

Department:

Automotive Technology

Course Description:

This course is a lecture course designed to give students knowledge of basic heating and air conditioning systems. The student will gain knowledge of theory and operation as well as proper maintenance and service procedures. A major emphasis will be on safety and correct use of air conditioning tools.

Course Competencies:

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

1. Explore 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 system concerns.
5. Perform fundamental diagnostics of A/C 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 A/C systems.
13. Document complex heating and air conditioning system concerns.
14. Perform complex diagnostics of refrigeration system components.
15. Perform complex repairs of refrigeration system components.
16. Perform complex diagnostics of heating, ventilation, and engine cooling systems.
17. Perform complex repairs of heating, ventilation, and engine cooling systems. Perform complex diagnostics of operating systems and related controls.
18. Perform complex repairs of operating systems and related controls.

Course Content:

- A. Heating and Air -Conditioning
 1. Heating and Air-Conditioning Components and Operation
 2. Automatic Air-Conditioning System Operation
 3. Heating and Air- Conditioning System Diagnosis
 4. Heating and Air-Conditioning System Service

Learning Assessments:

Assessments may include: Quizzes, tests, project work, demonstrated competence, instructor observation, weekly assignments and/or written papers.

Instructional Materials:

Textbook: Halderman, J. (2020). *Automotive Technology: Principles, Diagnosis, and Service* (6th ed.). Pearson. ISBN-13: 978-0135257272

Lab Manual: Halderman, J. (2020). *ASE Correlated Task Sheets for Automotive Technology* (6th ed.). Pearson. ISBN-13: 978-0135257418

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” on our [Disability Services website](#).

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.

A Note on Harassment, Discrimination and Sexual Misconduct

Highland Community College seeks to assure all community members learn and work in a welcoming and inclusive environment. Title VII, Title IX, and College policy prohibit harassment, discrimination and sexual misconduct. Highland Community College encourages anyone experiencing harassment, discrimination or sexual misconduct to talk to report to the Vice President for Student Services, the Human Resources Director or complete an [online report](#) about what happened so that they can get the support they need and Highland Community College can respond appropriately.

There are both confidential and non-confidential resources and reporting options available to you. Highland Community College is legally obligated to respond to reports of sexual misconduct, and therefore we cannot guarantee the confidentiality of a report, unless made to a confidential resource. Responses may vary from support services to formal investigations. As a faculty member, I am required to report incidents of sexual misconduct and thus cannot guarantee confidentiality. I must provide our Title IX coordinator with relevant details such as the names of those involved in the incident. For more information about policies and resources or reporting options, please review our [Equity Grievance Policy](#).