

JAMESTOWN COMMUNITY COLLEGE
State University of New York

INSTITUTIONAL COURSE SYLLABUS

Course Title: Industrial Automation/PLC

Course Abbreviation and Number: ELC 1220

Credit Hours: 3

Course Type: Lecture/Lab

Course Description: Students will investigate the principles and applications of programmable logic controllers and how they are used in manufacturing automation. PLC hardware, programming software using ladder logic, and PLC applications will be emphasized.

Eligibility MAT 1590 or Corequisite MAT 0550.

Student Learning Outcomes:

Students who demonstrate understanding can:

1. Identify each part of a PLC and explain its function
 2. Understand memory organization
 3. Write control programs using ladder logic
 4. Use timers and counters to control specific application
 5. Understand the following number systems used in PLC programs: Binary, BCD, Two's complement code, and hexadecimal
 6. Explain how a PLC is used in industrial automation implementation
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Topics Covered:

- Introduction to programmable logic controllers
 - Input devices and output actuators
 - Introduction to PLC programming
 - Programming timers
 - Programming counters
 - Arithmetic and move instructions
 - Conversion and comparison instructions
 - Program control instructions
 - Advanced PLC instructions and applications
 - Industrial networks and distributive control
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Information for Students

- Expectations of Students
 - [Civility Statement](#)
 - [Student Responsibility Statement](#)
 - [Academic Integrity Statement](#)
 - [Accessibility Services](#)
Students who require accommodations to complete the requirements and expectations of this course because of a disability must make their accommodation requests to the Accessibility Services Coordinator.
 - [Get Help: JCC & Community Resources](#)
 - [Emergency Closing Procedures](#)
 - Course grade is determined by the instructor based on a combination of factors, including but not limited to, homework, quizzes, exams, projects, and participation. Final course grade can be translated into a grade point value according to the following:

A=4.0	B+=3.5	B=3	C+=2.5	C=2	D+=1.5	D=1	F=0
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 - Veterans and active duty military personnel with special circumstances (e.g., upcoming deployments, drill requirements, VA appointments) are welcome and encouraged to communicate these to the instructor.
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Effective Date: Fall 2024