

Programming with Python

Module	Course Topics
I	Python Introduction and Setup: Command Line Basics, Installation of Python. Text Editor (VS Code, PyCharm, Anaconda) Python basics and control structures: Python data types, Numbers, Variables, Getting input from the user, Operators, Statements (If, else, elif), Nested statements, Loops and loop, control statements (Break, continue and pass), Strings (Indexing, slicing and formatting).
II	Python Data Structures: Lists, Tuples, Sets, Dictionaries., Methods and Functions: Introduction to functions, def Keyword ,functions, Lambda expressions, Map and Filter functions.
III	Object Oriented Programming: Introduction and concepts of OOPS (Class, object, Abstraction, Encapsulation, Inheritance, Polymorphism), Attributes and Class Keyword, Class Object Attributes and Methods. Inheritance and Polymorphism: Practical implementation. Modules and Package: Installation using pip Errors and Exception Handling: Errors, Exceptions, Try and Except Statement, Catching Specific Exception, Try with else, Finally, Keyword, Raising an exception. File Handling using Python
IV	Python GUI programming: Tkinter, Adding Widgets, Adding a Button , Entry Widgets ,Text Widgets, Check buttons, etc. Database Connectivity- Introduction to database ,Installation , DB Connection , Creating DB Table , INSERT, READ, UPDATE, DELETE operations , COMMIT & ROLLBACK operation.