EGR 111 - INTRODUCTION TO COMPUTER SCIENCE

Course Description

An introductory course in computer science with emphasis on C/C++ programing. Topics include structured programming, control structures, functions, arrays, pointers, dynamic memory allocations, searching and sorting algorithms, file I/O, and top-down analysis of problems. Basic concepts of object-oriented programming will also be introduced. Group 2 course.

Credit Hours

3

Contact Hours

4

Lecture Hours

2

Lab Hours

2

Required Prerequisites

MTH 111

Recommended Prerequisites or Skills Competencies

Placement into ENG 111

General Education Outcomes supported by this course

Critical Thinking - Direct

Course Learning Outcomes

Knowledge:

- Identify the basic syntax and semantics of the C/C++ programming language.
- Define computer science principles including top- down programming design, procedural and data abstraction, correctness and efficiency issues, data structures and algorithms, and computation theory.

Application:

- Apply problem solving strategies when designing computer programs.
- Design C/C++ programs using procedural computer programming language, supporting structured programming, lexical variable scope, and recursion with a static type system.

Integration:

- Connect the knowledge in this course to real-life situations and experiences.
- Implement self-created C/C++ programs using procedural computer programming language, supporting structured programming, lexical variable scope, and recursion with a static type system.

Human Dimension:

- Take responsibility of improving areas of algorithmic structures in programming based on gathered feedback.
- Collaborate with peers during group work.

Caring - Civic Learning:

- Recognize the impact of computer programming on social and ethical aspects related to everyday use of computers in modern society.

Learning How to Learn:

- Predict how programming concepts can be applied to programming designs not covered in class.
- Link relationships in computer programming with concepts learned in other disciplines.