

**SUBJECT CODE: Python Programming Lab**

**COURSE OBJECTIVE**

The course is designed to provide an introduction to the Python Programming language. The focus of the course is to provide students with an introduction to programming, I/O, and data structure with Python Programming language.

**Credits: 03**

**L-T-P: 4-0-0**

| Module No.    | Content   | Teaching Hours |
|---------------|---|----------------|
| I, II and III | <p><b>Programs based on the concepts of:</b></p> <ul style="list-style-type: none"> <li>• Building Python Modules</li> <li>• Obtaining user Data</li> <li>• Printing desired output</li> </ul> <p><b>Programs based on the concepts of:</b></p> <ul style="list-style-type: none"> <li>• Conditional if statements</li> <li>• Nested if statements</li> <li>• Using else if and elif</li> </ul> <p><b>Programs based on the concepts of Iteration using different kinds of loops</b></p> <p><b>Usage of Data Structures</b></p> <ul style="list-style-type: none"> <li>• Strings</li> <li>• Lists</li> <li>• Tuples</li> <li>• Sets</li> <li>• Dictionary</li> </ul> <p><b>Program based on the concepts of User-defined modules and Standard Library ( random, numpy, sys, math module, string module, list module etc.).</b></p> <p>Program based on Input Output.</p> <p>Program based on exception Handling.</p> <p>Program based on Simple Data analysis.</p> <p>Program based on Regular Expression.</p> <p>Program based on read/write operation with local file</p> | 20 hours       |

**Text Books:**

- Paul Barry: "Head First Python "O'Reilly Media, Inc.".
- Python Data Science Handbook: Essential Tools for Working with Data

**Reference Books:**

- Bret Slatkin: "Effective Python: 59 Specific ways to write better Python", Addison Wesley, 2015.

**Outcome:**

After completion of course, the student will be able to:

- Understand to solve problems with smaller Lines of Code using Python as compared to other programming languages
- Use Object-Oriented Programming concepts while programming in Python
- Gain knowledge of Python visualization libraries
- Create a plot of retrieved data
- Work with Python using GUI