**GE8161 PROBLEM SOLVING AND PYTHON PROGRAMMING LABORATORY L T P C**

**0 0 4 2**

**OBJECTIVES:**

To write, test, and debug simple Python programs.

To implement Python programs with conditionals and loops.

Use functions for structuring Python programs.

Represent compound data using Python lists, tuples, dictionaries.

Read and write data from/to files in Python.

**LIST OF PROGRAMS:**

1. Compute the GCD of two numbers.

2. Find the square root of a number (Newton‘s method)

3. Exponentiation (power of a number)

4. Find the maximum of a list of numbers

5. Linear search and Binary search

6. Selection sort, Insertion sort

7. Merge sort

8. First n prime numbers

9. Multiply matrices

10. Programs that take command line arguments (word count)

11. Find the most frequent words in a text read from a file

12. Simulate elliptical orbits in Pygame

13. Simulate bouncing ball using Pygame

**PLATFORM NEEDED**

Python 3 interpreter for Windows/Linux

**OUTCOMES:**

**Upon completion of the course, students will be able to:**

Write, test, and debug simple Python programs.

Implement Python programs with conditionals and loops.

Develop Python programs step-wise by defining functions and calling them.

Use Python lists, tuples, dictionaries for representing compound data.

Read and write data from/to files in Python.

**TOTAL: 60 PERIODS**