### MOTOR CONTROLS

<table>
<thead>
<tr>
<th>Course Number</th>
<th>Course Name</th>
<th>Credit Value (Breakdown of theory and lab credits)</th>
<th>Catalog Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELEC 160</td>
<td>MOTOR CONTROLS</td>
<td>3, 3T+0S</td>
<td>Theory in across-the-line starters, solid-state control, programmable control, pilot devices, line and wiring diagrams, troubleshooting, repair techniques. Co-requisite: ELEC 160L. (3, 3T+0S)</td>
</tr>
</tbody>
</table>

### Student Learning Outcomes/Objectives/Competencies of the Course

**Outcomes**
- Understand ratings and specifications of controls and devices
- Read, understand and interpret schematic, ladder, and pictorial diagrams
- Able to wire start/Stop stations
- Able to wire forward reversing start with interlocks
- Identify parts of a motor to its leads
- Identify types of three-phase motors
- Identify types of single-phase motors

**Topics**
- Electrical Quantities
- Electrical symbols
- Control logic
- Solenoids and motors
- Generators and transformers
- Power distribution
- AC and DC drives
- Control Devices
- Reversing Motors
- Relays and starters sensing controls
- Reduced voltage starters

### College-Wide Student Learning Outcomes