

SPRINGFIELD TECHNICAL COMMUNITY COLLEGE

**ACADEMIC AFFAIRS**

Course Number: ENGY-435 Department: Energy Systems

Course Title: HVAC Electrical Applications Semester: Spring Year: 2003

**Objectives/Competencies**

<b>Course Objective</b>	<b>Competencies</b>
1. Understand electrical circuits as related to HVAC applications.	A. Explain the characteristics of both series and parallel circuits. B. Describe how series and parallel circuits are used as control and power circuits in the HAVC industry. C. Calculate and show relationships between voltage, amperage, resistance and power in electrical circuits.
2. Describe and use electrical meters in HAVC troubleshooting.	A. Select, describe and use volt, OHM and meters in both analog and digital formats. B. Use proper troubleshooting techniques when using meters with HAVC equipment.
3. Read and understand wiring schematics found in HVAC equipment.	A. Identify differences and similarities between ladder and pictorial diagrams. B. Interpret symbols used in wiring schematics. C. Read simple to complex schematic diagrams.

Course Objective	Competencies
<p>4. Explain functions of relays, contractors, and motor starters used in the HVAC industry.</p> <p>5. Identify control systems, circuitry, and troubleshooting.</p>	<p>A. Explain the parts and operation of relays, contractors and motor starters.</p> <p>B. Explain the application of relays, contractors and motor starters.</p> <p>C. Draw wiring schematics containing relays, contractors, and motor starters.</p> <p>D. Troubleshoot relays, contractors and motor starters.</p> <p>A. Describe control circuitry in residential and commercial HVAC applications.</p> <p>B. Draw the basic circuitry of control systems used in residential and commercial applications.</p> <p>C. Describe the procedures used in troubleshooting HVAC systems.</p> <p>D. Troubleshoot residential and commercial electrical systems.</p>