Course Outcomes Guide

Course/Program Title: ELE 101 Device Data System Architecture Date: 15 May 2017

Course/Program Team: Patricia Irwin & TCS

Expected Learning Outcomes

- Knowledge of Instrumentation and Process Control hardware and software
  • Select and implement various instrumentation devices required to accomplish a task within a control system.
  • Identify needed parameters and set to desired values within a control system
  • Select program and graphics required to implement a SCADA system
  • Commission an instrumentation system.
  • Evaluate collected data from an instrumentation system
  • Identify security risk and determine standard precautionary measures
  • Build a computer networking and SCADA security system
- Exhibit professional / occupational behavior and work habits

Assessment (How do or will students demonstrate achievement of each outcome?)

As far as I can determine, Spring 2017 was first time this class has was taught and there was only one student. Therefore, the class was taught as a tutorial. The student studied the book (recommended in the syllabus), did additional Internet research on topics not in the book, wrote a few short papers, and spent a few hours in the lab working with circuitry. I provided the student with a list of questions, that he answered as homework questions. He also, completed two basic SCADA designs, at the end of the semester. I met with the student weekly to discuss the material he was studying.

- Exercises and Assignments

Validation (What methods have you used or will you use to validate your assessment?)

The assessments will be validated by review from the following sources:

1. Facility Peer validation
2. Industry validation through the Advisory Committee.

Results (What do your assessment data show? If you have not yet assessed student achievement of your learning outcomes, when is assessment planned?)

The student did a good job and put a lot of time and effort into the class, but there is no way to qualitatively assess his performance, at this time. But, the two of us identified many ways to improve the class. See below.

Follow-up (How have you used or how will you use the data to improve student learning?)

Although the book we used was the one list in the syllabus, it left a lot to be desired. It was outdated. Chapters provided lots of descriptive information about various communications topics, but it was primarily long lists of attributes. There were no examples, no case studies, no pictures, and no end of chapter questions. I am in the process of finding a better book with more supporting material.

Also, the original course design did not include any lab work. I am in the process of finding/developing lab materials for the class.

Budget Justification (What resources are necessary to improve student learning?)

None.