

Jessica Lynn Cumberland

Jan 31, 2021

HVAC Technician Professional Career Program

Program Goal: To prepare students for an entry-level career as an HVACR technician in the residential and light construction field.

10 COURSES REQUIRED FOR
THIS PROGRAM

PROGRAM OUTCOMES

Explain mathematical processes and use of formulas necessary for design, evaluation, and installation of HVACR systems

Identify basic concepts in electricity, electrical circuits, electronics, and gas components in appliances and how to work with them safely

Recognize safety procedures and established regulations related to work-place and job requirements

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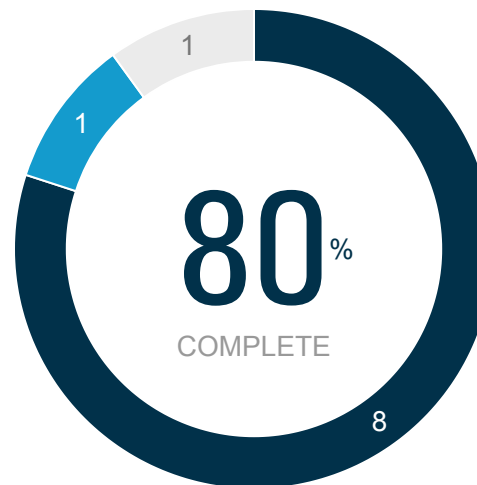
Identify drawings, technical diagrams, and specification charts require for installation and repair of HVACR systems




Define theories and processes for evaluating and installing electrical systems and controls

List procedures for installing, inspecting, testing, repairing, and maintaining HVACR systems

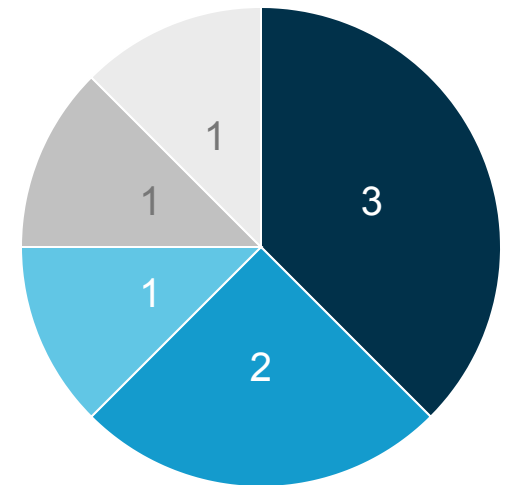
Recognize procedures for following government regulations regarding the conservation, recovery, and recycling of refrigerants



PROGRAM PROGRESS



 Classes Completed
 Classes In Progress
 Classes Remaining

GRADE DISTRIBUTION



 A: Excellent
 B: Good
 C: Average
 D: Passing
 F: Failing



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Orientation to HVACR

✓ Complete Grade: **A**

- Analyze the various components used in refrigeration and indoor comfort-control systems

Electrical Systems

✓ Complete Grade: **40**

- Explain electrical power and the operating characteristics of equipment, circuits, motors, and control devices
- Use schematics to determine the expected operation of an electrical system

Commercial Refrigeration and HVACR Maintenance

● In Progress

- Analyze operations and troubleshooting related to supermarket refrigeration systems and ice machine equipment
- Identify the various troubleshoots concerning commercial refrigeration systems
- Categorize the major phases of installation, maintenance, and cleanup procedures in refrigeration systems

Math and Electrical Basics for HVACR

✓ Complete Grade: **B**

- Summarize how to use basic math operations for trade professions
- Describe the nature of electricity

Residential and Light Commercial HVACR Systems

✓ Complete Grade: **60**

- Identify the fundamentals of psychometrics and the various functions of air filters and ventilation systems
- Distinguish the various operations, installation processes, and troubleshooting of refrigeration systems and air-conditioning systems
- Analyze the principles, functions, and safety measures involved in combustion, gas, and oil heating systems
- Categorize the various applications and troubleshoots of electric heating systems and heat pump systems

Commercial Refrigeration and HVACR Maintenance

○ Remaining

- Analyze operations and troubleshooting related to supermarket refrigeration systems and ice machine equipment
- Identify the various troubleshoots concerning commercial refrigeration systems
- Categorize the major phases of installation, maintenance, and cleanup procedures in refrigeration systems

Fundamentals of HVACR

✓ Complete Grade: **100**

- Analyze the field of HVACR, the associated roles, and the importance of safety at the workplace
- Categorize the components of the HVACR field and work
- Point out the scientific elements and laws associated with HVACR

HVACR System Design and Installation

✓ Complete Grade: **80**

- Describe the components, calculations, and designed associated with building constructions and systems
- Analyze the methods of duct designing and the systems of zone controlling and air balancing
- Identify the components and purpose of air-conditioning, commercial control, chilled-water, and air-handling systems
- Distinguish among the types, components, and operating processes of chilled-water and hydronic heating systems

Refrigeration Systems

✓ Complete Grade: **70**

- Categorize the different refrigeration systems and their parts
- Distinguish among refrigeration devices, components, refrigerant properties, and the safety measures associated with each
- Describe the servicing, testing, and maintaining procedures for refrigerant systems

Commercial Refrigeration and HVACR Maintenance











✓ Complete Grade: **Pass**

- Analyze operations and troubleshooting related to supermarket refrigeration systems and ice machine equipment
- Identify the various troubleshoots concerning commercial refrigeration systems
- Categorize the major phases of installation, maintenance, and cleanup procedures in refrigeration systems

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| COURSE | COURSE NAME | GRADE | ASSOCIATED SKILLS |
|--|--|-------------|---|
|  HVC010 | Orientation to HVACR | A | HVC010 HVC020 Comprehend mathematical processes and use of formulas necessary for design, evaluation, and installation of HVACR systems |
|  HVC020 | Math and Electrical Basics for HVACR | B | |
|  HVC030 | Fundamentals of HVACR | 100 | HVC080 Recognize procedures for following government regulations regarding the conservation, recovery, and recycling of refrigerants |
|  HVC040 | Refrigeration Systems | 70 | HVC010 HVC020 Understand composition and usage of HVACR materials, equipment, and tools required for installation and diagnostic tasks |
|  HVC050 | Electrical Systems | 40 | HVC030 |
|  HVC060 | Residential and Light Commercial HVACR Systems | 60 | HVC020 HVC040 Recognize safety procedures and established regulations related to workplace and job requirements |
|  HVC070 | HVACR System Design and Installation | 80 | HVC050 HVC060 Understand the refrigeration cycle, gas laws, and properties of refrigerants required for diagnostic and systems design |
|  HVC080 | Commercial Refrigeration and HVACR Maintenance | Pass | HVC070 |
|  HVC090 | Commercial Refrigeration and HVACR Maintenance | | HVC090 Comprehend drawings, technical diagrams, and specification charts required for installation and repair of HVACR systems |
|  HVC100 | Commercial Refrigeration and HVACR Maintenance | | HVC070 HVC090 Understand theories and processes for evaluating and installing electrical systems and controls |
| | | | HVC030 HVC040 Comprehend procedures for installing, inspecting, testing, repairing, and maintaining HVACR systems |
| | | | HVC050 HVC060 |
| | | | HVC010 HVC020 Know procedures for following government regulations regarding the conservation, recovery, and recycling of refrigerants |
| | | | HVC100 |