Course Syllabus Part I
CIS 245 Introduction to Programming

3 credit hours

Course Description
This course provides an introduction to problem solving and computer programming using the language Python. Students will analyze problems, design and implement solutions and assess the results. Topics include fundamental programming constructs such as variables, expressions, functions, control structures and lists. Emphasis is placed on numerical and data analysis for informed decision making.

Course Prerequisites
None

Course Objectives

- Describe the fundamental concepts in computer programming.
- Design programs by using flowcharts and pseudocode.
- Install and configure Python.
- Write programs that use variables.
- Apply modular programming techniques to programming.
- Write programs that use conditional statements to solve problems.
- Write programs that use loops to solve problems.
- Apply techniques to write functions in programs.

Grading Scale

93 – 100% = A	87 – 89% = B+	77 – 79% = C+	67 – 69% = D+
90 – 92% = A-	83 – 86% = B	73 – 76% = C	63 – 66% = D
	80 – 82% = B-	70 – 72% = C-	60 – 62% = D-
			0 – 59% = F

Topic Outline

- General Programming concepts
    - Types of programming languages
    - Solving problems
    - How computers work and Binary introduction
    - Solving problems with flowcharts/pseudocode
    - Algorithms
    - Source Code Management
    - Secure Coding

- ○ Peer Reviews
- Introduction to Python
  - ○ Python 2 vs 3
  - ○ Installing Python
  - ○ Variables
  - ○ IDLE
  - ○ Other Integrated Development Environments
- Lists and Strings
- Selection Control Statements
- Loops
- Dictionaries
- Functions
- Classes
- Working with Files
- JSON and REST Webservices