COLLIN COLLEGE

COURSE SYLLABUS

Course Information

Course Number: HART 1301

Course Title: Basic Electricity for HVAC

Course Description: Principles of electricity as required by HVAC, including proper use of test equipment, electrical circuits, and component theory and operation.

Course Credit Hours: 3
Lecture Hours: 2
Lab Hours: 3

Student Learning Outcomes:

- State Mandated Outcomes: Upon successful completion of the course, students will:
    1. Demonstrate knowledge of basic principles of electricity, electrical current, circuitry, and air conditioning devices; (SCANS: C5, 6, 7, F1, 2, 3, 6)
    2. Apply Ohm's law to electrical calculations; (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    3. Perform electrical continuity, voltage, and current tests with appropriate meters; (SCANS: C5, 6, 7, 15, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    4. Demonstrate electrical safety. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
- Additional Collin College Outcomes: Upon successful completion of this course, students will:
    1. Calculate voltage drop based on conductor length, type of material, and size. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    2. Utilize electrical measuring instruments. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    3. Demonstrate electrical safety. (SCANS: C5, 6, 7, F1, 2, 3, 6)
    4. Identify and use electrical tools and equipment. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    5. Identify electrical circuits. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    6. Define electrical terms.
    7. Explain and use Ohm's law. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    8. Read electrical schematics and wiring diagrams. (SCANS: C3, 5, 6, 7, F1, 2, 3, 8, 9, 10)
    9. Wire an electric distribution panel. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)
    10. Understand the operation of single and three phase power supplies. (SCANS: C5, 6, 7, 15, 18, 19, 20, F1, 2, 3, 8, 9, 10, 12)

Secretary's Commission on the Acquisition of Necessary Skills (SCANS)- SCANS skills are a group of foundational skills and workplace competencies that the Secretary's Commission on the Acquisition of Necessary Skills established as vitally important for workplace success in the 21st century. In Collin's workforce programs, the SCANS skills are developed and reinforced throughout the curriculum to provide students with an opportunity to hone these skills/competencies in the context of their education. Over the course of an entire degree program, the successful student is expected to demonstrate all of the SCANS skills and competencies as part of their education. The SCANS Foundation Skills and Workplace Competencies are described at: http://www.collin.edu/academics/programs/Workforce_SCANS_Skills_Syllabi_Code_Key.pdf

Withdrawal Policy: See the current *Collin Registration Guide* for last day to withdraw.

Collin College Academic Policies: See the current *Collin Student Handbook*

Americans with Disabilities Act Statement: Collin College will adhere to all applicable federal, state and local laws, regulations and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to contact the ACCESS office, SCC-D140 or 972.881.5898 (V/TTD: 972.881.5950) to arrange for appropriate accommodations. See the current *Collin Student Handbook* for additional information.