

Bossier Parish Community College
Master Syllabus

Course Prefix and Number: TEED 208

Credit Hours: 4-3-3

Course Title: Programmable Logic Controllers (PLCs) and Lab

Course Prerequisite: TEED 201

Textbook(s): Amatrol/Sivad. Amatrol eLearning License Amatrol All and AME21 Libraries 4 Month. ISBN: Amatrol Prod# 206-WSC-IND4

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 from 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.

Nondiscrimination Statement: Bossier Parish Community College does not discriminate on the basis of race, color, national origin, gender, age, religion, qualified disability, marital status, veteran's status, or sexual orientation in admission to its programs, services, or activities, in access to them, in treatment of individuals, or in any aspect of its operations. Bossier Parish Community College does not discriminate in its hiring or employment practices.

Title VI, Section 504, and ADA Coordinator

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