CSC 121 Python Programming

COURSE DESCRIPTION:

Prerequisites: None
Corequisites: None

This course introduces computer programming using the Python programming language. Emphasis is placed on common algorithms and programming principles utilizing the standard library distributed with Python. Upon completion, students should be able to design, code, test, and debug Python language programs.
Course Hours per Week: Class, 2. Lab, 3. Semester Hours Credit, 3.

LEARNING OUTCOMES:

Upon completing requirements for this course, the student will be able to:

1. Develop Python programs using fundamental programming concepts, including variables, data types, and input/output.
2. Develop Python programs using decision and repetition control structures.
3. Develop modular Python programs using functions.
4. Develop Python programs that organize and process data using appropriate data structures.
5. Develop Python programs using object-oriented programming techniques.

OUTLINE OF INSTRUCTION:

I. Introduction to Computers and Python Programming
II. Python Fundamentals: Variables, Data Types, Input, and Output
III. Decision and Repetition Control Structures
IV. Functions and Modular Programming
V. File Operations and Exception Handling
VI. Lists, Tuples, and String Processing
VII. Dictionaries, Sets, and Data Processing
VIII. Classes and Object-Oriented Programming
IX. Inheritance and Recursion
X. Introduction to GUI and Database Programming
XI. Software Development Practices: Debugging and Git

REQUIRED TEXTBOOK AND MATERIAL:

The textbook and other instructional material will be determined by the instructor.