Academic Council

Item No: _____

Devrukh Shikshan Prasarak Mandal's

Nya. TATYASAHEB ATHALYE ARTS, Ved. S.R. SAPRE COMMERCE & Vid. DADASAHEB PITRE SCIENCE COLLEGE, DEVRUKH [AUTONOMOUS]

Course: Certificate Course in Python Programming- II

Effect from

Academic Year 2022-23

Certificate Course
Python Programming II

Theory

Theory	**Python Programing**		**No of Credits**	**Lectures/Week**
	I	File & Exception Handling and OOP, Modules in Python	**2**	**4**
	II	GUI & Database in Python Creating the GUI Form and Adding Widgets		
Practical	Python Programming Exercises		**1**	**4**

Unit I: File & Exception Handling and OOP, Modules in Python (15L)

1. **Files:** Text Files, The File Object Attributes, Directories
2. **Exceptions:** Built-in Exceptions, Handling Exceptions, Exception with Arguments, User-defined Exceptions.
3. **Object Oriented Programming , Modules in Python**
   Classes and Objects: Overview of OOP (Object Oriented Programming), Class Definition, Creating Objects, Instances as Arguments, Instances as return values, Built-in Class Attributes, Inheritance, Method Overriding, Data Encapsulation, Data Hiding
4. **Modules:** Importing module, Creating and exploring modules, Math module, Random module, Time module

Unit II: GUI & Database in Python Creating the GUI Form and Adding Widgets (15L)

1. Widgets: Tkinter module , Label , Buttons , Checkbutton, Radiobuttons, Text box, Canvas , Entry, Frame, Text, Menu, LabelFrame, Scrolled Text Widgets , Message boxes , Spinbox . Handling Standard attributes and Properties of Widgets.
2. Layout Management: Designing GUI applications with proper Layout Management features.
3. Look and Feel Customization: Enhancing Look and Feel of GUI using different appearances of widgets.
4. Storing Data in Our MySQL Database via Our GUI: Connecting to a MySQL database from Python, Configuring the MySQL connection, Designing the Python GUI database, Using the INSERT command, Using the UPDATE command, Using the DELETE command, Storing and retrieving data from MySQL database.

Python Program:

1. Write a Python program to read an entire text file.
2. Write a Python program to append text to a file and display the text.
3. Write a Python program to read last n lines of a file.
4. Design a class that store the information of student and display the same
5. Implement the concept of inheritance using python
6. Write a program to implement exception handling.

B3: Perform minimum two experiments (one from GUI and the other from Database).

1. Try to configure the widget with various options like: bg="red", family="times", size=18

2. Try to change the widget type and configuration options to experiment with other widget types like Message, Button, Entry, Checkbutton, Radiobutton, Scale etc.

3. Design a simple database application that stores the records and retrieve the same.

4. Design a database application to search the specified record from the database.

5. Design a database application to that allows the user to add, delete and modify the records.

Reference Books

1. Official Python Web site : https://www.python.org/

2. AD : Think Python by Allen Downey , 2nd Edition

3. Paul Gries, et al., Practical Programming: An Introduction to Computer Science Using Python 3, Pragmatic Bookshelf, 2/E 2014

4. Burkhard Meier : Python GUI Programming Cookbook , Packt Publishing

5. Michael H. Goldwasser, David Letscher ,Object-oriented Programming in Python , Michael H. Goldwasser

In addition to the reference books internet web-sites & MOOC can be used wherever necessary.