Course Title: Programmable Logic Controllers

Catalog Description:
Programmable Logic Controllers describes how PLC's work and provide practical information about installing, programming and maintaining a PLC system. Students will be given a wide range of generic programming assignments and exercises for practice with the PLC.

Prerequisites or Necessary Entry Skills/Knowledge:
ELEC 2205

FULFILLS MN TRANSFER CURRICULUM AREA(S)
☐ Goal 1: Communication: By meeting the following competencies:
☐ Goal 2: Critical Thinking: By meeting the following competencies:
☐ Goal 3: Natural Sciences: By meeting the following competencies:
☐ Goal 4: Mathematics/Logical Reasoning: By meeting the following competencies:
☐ Goal 5: History and the Social and Behavioral Sciences: By meeting the following competencies:
☐ Goal 6: The Humanities and Fine Arts: By meeting the following competencies:
☐ Goal 7: Human Diversity: By meeting the following competencies:
☐ Goal 8: Global Perspective: By meeting the following competencies:
☐ Goal 9: Ethical and Civic Responsibility: By meeting the following competencies:
☐ Goal 10: People and the Environment: By meeting the following competencies:

Topics to be Covered
- Purpose, function and operation of programmable logic controllers
- Ladder Logic and basic programming
- Tag-based addressing
- Timing and counting functions

Student Learning Outcomes
- Describe function of a Programmable logic controller
- Describe parts of a programmable logic controller
- Describe I/O configuration
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<th>Task</th>
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<tr>
<td>Describe discrete and analog I/O</td>
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<td>Describe programming languages</td>
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<td>Explain timing and counting functions</td>
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<td>Program basic control circuits</td>
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<td>Program on-delay and off-delay timers</td>
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<td>Program counters</td>
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<td>Program circuits using tag-based addressing</td>
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<td>Troubleshoot programmable logic control circuits</td>
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Is this course part of a transfer pathway: Yes ☐ No ☒

Revised Date: 02/14/2020