Course Title:
Instrumentation and Control Lab

Catalog Description:
Instrumentation and Control Lab provides hands-on experience to the essential elements of a process control system. It will provide plant operators and entry-level instrument mechanics, basic knowledge of common process instrumentation and control schemes cover an introductory look at the fundamental principles of automatic process control.

Prerequisites or Necessary Entry Skills/Knowledge:
Concurrent Enrollment with RNEW1160

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
Signal devices
Measurement devices for flow rate, pressure, temperature, and analytical control
Control concepts
### Student Learning Outcomes

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<tr>
<th>Identify and interpret process instrumentation and the most common process variables monitored by process instrumentation.</th>
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<td>Describe the general function of an instrument system and identify the basic instruments/devices and the function of each.</td>
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<td>Identify basic operator responsibilities associated with process control.</td>
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<td>Explain the functions of the basic elements of an automated process control system.</td>
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<td>Explain the general operation of a complex PID process control scheme.</td>
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### Is this course part of a transfer pathway:  Yes ☐  No ☒

Revised Date: 2/1/2022