Department:

Automotive Technology

Course Description:

This course is designed to provide knowledge of basic heating and air conditioning systems. The course will cover theory and operation as well as proper maintenance and service procedures. Emphasis will also be on safety and correct use of air conditioning tools.

Course Competencies:

Upon completion of the course, the student should be able to:

1. Explain the fundamentals of automotive HVAC operations and environmental concerns.
2. Identify the appropriate refrigerant recovery and recycling guidelines.
3. Service refrigerant, recycling, and handling systems.
4. Document fundamental heating and air conditioning systems concerns.
5. Perform fundamental diagnostics of air conditioning systems.
6. Perform fundamental diagnostics of refrigeration systems components.
7. Perform fundamental repairs of refrigeration systems components.
8. Perform fundamental diagnostics of heating, ventilation, and engine cooling systems.
9. Perform fundamental repairs of heating, ventilation, and engine cooling systems.
10. Perform fundamental diagnostics of operating systems and related controls.
11. Perform fundamental repairs of operating systems and related controls.
12. Perform complex diagnostics of air conditioning systems.
15. Perform complex repairs of refrigeration systems components.
16. Perform complex diagnostics of heating, ventilation, and engine cooling systems.
17. Perform complex repairs of heating, ventilation, and engine cooling systems.
18. Perform complex diagnostics of operating systems and related controls.
19. Perform complex repairs of operating systems and related controls.

Course Content:

A. Heating and Air-Conditioning Components and Operation
B. Automatic Air-Conditioning Systems Operation
C. Heating and Air-Conditioning Systems Diagnosis
D. Heating and Air-Conditioning Systems Service
Learning Assessments:

Assessments may include quizzes, tests, project work, demonstrations, observations, weekly assignments, and written papers.

Instructional Materials:


Guidelines for Requesting Accommodations Based on Documented Disability or Medical Condition

It is the intention of Highland Community College to work toward full compliance with the Americans with Disabilities Act, to make instructional programs accessible to all people, and to provide reasonable accommodations according to the law.

Students should understand that it is their responsibility to self-identify their need(s) for accommodation and that they must provide current, comprehensive diagnosis of a specific disability or medical condition from a qualified professional in order to receive services. Documentation must include specific recommendations for accommodation(s). Documentation should be provided in a timely manner prior to or early in the semester so that the requested accommodation can be considered and, if warranted, arranged.

In order to begin the process all students must complete the “Disabilities Self-Identification Form” at this link: https://highlandcc.edu/pages/disability-services.

This form can also be accessed at the Highland Community College homepage under Students Services/Student Resources/Disability Service or by contacting the Disabilities Coordinator.