Handling

- Reading, writing text files

- Working with CSV files using built-in csv module
- Hands-on: Create a student marks database using CSV files

## Module 6: Error Handling and Debugging

- try, except, finally, raise
- Common exceptions and debugging tips
- Hands-on: Build a robust user input form that handles invalid entries

## Module 7: Modules and Packages

- Importing built-in modules (random, math, datetime)
- Creating and importing custom modules
- Hands-on: Build a random password generator and use custom utilities

## Module 8: Object-Oriented Programming Basics

- Introduction to classes and objects
- `__init__` method, class attributes, methods
- Hands-on: Bank account class with deposit/withdraw functionality

## Module 9: Introduction to Data Handling with Pandas

### (Optional Advanced)

- DataFrame creation, reading CSV
- Basic data analysis: head, tail, describe, info
- Hands-on: Analysing small datasets like marksheets or sales

## Module 10: Mini Project

- Choose from:
  - Student Management System
  - Budget Tracker
  - Quiz Game
  - Simple Inventory App

Presentation and demo in class