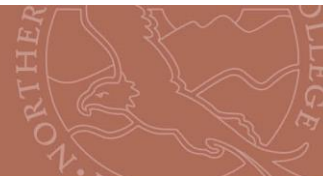


## ELEC 2270 Industrial Controls

<b>Course Number Course Name</b>	ELEC 2270 Industrial Controls
<b>College Department</b>	College of Engineering and Technology
<b>Credit Value</b>	3 (3 Theory)
<b>Catalog Description</b>	Students will learn basic theory of industrial controls, logic functions, and the hardware needed to implement controllers in an industrial setup. Pre-requisites: ELEC 1152L
<b>Textbook and Supplies</b>	“Industrial Motor Control” by Stephen Herman, Cengage Learning
<b>Student Learning Outcomes of the course</b>	<p>Outcomes</p> <ul style="list-style-type: none"> <li>• Describe the structure and organization of a basic control system.</li> <li>• Describe JIC and IEC symbols &amp; standards for industrial electrical documentation. Describe the logical operations of AND, OR, NOR, NAND, NOT, and MEMORY in hard-wired systems.</li> <li>• Apply inputs, outputs and logic to perform control functions.</li> <li>• Describe control relay components, function and operation.</li> <li>• Describe operation and function of various control circuits including 2 wire and 3 wire control.</li> <li>• Describe methods of testing various industrial electrical control component including pilot devices, sensors, relays, transformers and motors.</li> <li>• Describe methods of analyzing symptoms and troubleshooting systems of industrial electrical components.</li> <li>• Describe the function of a control relay and give an application.</li> <li>• Describe the operation of a control relay and give its schematic symbol. Describe the operation of two types of control relays and give an application of each.</li> <li>• Describe how detached symbology is used to show a control relay on a ladder diagram.</li> <li>• Describe the operation of memory logic and give an application.</li> </ul>
<b>Course alignment to College-Wide Learning Outcomes and/or Program Outcomes</b>	ELEC 2270 learning objectives align with the following NNMC College Wide Student Learning Outcomes: <b>Communication</b> <b>Critical Thought</b>
<b>Course Requirements and Grading Policy</b>	<p>You must receive a minimum of a “C” (75%) in the class to pass. Failure to pass the class will result in you being scheduled to appear before the Disciplinary Committee (see General Policies).</p> <ul style="list-style-type: none"> <li>• 30% - Assignments</li> <li>• 20% - Participation &amp; Lab Work</li> <li>• 50% - Final Exam</li> </ul>



<p><b>Student Conduct and Academic Integrity</b></p>	<p>Students are expected to meet the following guidelines:</p> <ul style="list-style-type: none"> <li>• come on time, be prepared, and participate positively</li> <li>• turn off cell phones</li> <li>• do not enter class during a student’s speech</li> <li>• treat classmates and instructor with dignity and respect</li> </ul> <p><i>Plagiarism</i> - Plagiarism is using another writer’s words or ideas without giving proper credit. Students must acceptably paraphrase their sources, state when they are quoting, and acknowledge their sources. Any plagiarized assignment will lead to a failing grade for the course. Students must use MLA for in-text citations and the works cited page.</p>
<p><b>Attendance, Preparation, and Participation</b></p>	<p>Good attendance and participation are crucial to success in college courses. Students must be present and engaged in class to learn the necessary information and practice the essential skills.</p> <p>You must complete all assigned work on Blackboard online. You can find out what you need to do for each chapter under the Chapter Units submenu.</p> <p>Participation in the class is evaluated as a portion of your final grade.</p>
<p><b>Accessibility Statement</b></p>	<p>Northern New Mexico College recognizes its responsibility for creating an institutional climate in which students with disabilities can succeed. In accordance with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act; if you have a documented disability, you may request accommodations to obtain equal access and to promote your learning in this class. Please contact the Verna Trujillo, Coordinator of Accessibility and Resource Center at 505-7472152 or <a href="mailto:v.trujillo@nmmc.edu">v.trujillo@nmmc.edu</a> to inquire about appropriate accommodations. After your eligibility is determined, you will be given a letter, which when presented to instructors, will help us know best how to assist you.</p>