



**OKLAHOMA**  
**CareerTech**

## Badge Details

<b>Name</b>	3955 – Mechatronics – Industrial Electricity 1
<b>Description</b>	<p>This certificate covers basic safety practices for voltages up to 600 volts and knowledge of voltage, current and power in AC and DC circuits, circuit analysis of series and parallel loads, and basic understanding of resistors, capacitors, and inductors. It applies these fundamentals to simple applications that would be found in residential, light commercial and simple industrial use. Candidates should be able to interpret and troubleshoot circuits used for lighting, across the line 3 phase motor starting, and simple relay logic with devices such as control transformers, fuses &amp; circuit breakers, pushbuttons &amp; selector switches, pilot lights &amp; alarm devices, solenoids, 3 phase motor starters, motor overloads, limit switches, and combinations of control relays to perform basic logic functions. Candidates should be familiar with simple wiring practices for using these devices and with component level troubleshooting of these devices.</p>
<b>Criteria</b>	<p><b><i>Candidates receiving this certification will take an exam with the following criteria:</i></b></p> <p>The exam is composed of 100 questions.</p> <ul style="list-style-type: none"><li>• Electricity and Electrical Circuits</li><li>• Measuring Voltage, Current &amp; Resistance</li><li>• Power and Circuit Protection in Series and Parallel Circuits</li></ul>

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|  | <ul style="list-style-type: none"><li>• Electromagnetism, Inductance &amp; Capacitance and their Application</li><li>• Combination Circuits</li><li>• Basic Circuits and Troubleshooting</li><li>• Transformers</li><li>• Introduction to 3-phase motors</li><li>• Manual Motor Control and Protection</li><li>• Electrical Control Ladder Logic</li><li>• Basic Electrical Wiring and Construction</li><li>• Control Relays and Pilot Devices</li><li>• Introduction to Control Component Troubleshooting</li><li>• Safety</li></ul> |
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