Course Title: INT 102 Introduction to PLC

Course Instructor(s): Anthony Valente

Programs: Industrial Technology

Expected Learning Outcomes

- Students will be able to explain the basic concepts and components of a Programmable Logic Controller.
- Students will understand basic PLC terminology and their meanings.
- Students will learn the concepts of electrical ladder logic and its relationship to programmed PLC instruction.
- Students will understand timers, counter, and other intermediate programming concepts and functions.
- Students will demonstrate a basic programming knowledge for entry-level PLC applications.
- Students will be able to explain the basic concepts of Industrial Automation.

Assessment

Assessments will include:
2 written test and a final exam.
Classroom lab exercises and assignments.
A final assignment in circuit design.

Validation

1. Comparison of final exam results with national average skills in the electrical field of work.

2. The evaluation of student performance and ability to transfer knowledge to next level of class in the program.

3. Consult Advisory Committee participants as to performance of interns and hired students based on ability and knowledge gained.

Results

The results of the testing and final examination will show the level of retention of the classroom materials.

The results of the lab exercises and assignments will show the ability of the student to transfer textbook information to hands-on applications.

The results of the Advisory Committee input will allow us to place a rate of success in our database for ongoing improvement to the course and advise us of changes in technology and industry standards.

During the Fall semester of 2015 it was noted that the students average grade was 83%. A section was added to the course content which introduced students to the Siemens S7 1200 series PLC and HMI. The students responded well to the hands-on exercises related to the Siemens product that also reinforced the input and output characteristics of other PLC products including the Allen Bradley brand.

Follow-up

The data will be evaluated to improve teaching techniques
The data will be evaluated to help us remain up to date with technology changes.

Budget Justification

Update textbook to include changes in technology
Update lab equipment to keep pace with changes in technology

We will evaluate the feasibility of purchasing additional input and output devices to be connected to the Siemens PLCs.