Python Course

Python Introduction:

- History of Python
- Installation
- Advantages of Python
- Compiled vs Interpreted

Basics:

- Create your first python program
- Running Python (Interactive mode, Script Mode)
- Shebang line
- Python File extensions
- Comments (single line, Multi line)
- Statements, Tokens and White spaces
- Quotes (Single, Double and Triple quotes)
- Escaping characters
- Read from Standard Input
- Write to Standard Output

Data Types and Variables:

- Data types
    Numbers and Strings
    Lists and Tuples
    Dictionary
- Variable declaration and assignment
- Access, Store, Change and Delete values
- String Formatting
- Slicing and Special variables
- Data type conversion

Data Type Functions:

- Numeric and String Functions
- Lists Functions
- Tuple Functions
- Dictionary Functions
- Empty / Remove variables

Operators and Control Flow:

- Arithmetic operators
- Assignment and Shorthand operators
- Comparison and Logical operators
- Membership and Identity operators
- Concatenation and Repetition operators

Conditional and Looping Statements:

- If – elif - else statements
- for loop
- While loop
- Nested and Infinite loops
- Loop Control statements

Sets and Looping Techniques:

- Sets declaration and Functions
- Looping Techniques
- List Comprehensions

Functions:

- Pre-defined and Built-in functions
- User Defined functions
- Defining and Calling functions
- Function with default and keyword arguments
- Function with variable length arguments
- Return values
- Global and Local variables
- Lambda functions

Files and Directories:

- Creating and Opening a file
- Reading contents from a file
- Writing contents into a file
- Renaming and Deleting a file
- Create, Remove and Change directory

Errors and Exception Handling:

- Errors in python (Syntax, Runtime, Logical)
- Exception Handling
- Try, Except and Finally
- Built-in errors
- Raise exceptions

Modules:

- Creating a module
- Importing modules and functions
- Finding a module
- Namespaces and Special variables
- Generation of python compiled code

Packages:

- Creating a package
- Importing a package
- Python Packages Index
- Third party module Installation

Python Standard Library:
- System module
- OS module
- Math module
- Date, Time and Calendar module
- Getting hostname, login user and IP address
- Sleep and Exit
- Signal handling & Alarms

Object Oriented Programming:

- Features of OOPS
- Creating Classes
- Accessing Class Members (Objects)
- Class Attributes
- Constructor and Destructor
- Inheritance
- Overloading methods
- Overriding methods

Regular Expressions:

- Pattern Matching
- Substitution Operator
- Regex Modifiers
- Special Characters

Debugging and Misc Functions:

- Python debugger
- Executing system commands
- Command line arguments