HVAC A102: REFRIGERATION SERVICE

Item	Value
Curriculum Committee Approval Date	12/02/2020
Top Code	094600 - Environmental Control Technology
Units	3 Total Units
Hours	72 Total Hours (Lecture Hours 45; Lab Hours 27)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

Operation, Maintenance, Troubleshooting and repair of Commercial refrigeration systems. Theory, operation, maintenance and trouble-shooting of absorption system. PREREQUISITE: HVAC A100 and HVAC A101. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Interpret gauge readings to identify component and system failures.
2. Recover, repair, evacuate, and recharge refrigeration systems to return to efficient operating standards while adhering to EPA guidelines.

Course Objectives

- 1. Describe sequence of operation for refrigeration systems
- 2. Interpret gauge readings for diagnosis and repair
- 3. Repair, evacuate, and recharge refrigeration systems to return to efficient operating standards.
- 4. Recover refrigerant.
- 5. Describe EPA standards for refrigerant handling.
- 6. Use tools of the trade for repair of refrigeration systems.
- 7. Submit application and take test for EPA certification.
- 8. Describe basic fundamentals of service and maintenance.
- 9. Install and service refrigeration components.

Lecture Content

Refrigeration System Components Compressors Condensers Evaporators Refrigerant Control Devices Electric Control Devices Motors, Starters, Protectors Accessories System Design Applications Refrigerant Piping Capacity Control Electric Circuits Installation and Service Installation Servicing Fundamentals Maintenance

Lab Content

See Course Content.

Method(s) of Instruction

- Lecture (02)
- Lab (04)

Instructional Techniques

Lecture and hands on demonstrations for recovering refrigerants, evacuation and recharge refrigeration systems after repair to return to efficient operating standards

Reading Assignments

.

Writing Assignments

Written description of methods for diagnosis of mechanical and electrical failures and sequence of repair proceedings. Use of tools of the trade in a hands on demonstration for implementing diagnosis and completing repair.

Out-of-class Assignments

.

Demonstration of Critical Thinking

Written tests including multiple choice, true/false, fill in, and hands on demonstrations using tools of the trade.

Required Writing, Problem Solving, Skills Demonstration

Written description of methods for diagnosis of mechanical and electrical failures and sequence of repair proceedings. Use of tools of the trade in a hands on demonstration for implementing diagnosis and completing repair.

Eligible Disciplines

Air conditioning, refrigeration, heating (solar energy technician): Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience. Air conditioning, refrigeration, heating (solar energy technician): Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Dick Wirz. Commercial Refrigeration for A/C Tech, ed. New York: Thompson/Delmar , 0 Rationale: latest