Electrical Fundamentals

Course Information

Developers: HVAC State Curriculum Committee

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Business & Industry Liaison: Ray Frederick

Credit Hours: 4

Course Competencies:

Students will be able to:

1. State and demonstrate the safety precautions that must be followed when working on electrical equipment and circuits.
2. State how electrical power is distributed.
3. State how AC and DC electricity are different.
4. Review math principles pertaining to basic algebraic equations.
5. Apply Ohm's law to calculate the current, voltage, and resistance in a circuit.
6. Apply the power formula to calculate how much power is consumed by a circuit.
7. Describe how voltage, current, resistance, and power are related.
8. Describe the difference between series and parallel circuits and calculate loads in each.
9. Construct parallel circuits
10. Construct series circuits
11. Construct combination parallel and series circuits
12. Read and interpret common electrical symbols.
13. Read and interpret electrical diagrams.
14. Describe the purpose and operation of the various electrical components used in HVAC equipment.
15. Perform voltage, current, and resistance measurements using electrical test equipment.