Course Prefix and Number: TEED 208  Credit Hours: 4-3-3

Course Title: Programmable Logic Controllers (PLCs) and Lab

Course Prerequisite: TEED 201


Course Description: An introduction to programmable logic controllers (PLCs) covering installation, programming and maintaining PLC systems. Lab activities, using Allen-Control Logix 5000 programming software, to provide practical experience with PLCs.

Learning Outcomes:
At the end of the course, the student will:
   A. identify and explain basic components and terminology including numbering schemes and logic functions associated with PLC hardware and functionality;
   B. interpret and explain PLC timers, counters and jumps implementable via PLC’s for process automation and control; and
   C. interpret and explain the logic function of Data movement instructions within a PLC including sequencer logic used in process automation and control.

To achieve the learning outcomes, the student will or will be able to:
(The letter designations at the end of each statement refer to the learning outcome(s).)
1. identify basic parts of, and differences between, PLC’s and computers; (A)
2. list and describe the function of the hardware components used in PLC systems; (A)
3. convert form one numbering or coding system to another; (A, C)
4. describe the binary concept and function of gates; (A, C)
5. convert relay ladder diagrams to logic ladder diagrams; (A, B, C)
6. define and identify the function of a PLC memory map and the function of internal relay instruction; (A, B)
7. identify the function of electromagnetic control relay and switches commonly found in the PLC’s; (A, B, C)
8. convert fundamental relay ladder diagrams to PLC logic ladder programs; (A)
9. describe and use PLC timer instructions in programs; (A)
10. describe and use POLC counter instructions; (A)
11. analyze and interpret typical PLC counter programs; (A)
12. identify and list override and jump instructions; (A) and
13. describe the forcing capability of a PLC. (A)

Course Requirements: Complete all homework assignments, lecture tests and final exam.
Course Grading Scale:
90 – 100 = A
80 – 89 = B
70 – 79 = C
60 – 69 = D
0 – 59 = F

Attendance Policy: The college attendance policy is available at http://www.bpcc.edu/catalog/current/academicpolicies.html

Course Fees: This course is accompanied with an additional non-refundable fee for supplemental materials, laboratory supplies, software licenses, certification exams, and/or clinical fees.

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