**Python Course Content**

**Core Python**

**Introduction to Script**

* What is Script, program?
* Types of Scripts
* Difference between Script and Programming Languages
* Features and Limitation of Scripting
* Types of programming Language Paradigms

**Introduction to Python**

* What is Python?
* Why Python?
* Who Uses Python?
* Characteristics of Python
* History of Python
* What is PSF?
* Python Versions
* How to Download and Install Python
* Install Python with Diff IDEs
* Features and Limitations of Python
* Python Applications
* Creating Your First Python Program
* Printing to the Screen
* Reading Keyboard Input
* Using Command Prompt and GUI or IDE
* Python Distributions

**Different Modes in PYTHON**

* Execute the Script
* Interactive and Script Mode
* Python File Extensions
* SETTING PATH IN Windows
* Clear screen inside python
* Learn Python Main Function
* Python Comments
* Quit the Python Shell
* Shell as a Simple Calculator
* Order of operations
* Multiline Statements
* Quotations in Python
* Python Path Testing
* Joining two lines
* Python Implementation Alternatives
* Sub Packages in Python
* Uses of Python in Data Science, IoT
* Working with Python in Unix/Linux/Windows/Mac/Android..!!

**PYTHON NEW IDEs**

* PyCharm IDE
* How to Work on PyCharm
* PyCharm Components
* Debugging process in PyCharm
* PYTHON Install Anaconda
* What is Anaconda?
* Coding Environments
* Spyder Components
* General Spyder Features
* Spyder Shortcut Keys
* Jupyter Notebook
* What is Conda? and Conda List?
* Jupyter and Kernels
* What is PIP?

**Variables in Python**

* What is Variable?
* Variables and Constants in Python
* Variable,Variable names and Value
* Mnemonic Variable Names
* Values and Types
* What Does “Type” Mean?
* Multiple Assignment
* Python different numerical types
* Standard Data Types
* Operators and Operands
* Order of Operations
* Swap variables
* Python Mathematics
* Type Conversion
* Mutable Versus Immutable Objects

**String Handling**

* What is string?
* String operations and indices
* Basic String Operations
* String Functions, Methods
* Delete a string
* String Multiplication and concatenation
* Python Keywords, Identifiers and Literals
* String Formatting Operator
* Structuring with indentation in Python
* Built-in String Methods
* Define Data Structure?
* Data Structures in PYTHO

**Python Operators and Operands**

* Arithmetic, Relational Operators and Comparison Operators
* Python Assignment Operators
* Short hand Assignment Operators
* Logical Operators or Bitwise Operators
* Membership Operators
* Identity Operators
* Operator precedence
* Evaluating Expressions

**Python Conditional Statements**

* How to use “if condition” in conditional structures
* if statement (One-Way Decisions)
* if .. else statement (Two-way Decisions)
* How to use “else condition”
* if .. elif .. else statement (Multi-way)
* When “else condition” does not work
* How to use “elif” condition
* How to execute conditional statement with minimal code
* Nested IF Statement

**Python LOOPS**

* How to use “While Loop” and  “For Loop”
* How to use For Loop for set of other things besides numbers
* Break statements, Continue statement, Enumerate function for For Loop
* Practical Example
* How to use for loop to repeat the same statement over and again
* Break, continue statements

**Learning Python Strings**

* Accessing Values in Strings
* Various String Operators
* Some more examples
* Python String replace() Method
* Changing upper and lower case strings
* Using “join” function for the string
* Reversing String
* Split Strings

**Sequence or Collections in PYTHON**

* Strings
* Unicode Strings
* Lists
* Tuples
* buffers
* xrange

**Python Lists**

* Lists are mutable
* Getting to Lists
* List indices
* Traversing a list
* List operations, slices and methods
* Map, filter and reduce
* Deleting elements
* Lists and strings

**Python TUPLE**

* Advantages of Tuple over List
* Packing and Unpacking
* Comparing tuples
* Creating nested tuple
* Using tuples as keys in dictionaries
* Deleting Tuples
* Slicing of Tuple
* Tuple Membership Test
* Built-in functions with Tuple
* Dotted Charts

**Python Sets**

* How to create a set?
* Iteration Over Sets
* Python Set Methods
* Python Set Operations
* Union of sets
* Built-in Functions with Set
* Python Frozenset

**Python Dictionary**

* How to create a dictionary?
* PYTHON HASHING?
* Python Dictionary Methods
* Copying dictionary
* Updating Dictionary
* Delete Keys from the dictionary
* Dictionary items() Method
* Sorting the Dictionary
* Python Dictionary in-built Functions
* Dictionary len() Method
* Variable Types
* Python List cmp() Method
* Dictionary Str(dict)

**Python Functions**

* What is a function?
* How to define and call a function in Python
* Types of Functions
* Significance of Indentation (Space) in Python
* How Function Return Value?
* Types of Arguments in Functions
* Default Arguments and Non-Default Arguments
* Keyword Argument and Non-keyword Arguments
* Arbitrary Arguments
* Rules to define a function in Python
* Various Forms of Function Arguments
* Scope and Lifetime of variables
* Nested Functions
* Call By Value, Call by Reference
* Anonymous Functions/Lambda functions
* Passing functions to function
* map(), filter(), reduce() functions
* What is a Docstring?