

# AUTO 147: AUTOMOTIVE HEATING, VENTILATION AND AIR CONDITIONING MLR

## Citrus College Course Outline of Record

Heading	Value
Effective Term:	Fall 2023
Credits:	2
Total Contact Hours:	63
Lecture Hours :	27
Lab Hours:	36
Hours Arranged:	0
Outside of Class Hours:	54
Total Student Learning Hours:	117
Strongly Recommended:	ENGL 101; Integrated Math 3 or Algebra 1; AUTO 146 or one year of employment as automotive technician.
Transferable to CSU:	No
Transferable to UC:	No
Grading Method:	Standard Letter, Pass/No Pass

## Catalog Course Description

Intended for the incumbent worker, re-entry person or person seeking a career change into the automotive service industry. This course is part of the the Maintenance and Light Repair (MLR) curriculum. The course covers essential HVAC system theory; inspection, maintenance and light repair. Course prepares students for ASE HVAC (A7) certification and portions of the G1 certification. 27 lecture hours, 36 lab hours.

## Course Objectives

- Identify refrigerant and recommend corrective action.
- Perform refrigerant recovery & recycling following local laws and manufacturer's procedures and specifications.
- Check system pressure and determine corrective action.
- Test compressor operation and determine corrective action.
- Remove and replace compressor, condenser and metering devices according to manufacturer's procedures and specifications.
- Test blower motor operation and determine corrective action.

## Major Course Content

1. HVAC theory
  - a. Body comfort
  - b. Heat, matter and pressure
  - c. Refrigerant
  - d. Refrigeration systems
2. Service equipment & procedures
  - a. Moisture & moisture removal
  - b. Refrigerant recovery & recycling
  - c. System pressure
3. Air distribution control

- a. Air inlet control
  - b. Air outlet control
  - c. Air speed control
  - d. Air mix control
4. Compressors
  5. Metering devices

## Lab Content

1. Diagnosis, service and repair
  - a. Moisture & moisture removal
  - b. Refrigerant recovery & recycling
  - c. System pressure measurement & analysis
  - d. Refrigerant identification
2. Air distribution control testing
  - a. Air inlet control testing
  - b. Air outlet control testing
  - c. Air speed control testing
  - d. Air mix control testing
3. Compressor diagnosis, service and repair
4. Metering device diagnosis, service and repair

## Suggested Reading Other Than Required Textbook

Student will complete instructor selected MyAutomotiveLabs e-learning modules that are related to the subject matter.

## Examples of Required Writing Assignments

Student will use electronic service information to complete guided discovery based learning.

## Examples of Outside Assignments

Students will be assigned industry based technical article evaluation from trade journals.

## Instruction Type(s)

Lab, Lecture