



# Python Full Course Syllabus (Basic to Advanced)

## 1. Introduction to Python

What is Python, Features, Installation, Variables, Data Types, Input/Output, Comments

## 2. Operators & Expressions

Arithmetic, Relational, Logical, Assignment, Bitwise, Precedence

## 3. Control Statements

if-else, loops (for, while), break, continue, pass

## 4. Data Structures

Strings, Lists, Tuples, Sets, Dictionary, Comprehensions

## 5. Functions

Defining functions, arguments, return, lambda, recursion

## 6. File Handling

File modes, read/write, text and CSV files

## 7. Exception Handling

try, except, finally, custom exceptions

## 8. OOP

Class, Object, Constructor, Inheritance, Polymorphism, Encapsulation

## 9. Modules & Packages

Importing modules, built-in modules, custom modules

## 10. Advanced Python

Generators, Decorators, Multithreading, Virtual Environment

## 11. Database

SQLite, MySQL, CRUD operations

## 12. Data Analysis

NumPy, Pandas, Matplotlib, Seaborn

### **13. Machine Learning**

Basics, Linear Regression, Classification

### **14. Web Development**

Flask, Django, APIs

### **15. Automation**

Web scraping, Email automation, Selenium

### **16. Projects**

Calculator, To-Do App, Web App, Data Analysis Project

### **17. Interview Prep**

Coding questions, DSA basics, problem solving

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