RAM 155 - MICROCONTROLLER PROGRAMMING

Course Description

This course introduces students to microcontroller systems and programming using Python language. Students construct a wheeled robot and learn to program the device. Standard coding structures including statements, loops, and functions are used to control the unit. Debugging and troubleshooting skills are developed as robot capabilities are implemented. The robot is used in subsequent Engineering Technology courses. Group 2 course.

Credit Hours

3

Contact Hours

4

Lecture Hours

2

Lab Hours

2

Recommended Prerequisites or Skills Competencies

Basic keyboarding and computer skills

General Education Outcomes supported by this course

Critical Thinking - Direct

Course Learning Outcomes

Knowledge:

- Assemble components.
- Write code to capture input and control output.
- Utilize code libraries.
- Utilize data types to meet specific criteria.
- Access devices remotely.
- Control hardware with code.

Application:

- Build rover control system.
- Determine problem requirements.
- Implement coding solutions.

Integration:

- Interpret documentation.
- Use resources to solve problems.

Human Dimension:

- Recognize their ability to solve common problems using technology.

Caring - Civic Learning:

- Appreciate the creative process.

Learning How to Learn:

- Recognize various solutions to the same problem.