

Course Content

Unit – I	Introduction to Python
	History of Python, Features, Installing Python, Using Python as a calculator.
Unit – II	Python Data types and Basic operators
	Basic Data types: Numbers, Strings (Inbuilt functions for String, The index[] operator, Traversing String, Immutable strings, String Operators, String operations), Statements & Comments, Python Operators
Unit-III	Python Flow Control Statements
	Python if...else, Python for Loop, while Loop, break and continue, Pass Statement.
Unit-IV	Python Functions & Modules
	Python Function, Function Argument, Python Recursion, Anonymous Function, Python Modules, Python Package, Python Directory.
Unit-V	Working with Data Structures
	Lists (Creating Lists, Slicing, Inbuilt functions for Lists, Comprehensions, methods, List and Strings, Splitting, Passing List to a Function, Returning List from a function), Creating Tuples , Sets (Creating Sets , Set Operations), Need of Dictionaries , Creating Dictionaries, Formatting, Deleting Items, Traversing, Nested Dictionaries, Simple program on Dictionaries.
Unit-VI	OOP: Class, Objects and Inheritance
	Introduction, Defining a Class, Adding attributes and methods to a class, Constructor and Destructor, Creating Objects, Method Overloading in Python, Operator Overloading, Inheritance, Types of Inheritance: Single, Multiple, Multilevel, Hybrid, super() method, Method Overriding, Abstract Method and Abstract Class, Interfaces in Python, Abstract Classes vs. Interfaces.
Unit-VII	Regular Expressions, Multithreading and Exception Handling
	Regular Expressions – REs and Python, Plotting using PyLab, Networking and Multithreaded Programming – Sockets, Threads and Processes, Chat Application, Errors in a Python Program (Compile-Time Errors, Runtime Errors, Logical Errors),Exceptions, Exception Handling, Types of Exceptions, The Except Block, The assert Statement, User Defined Exceptions.
Unit-VIII	GUI in Python and Event Handling
	Introduction to Tkinter, Commonly used Widgets: Button, Check button, Entry, Label, Listbox, Radio button, Scrollbar, Container Widgets, Menus, Text Widget, Event object, Binding Callbacks to Events, Keyboard events, Mouse events.
Unit-IX	File Handling
	Introduction, Text Input and Output: Opening a file, Writing text to a file, Reading text from a file, Appending data; Seek() function, Binary files: Reading Binary files, Accessing and Manipulating files and Directories on a Disk