

# ADVANCE PYTHON COURSE SYLLABUS

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#### **PYTHON PROGRAMMING SYLLABUS**

## **Applications of Python**

#### **Introduction to Python Language**

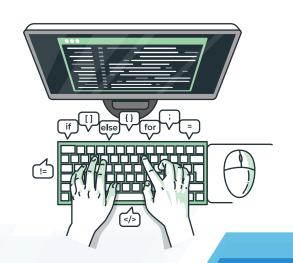
What is Python
Uses of Python Programming Language / Python Applications
Python for Software development
Python for Networking
Python for Automated Testing
Features of Python Programming Language
Implementations of Python
Python career opportunities

#### **Download & Install Python**

Download Python Interpreter
Install Python
Set environment variable
Customize Python shell
Python PyCharm or IDE
Set Python for PyCharm IDE
Configure PyCharm IDE

#### **DoPython Language Syntax**

Modes of Programming in Python
Interactive mode programming
Script mode programming
Creating Python program file
Python Identifiers
Python keywords
Lines and Indentation
Spilt Python statements
Join Python Statements



Writing code blocks Comments in Python Quotation in Python

#### **Python Keywords and Identifiers**

Python keywords or reserved words

Python keywords define the syntax and structure of the Python language

Python keywords are case sensitive

Python literals (True, False, Null)

**Python Identifiers** 

Class names

Variable names

**Function names** 

Method names

Identifier naming rules

#### **Python Comments**

Purpose/use of comments in Computer Programming

Comments for Understanding Python code

**Python Comment Syntax** 

Python Single line comment

Multiline comment in Python

Writing Python comments

#### **Python Variables**

What is Variable?

**Declaration of Variables** 

Assign Values to Variables

Initialization

What is Variable?

**Declaration of Variables** 

Assign Values to Variables

Initialization

#### **Python Data Types**

What is Data Type?
Implicit Declaration of Data Types
Python Numbers (Integers, floating-point numbers, and complex numbers)
Python Strings

Python Strings
Python boolean data type

#### **Python Operators**

Python Arithmetic
Comparison/Relational Operators
Increment Operators
Logical operators
Python Identity Operators
Python Operators Precedence

## Python Control Flow - Looping

Python Control Flow Statements & Knowledge To Students
Python Loop Statements
Python while loop
Python for loop

Python range ()

Python Nested Loop Structures
Inserting conditions in Loops and vice versa

#### **Python Numbers**

Python Number data types are for storing numeric values
Python supports integers
Floats
Complex numbers

#### **Python Strings**

**Alphabets** 

**Numbers** 

**Special Characters** 

**Operations on Strings** 

Finding String length

**Concatenating Strings** 

Print a String multiple times

Check whether the String has all numeric characters?

Check whether the String has all alphabetic characters?

#### **Python Lists**

**Python Data Structures** 

**Create Python Lists** 

**Update Python Lists** 

Delete Elements from Python Lists

Built-in Functions & Built-in Methods for Python Lists

#### **Python Tuples**

Differents between Tuples and lists

#### **Python Sets**

What is Python Sets?

#### **Python Dictionaries**

What is Python Dictionaries?

#### **Python File Handling**

How to Handling files using python

#### **Python Exceptions Handling**

How to handle the Exceptions

#### PYTHON OOPS CONCEPTS

#### **Python Classes and Objects**

How to create a classes and objects

#### **Python Constructors**

Constructors in Python
Parameterized Constructor
Non-parameterized Constructor
Constructor definition

#### **Python Inheritance**

Inheritance object-oriented programming
Types Inheritance in Python
Single Inheritance
Multi-Level Inheritance
Multiple Inheritance
Hierarchical Inheritance
Hybrid Inheritance
Experts Knowledge To Students

#### **Python Polymorphism**

What is Polymorphism?
Types of Polymorphism in Python
Compile Time Polymorphism (Method Over Loading)
Run Time Polymorphism (Method Overriding)
Polymorphism with class methods
Polymorphism with Inheritance

#### **Python Abstraction**

What is Abstraction?
Hiding and essential features of the object
Abstraction in Python is achieved by using abstract classes and interfaces

#### **Python Encapsulation**

Idea of wrapping data



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