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EET 219- Programmable Logic Controllers- Kalie Brunton- Winter 2024

* Part A: Your Plan **DIRECTIONS** 1. Choose three of your course outcomes to assess and report on this term (these will also be used in your Student Course Evaluation survey): Outcome #1

Know the basic components and their functions that are common to programmable logic controllers.

* Outcome #2

Create, monitor, and edit programs for different applications, utilizing basic instructions.

* Outcome #3

Implement proper ground isolation and signal wiring for use with PLC communications.

Have you completed an assessment for this course prior to this term?

No

If yes, are you assessing different outcomes?

No

Comments:

This is the second time I've taught this course, and I've not evaluated it.

2. To which degree(s) or certificate(s) does your course map? **Degree, Certificate, & Program Outcomes**

Associate of Applied Science: Electro-Mechanical Technology

* Method of Assessment 3. What methods will be used to assess individual student understanding of each of these outcomes? (Please be specific.) Outcome #1: Method to assess student understanding

A final exam that combines a written portion with a practical/oral portion will be given. The written portion will evaluate students' ability to interpret ladder logic and device documentation. The practical/oral portion will assess students' ability to verbally articulate what they know about PLC control systems and their components.

*** Outcome #2: Method to assess student understanding**

Weekly labs will offer students various programming challenges in which they will be asked to achieve a certain outcome. Students may use whatever programming methods they prefer, so long as the outcome is achieved.

*** Outcome #3: Method to assess student understanding**

Students will be given two full lab periods to wire up a PLC trainer board from scratch, following a given schematic. This project will serve as the foundation for the rest of the class and will include wiring up the power supply, controller, inputs, and outputs.

*** 4. How will you know if you were successful in your efforts to teach this outcome? Outcome #1:**

Exam scores will be part of the success indicator for this outcome, aiming for a C or better class average. Additionally, the clarity and comfort of students' verbal responses during the practical/oral portion of the exam will provide feedback as to their confidence in their abilities.

*** Outcome #2: How will you know if you were successful in your efforts to teach this outcome?**

A ninety percent or higher participation/completion rate of lab projects would signal success for this outcome. Another indicator I am looking for is variety in the methods used to achieve lab outcomes. A variety in student methods used to achieve programming outcomes will signal to me that students felt comfortable with the concepts and were able to be creative about implementing solutions to the lab challenges.

*** Outcome #3: How will you know if you were successful in your efforts to teach this outcome?**

This outcome is straightforward to assess – a working PLC trainer board signals success of this outcome. Students will be wiring the boards on their own, from a schematic diagram. Upon completion, the boards will be plugged into power and they will either work or they won't. If the boards do not function upon power up, students will have the opportunity to troubleshoot. Students' ability to get the boards functioning with minimal instructor guidance will signal success of this outcome.

5. Instructor Questions: Create two course specific questions to be included on the Student Course Evaluation. Question #1

Compared to before you took this course, do you feel more confident in your ability to navigate/interpret manuals and datasheets for controllers, input devices, output devices, etc.?

Question #2

Are you satisfied with the degree to which this course familiarized you with the various components that make up a PLC control system? Is there something you would have liked to receive more instruction on?

Do you require the names of students who complete the course evaluation survey? (Please note: names will be sent to instructors the Thursday before term ends)

NO

Reminder, when completing Part B, instructors will be asked the following questions: Describe anything you did to assist the institutional effort to support students in improving achievement of the specified criteria for the following Institutional Learning Outcomes (ILO): 1. ILO#1 - Communication - "Content Development" and/or "Control of Syntax and Mechanics" 2. ILO#2 - Critical Thinking/Problem Solving - "Evidence" and/or "Identify strategies" 3. ILO#4 - Cultural Awareness - "Openness" (Encouraging our students to "Initiate and develop interactions with culturally different others") 4. ILO#5 - Community and Environmental Responsibility - "Understanding Global Systems" and/or "Applying Knowledge to Contemporary Global Contexts" 5. ILO#3 - Quantitative Literacy - "Application/Analysis" and/or "Assumptions"

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