**20XC28 PYTHON PROGRAMMING LABORATORY 0 0 4 2**

**INTRODUCTION**: Development Tools (IDE) – Python shell - Python Basics – Data types - Control flow.

**CORE PYTHON LANGUAGE**: Lists - Tuples - Dictionaries - Strings – Regular expressions - Functions - File input/output – Exception handling.

**OBJECT-ORIENTED DESIGN**: Inheritance – Polymorphism.

**PACKAGING AND DISTRIBUTION**: Modules – Packages – Python standard libraries - pip.

**STANDARD PACKAGES**: NumPy – Matplotlib – SciPy – SymPy – Pandas.

**LAB PROGRAMS:**

1. Exercises to test basic coding skills in Python using data types, control statements and iteration.

2. Programs to implement Python data structures like lists, tuples, dictionaries, and sets.

3. Programs covering general programming concepts such as functions, strings, regular expressions, reading / writing files and exceptions.

4. Standalone programs to implement object oriented concepts.

5. Packaging their programs into reusable libraries.

6. Write programs to use libraries for numerical programming and data visualization.

**Total P:60**

**TEXTBOOKS:**

1.Mark Lutz, “Learning Python”, O’Reilly Media, 2013.

2. Tony Gaddis, “Starting out with Python”, Pearson, 2017.

**REFERENCES:**

1. Christian Hill, “Learning Scientific Programming with Python”, Cambridge University Press, 2016.

2. Allen Downey, ‘Python for Software Design”, Cambridge University Press, 2009.