

Sustainable Renewable Energy COSC 2315 Final Project

Part I (80 points): Perform the following applying the critical analysis skills and programming techniques acquired in COSC2315.

Program objectives: Applying programming techniques to authentic problems, develop a system to monitor the solar panels for cleanliness, position, temperature.

Group Project

The class will be assigned to one of three teams. Each team will work on one of the deliverables. The deliverables will be merged utilizing the Agile programming methodology. Develop an automated program to monitor the solar panels and automate adjustments to the panels. Utilize the tools and equipment as necessary (automation technology, sensors, robots and drones) to achieve the program objectives including:

- adjust position,
- clean panels, and
- assist with other system requirements.

Student Deliverables

- Source Code for the program uploaded to Blackboard group project assignment
- Schematic created in logic ladder format uploaded as a PDF to group project assignment
- Group presentation (10 minutes) –Using Video, charts, graphs, VR and other tools create a group presentation about your project. Make your project accessible to an audience of diverse knowledge and skills.

Part II (20 points): Demonstrate your understanding of the fundamentals of programming and electricity by taking the online quiz. Sample questions below.

- If motor A is high and motor B is low what will be the result?
- If sensor is reading 1024 what can be determined?
- What happens if you use delay (200)?
- What is the most effective data type for monitoring temperature?
- What data type is best for division of floating point numbers?