BDT232 HVAC Lab Syllabus

Course Information

Credits
4
Campus
Washburn Institute of Technology
Address
5724 SW Huntoon
City/State/Zip
Topeka, Kansas 66604
Office Fax
785-273-7080

Description
This HVAC Lab provides hands-on experience to identify major components and functions of air conditioning systems. Instruction is given on types of air conditioning systems and use of instrumentation. Lab topics include use of AC systems, heat-load calculation, properties of air, duct design, air filtration, and safety principles.

Textbooks

Student Learning Outcomes:
A. Communicate effectively
B. Integrate technology
C. Learn effectively
D. Demonstrate cooperative teamwork skills
E. Apply safety in the workplace
F. Think critically and creatively
G. Demonstrate responsible work ethics

Competencies
1. Identify the types of schedules/drawings used in the HVAC trade.
2. Cut and bend copper tubing.
3. Safely join tubing by using flare and compression fittings.
4. Cut and join lengths of plastic pipe.
5. Demonstrate proper set-up and use of torch equipment.
6. Prepare tubing and fittings for soldering.
7. Solder copper tubing and fittings.
8. Assemble and operate the tools used for brazing and soldering.
9. Prepare tubing and fittings for brazing.
11. Demonstrate the use of the temperature and pressure measuring instruments to make readings at key points in the refrigerant cycle.
12. Identify the commonly used refrigerants and demonstrate the proper procedures for handling these refrigerants.
13. Install one or more of the following HVAC systems and their components: Residential, Commercial, and/or Industrial.
14. Demonstrate refrigerant leak detection procedures.
15. Demonstrate refrigerant evacuation procedures.
16. Demonstrate refrigerant recovery procedures.
17. Demonstrate refrigerant charging procedures.
18. Convert measured values in the in-pound system to equivalent metric values and vice versa.
19. Describe the use and installation of diffusers, register, and grills used in duct systems.
20. Explain the use and installation of dampers used in duct systems.
21. Describe the use and installation of insulation and vapor barriers used in duct systems.
22. Identify instruments used to make measurements in air systems and explain the use of each instrument.
23. Perform basic temperature, air pressure, and velocity measurements in an air distribution system.

Guidelines for Success

Assessment Plan
Assessment is an integral part of the educational process at Washburn Tech and accurate feedback is an important tool in continuously improving the institution’s technical programs. Students can expect to participate in assessment activities prior to entry into programs, within specific courses and following program completion for specific fields of study.

Grading Rationale and Grading Scale

100% - 89% = A
88% - 79% = B
78% - 69% = C
68% - 59% = D
58% & Below = F

40% - Participation = Attendance, Tardies, Work Attire, Textbook, Tools, Behavior, Clean-up
30% - Daily Quizzes & Assignments
20% - Performance Assessments (Individual Evaluations)
10% - NCCER Accrediting Exams

Attendance
Classroom attendance is required. Material missed must be made up with instructor.
Disability
The Special Support Services (SSS) Office is responsible for assisting in arranging accommodations and for identifying resources at Washburn Institute of Technology for persons with disabilities. Qualified students with disabilities MUST register and provide documentation with the office to be eligible for services. New requests for accommodations should be submitted two months or more prior to the date services should begin; however, contact the SSS Office as soon as a need may arise. Depending on the accommodation request, four to eight week lead time may be needed for timely and effective provision of services. SSS coordinates and assist in arranging services it deems appropriate of eligible students on a case-by-case basis.

If you are a student with a disability that may substantially limit your ability to participate in this class and believe you will need accommodations, it is your responsibility to contact:

Special Support Services Coordinator
Phone: 785-228-6356
E-Mail: ssscoordinator@washburn.edu