

Course Code: HVC 137

Course Title: HVAC Service II

Department: Applied Sciences and Technologies

Effective Date: Summer 2026

PCS Code: 1.2 - Occupational/Technical Instruction

CIP Code: 47.0201

Repeatability: 0

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

Intermediate diagnosis and repair practices for residential and light commercial HVAC systems. Orientation to specialty HVAC systems.

General Course Objectives

The student will select and apply appropriate diagnostic methods to common residential, light commercial, and specialty HVAC systems. The student will perform appropriate electrical and mechanical repairs based on diagnostic data.

Minimum Placement Levels

English

None

Reading

None

Math

None

Prerequisites

Credit in HVC 136

Methods of Evaluation

At least 6 quizzes, 1 midterm exam, 1 final exam, and at least 10 labs. In-class and/or homework assignments recommended.

Instructional Materials and Additional Supplies

Modern Refrigeration and Air Conditioning, 22nd Ed. Althouse. Goodheart-Wilcox Publishing.
ISBN#979-8888174890. Print Text

Course Content

General Learning Outcomes (GLOs)

- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Intermediate AC Diagnostics	1. Use pressure gauges to diagnose refrigerant problems in AC systems. 2. Select and apply appropriate repairs based on measured pressures. 3. Use multi-meter to diagnose electrical problems in AC systems. 4. Select and apply appropriate repairs based on measured electrical data. 5. Discuss interaction of refrigerant problems and electrical problems in AC systems.	10	10	0
Intermediate Heating Diagnostics	1. Use manometers and combustion analyzers to diagnose fuel problems in heating systems. 2. Select and apply appropriate repairs based on measured fuel data. 3. Use multi-meter to diagnose electrical problems in heating systems. 4. Select and apply appropriate repairs based on measured electrical data. 5. Discuss interaction of fuel problems and electrical problems in heating systems.	10	10	0
Specialty AC System Diagnostics	1. Explain AC troubleshooting principles for mini-split systems. 2. Explain AC troubleshooting principles for air source heat pump systems. 3. Explain AC troubleshooting principles for water/ground source heat pump systems.	5	5	0
Specialty Heating System Diagnostics	1. Explain heating troubleshooting principles for mini-split systems. 2. Explain heating troubleshooting principles for air source heat pump systems. 3. Explain heating troubleshooting principles for water/ground source heat pump systems. 4. Explain heating troubleshooting principles for electric furnace systems. 5. Explain heating troubleshooting principles for boiler systems.	5	5	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0