

**Eastern WV Community & Technical College
Master Course Record**

Course Prefix and Number: ELM 210
Course Title: PLC Fundamentals
Recommended Transcript Title: PLC Fundamentals
Date Approved/Revised: 6/18/08; 11/18/13; 9/21/15; 11/6/17
Credit Hours: 3 Contact hours per week (Based on 15 week term): Lecture: 2 Lab: 3
Prerequisite: WTT 150: Industrial Motor Controls or permission of instructor. Corequisite: None Pre/Corequisite:
Grading Mode: Letter Grade
Catalog Description: This course introduces the student to the use, programming, and troubleshooting of Programmable Logic Controllers (PLCs) in process and industrial control systems. The PLC is examined in terms of its core components including the microprocessor, memory and input/output devices. Relay logic, ladder logic, and binary logic systems are covered together with Boolean numbering systems and algebra. Programming and networking basics are introduced.
Course Outcomes: <ol style="list-style-type: none"> 1. Demonstrate safe operation of PLC's in industrial environments 2. Explain how programmable controllers are utilized in industry 3. Explain ladder logic diagrams and functions 4. Use discrete and analog input and output devices 5. Describe how controllers have replaced relays 6. Troubleshoot a PLC circuit 7. Write basic PLC programming functions
Implementation Cycle: Fall
Role in College Curriculum: (Check all that apply) <input type="checkbox"/> General Education Core (Specify category) <input checked="" type="checkbox"/> Technical Core: Wind Energy Technology and Electromechanical Technology <input type="checkbox"/> Restricted Elective (Specify Program) <input type="checkbox"/> General Elective <input type="checkbox"/> Workforce Education <input type="checkbox"/> Other (Please specify)
Course Fee: Yes
Instructor's Qualifications: Bachelors of Science in Engineering/Technology or related discipline and/or expertise and experience in the field.
Expanded Course Description: This course introduces the student to the use, programming and troubleshooting of Programmable Logic Controllers (PLCs) in process and industrial control systems. The PLC is examined in terms of its core components including the microprocessor, memory and input/output devices. Relay logic, ladder logic and binary logic systems

Course Number & Title: ELM 210 – PLC Fundamentals

Date Prepared/Revised: 4/21/08; 11/18/13; 11/6/17

Date Course Approved by Curriculum Committee: 11/2/17

Date Course Approved by ICF: 06/18/08; 11/18/13; 09/21/15; 11/20/17

are covered together with Boolean numbering systems and algebra. Programming and networking basics are introduced. At the end of the course, students will take the Packaging Machinery Manufacturers Institute (PMMI) Programmable Logic Controllers Certification Exam. This certification exam is not included in the grade for this course.

Prepared by:

Ward Malcolm, Dean for Career & Technical Programs, 6/18/15

Eric Putze, Advanced Manufacturing/Wind Energy Faculty, 11/2/17

Approved Per LOT Minutes:

Dean, Academic and Student Services

Date