



## AUTO 2500

**Division:** Career and Technical Education

**Department:** Automotive Technology

**Course:** AUTO 2500

**Title:** Automotive Heating and Air Conditioning

**Catalog Description:**

Students will cover the principles, operation, and servicing of automotive air conditioning and heating systems and their components.

**General Education Requirements:** N/A

**Semesters Offered:** TBA

**Credit/Time Requirement:** Credit: 4; Lecture: 2; Lab: 5

**Clock/Hour Requirements:** 105

**Offered for Non-Credit:** No

**Prerequisites:** AUTO 1102

**Corequisites:** None

**Justification:**

This course is required for Automotive Service Excellence (ASE) certification. It is approved by the program advisory committee.

**Student Learning Outcomes:**

Upon successful completion of this course, students will be able to safely perform the tasks listed in the current edition of *ASE Certification For Automobile Training Programs*.

**Content:**

Upon completion of this course, students understand and will be able to explain:

- safety
- matter, heat, and pressure as related to air conditioning
- principles of refrigeration
- the refrigeration circuit
- temperature - pressure relationship
- moisture and moisture removal
- temperature and pressure control devices
- case/duct systems
- automatic temperature controls
- air conditioning system diagnosis
- refrigerant reco

- 4) Retrieve, evaluate, interpret, and deliver information through a variety of traditional and electronic media. Students will utilize electronic and written reference manuals and computer diagnostics to identify, troubleshoot, and repair air conditioning and heating systems, and other components.
- 5) Apply a cultural and historical awareness to a variety of phenomena. Students will develop an understanding of the history of automobile development and its relationship to past, current, and future developments in the automotive field.

**Key Performance Indicators:**

**In class:**

- Students shall be required to complete chapter tests (50% of the grade), and pass a final test (50% of the grade). In addition, students are required to perform shop tasks (P1 tasks 100%, P2 tasks 90%, and P3 tasks 80% to pass course) as outlined in the current edition of *ASE Certification For Automobile Training Programs*.

**Following class:**

- Course evaluation will be demonstrated by the following methods:
  - student feedback as per ASE requirements
  - students passing ASE tests
  - students transferring to other post secondary institutions
  - student performance in subsequent courses.

**Representative Text and/or Supplies:**

- Dwiggin, Boyce H., *Automotive Air Conditioning*, current edition, Thomson/Delmar Learning.

**Optimum Class Size:** 10

**Maximum Class Size:** 18

**Signatures:**

I hereby submit this course syllabus:

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Brent Reese, BS, Associate Professor

I hereby find this course consistent with the goals and resources of the Automotive Technology Department:

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Brent Reese, BS, Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

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Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

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Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

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Michelle Olsen, MLS, Campus Librarian (Richfield Campus)