****

## Course: PYTN103

## Fundamental of Python Programming

## (Three days; Instructor-Led)

**ABOUT THIS COURSE**

This course is aimed at complete beginners who have never programmed before, as well as existing programmers who want to increase their career options by learning Python. The fact is, Python is one of the most popular programming languages in the world. It is also the number one language choice for machine learning, data science and artificial intelligence. To get those high paying jobs you need an expert knowleddge of Python, and that’s what you will get from this course.

**WHAT YOU WILL LEARN**

* Have a fundamental understanding of the Python programming language
* Acquire the pre-requisite Python skills to move into specific branches, such as Machine Learning, Data Science, etc.
* Understand how to create your own Python programs
* Have the skills and understanding of Python to confidently apply to your projects

**COURSE CONTENTS**

***Module 1 : Getting Started***

* Install Python for Windows
* Our First Python Program
* Printing in Python
* Strings in Python
* The Escape Character
* Variables and Types
* Numeric Data Types
* Numeric Operators
* Expressions
* Operator Precedence
* String Data Types
* Negative Indexing in Strings
* Slicing
* String Operators
* String Formatting

***Module 2 - Program Flow Control***

* Introduction to Blocks and Statements
* If, elif, and else
* Conditional Operators
* Chained Comparison
* Boolean Expression
* In and not in
* For Loops
* Nested For Loops
* Continue and Break
* Initialising Variables and None
* While Loops

***Module 3 – List and Tuples***

* Introduction to Sequence Types
* Lists
* Immutable/Mutable Objects
* Binding Multiple Names to a List
* Sequence Operations
* Appending to a List
* Iterating Over a List
* The Enumerate Function
* Removing Items from a List
* Sorting Lists
* Built-In Functions
* Case-Insensitive Sorting
* Creating Lists
* Deleting Items from a List
* Join and Split Methods
* Tuples
* Nested Indexing
* Constants in Python

***Module 4 – Introduction to Functions***

* Defining a Function
* Parameters and Arguments
* Functions Calling Functions
* Returning Values
* Handling Invalid Arguments
* Default Parameter Values
* Docstrings

***Module 5 – Object Oriented***

* OOP and Classes
* Instances, Constructors, Self, and More
* Class Attributes
* Methods
* Non Public and Mangling
* DocStrings and Raw Literals
* Properties
* Getters and Setters
* Inheritance
* Subclasses and Overloading
* Calling Super Methods
* Overriding Methods
* Polymorphism
* Composition

***Module 6 – Using Databases***

* Introduction to SQLite
* Querying Data
* Order by and Join
* Wildcards and Views
* Connection, Cursors, and Transactions
* Placeholders and Parameter Substitution
* Exceptions
* Rolling Back Transactions