Python Course Content (Day wise Plan)

1) Introduction to Python

❑ What is Python

❑ Why should I learn Python

❑ Installing Python

❑ How to execute Python Programs

❑ Anaconda Installation & Setup

❑ Jupyter Lab\Notebook Overview (Anaconda Distribution)

2) Variables and Data types

❑ Python Variables

❑ Python Numbers

❑ Python Strings

❑ Python Lists

❑ Python Tuples

❑ Python Dictionaries

❑ Python Sets

❑ Python Arrays

❑ Python Operators

3) Conditional Statements and Loops in Python

❑ Python If…Else, If Elif else Loop

❑ Python While else Loops

❑ Python For else Loops

❑ Global vs Local variable in Python

4) **Control Statements in Python**

❑ Return Statement

❑ Continue Statement

❑ Break statement

❑ Pass statement

5) **Functions**

❑ Functions Concept in Python

❑ creating a function

❑ calling a python function

❑ Arguments in function –Formal and Actual Arguments

❑ Types of Actual Arguments – Positional, Keyword, Default, Variable length, Keyword variable length

❑ Built-in functions – Filter, Map, Reduce

❑ Function Recursion

❑ Decorators

❑ Generators in Python

❑ Iterators in Python

❑ Search algorithms in Python – Binary\Selection\Bubble

6) **Modules and Packages**

❑ Importing Modules

❑ Creating Module

❑ Use a Module

❑ Renaming Modules

❑ Built-in Modules

❑ Special Variable __name__

❑ Multithreading in Python

7) **Classes and Objects**

❏ Understanding Class and Object - Conceptual

❏ __init__ - Understanding role of constructor

❏ Types of variables and methods in Class

❏ Inner Class

❏ Class Inheritance – Single level, Multi-level and Multiple

❏ Abstraction

❏ Polymorphism – Duck Typing, Method Overloading, Method Overriding, Operator Overloading

❏ Encapsulation

8) **File and Exception Handling**

❏ File handling\Read files

❏ Write\Create files

❏ Delete files

❏ Try…except…finally statement

9) **Numpy Arrays**

❏ Create multi-dimensional arrays

❏ Numpy Data Types

❏ Array attributes

❏ Indexing and Slicing

❏ Manipulate array shapes

10) **Introduction to Pandas**

❑ Installing Pandas

❑ Dataframes\Series

❑ Joining Dataframes

❑ Handle missing data

❑ Concatenating\Appending Dataframes

11) Python Regular Expressions

❑ Match function

❑ Search function

❑ Match vs String function

❑ Search and Replace

❑ Extended Regular Expression

❑ Wildcards