



# PYTHON



Programming & development

## Course Curriculum

Basic + Intermediate +Advanced – 60 Hours

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## Python Basics

- Introduction to Python
- Get Started – Hello World program
- IDLE for Compiling & Running program
- Basic Data Types and Assignments
- Identifiers and Indentation
- Data Operations
- Sequence Types, Tuples, Lists
- Operators and Expressions
- Dictionary and Sets
- Control Structure
- Functions
- Variable Scope – Global, local and Non Local
- Logging and Debugging
- Modules and Packages
- Python execution environment & tools

## Python Intermediate

- Lambda Functions
  - Comprehensions - List, set and dictionary
  - Extending Built-in Types
  - Custom Collection classes
  - Iterators
  - Decorators
  - Generators
  - Streams
  - Context Manager
  - Functional Tools
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## Python Advanced

- Files Handling and Globbing
  - Exception Handling
  - Date, Time and Calendar API's
  - Command Line Frameworks
  - Regular Expressions and Parsing
  - OOPS Concepts
  - Classes and objects
  - Instance and Instantiation
  - User Defined Classes
  - Member variables and Methods
  - constructors and Destructors
  - Super class
  - Default Attributes and Methods
  - Inheritance and Override methods
  - Polymorphism
  - Function and Operator Overloading
  - Abstract Classes
  - Multiple Inheritance
  - Pseudo Private Attributes and Functions
  - New `__getattribute__`
  - Encapsulation and Intercepting Attribute Access
  - Class and Static Method
  - Properties and Descriptors
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- Coding Style & Guidelines
  - Unit Testing
  - Documentation and Best Practices
  - Distributing Applications
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- Assignment and Test
  - Open Discussion
  - Project

