

| Subject Name | L | T | P | Credit |
|------------------------|---|---|---|--------|
| Introduction to Python | 3 | 1 | 4 | 6 |

Course Objectives:

- Basics of Python programming.
- Decision Making and Functions in Python.
- Object Oriented Programming using Python.
- Files Handling in Python.
- GUI Programming and Databases operations in Python.

UNIT-I

Introduction, Origin, Comparison, Comments, Operators, Variables and Assignment, Numbers, Strings, Lists and Tuples, Dictionaries, if Statement, while Loop, for Loop and the range(), String and regular expressions. Module: Importing Module, Math Module, The sys Module, Random Module, and Package.

UNIT-II

Functions: Defining a function, calling a function, Types of functions, Function Arguments, Anonymous functions, Built-in functions, Lists and Tuple: Introduction to List and Tuple, Accessing List and Tuple, Operations, working with List and Tuple, Function and Methods. Dictionaries: Working with dictionaries, properties and functions.

UNIT-III

Object oriented programming and classes in Python - creating classes, instance objects, accessing members, Data hiding (the double underscore prefix), Built-in class attributes, Garbage collection: the constructor, Overloading methods and operators, Inheritance- implementing a subclass, overriding methods, Exceptions: try Statement, Exception Propagation, Except Clause, Try, Finally Clause, User Defined Exception, The raise statement.

UNIT-IV

Creating files, Operations on files (open, close, read, write), File object attributes, file positions, Listing Files in a Directory, Testing File Types, Removing Files and Directories, Copying and Renaming Files, Splitting Path names, Creating and Moving to Directories, Traversing Directory Trees, Illustrative programs: word count, copy file.

UNIT-V

Tkinter module, widgets and basics, Component, layout options, Button, Label, Entry, Listbox, Radio button, Check button, Scrollbar, Container Widgets: Frame, Event handling, Keyboard events, Mouse events etc. Introduction to MySQL, PYMYSQL Connections, using connect, cursor, execute & close functions, reading single & multiple results of query execution, executing different types of statements, understanding exceptions in database connectivity.

Reference Books:

1. Python Essential by David M. Beazly.
2. Python Pocket by Mark Lutz.
3. Barry, Paul, Head First Python, 2nd Edition.
4. Python: The Complete Reference.

Course Outcomes:

- Describe the Numbers, Math functions, Strings, List, Tuples and Dictionaries in Python.
- Implement application using list, set operation and using python.
- Apply Object Oriented Programming using Python.
- Understand and summarize different File handling operations.
- Develop GUI based applications and database connectivity programming using python.

List of Experiments

1. Write a program to convert temperature from Fahrenheit to Celsius depending upon user choice.
2. Write a program to use dictionary and its functions in python.
3. Write a program to check whether given no is prime or not.
4. Write a program to implement list and use its methods.
5. Write a program to implement tuple and use its methods.
6. Write a program to import module and use it.
7. Write a user defined function to implement factorial of a given no.
8. Write a program to show the use of anonymous functions.
9. Write a program to calculate area of rectangle and circle using class.
10. Write a program to implement single level inheritance.
11. Write a program to overriding method.
12. Write a program to implement double underscore methods.
13. Write a program to implement Exception Handling.
14. Write a program for user defined exception.
15. Write a program to copy a file.
16. Write a program to count no. of words in a file.
17. Write a program to make Login GUI in Tkinter.
18. Write a program to make registration form GUI in Tkinter.
19. Write a program to connect with database and perform insert operation.
20. Write a program to perform select operation on database.
21. Write a program to perform delete operation on database.
22. Write a program to perform update operation on database.