



AUTO 2801

Division: Career and Technical Education

Department: Automotive Technology

Course: AUTO 2801

Title: Automotive Fuel, Emissions, and Ignition Systems

Catalog Description:

Students will have an understanding of the theory, operation, diagnosis, and repair of fuel, emission control systems, and ignition systems.

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 5; Lecture: 3; Lab: 6

Clock/Hour Requirements: 135

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:

Course objectives will be accomplished by providing students with learning experiences in the following subject areas:

- safety
- engine design and operation
- ignition systems
- fuel systems
- intake and exhaust systems
- emission control systems
- distributor ignition systems
- electronic ignition systems.

General Education Outcomes:

- 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 fuel, emissions, and ignition systems, and other vehicle components.
- 6) Apply computational skills to a variety of contexts.
Students are required to perform mathematic computations with regard to fuel, emissions, and ignition systems. Familiarity with the binary numbering system and computer generated matrices is emphasized.
- 7) Apply scientific reasoning to a variety of contexts.
Students will participate in fuel, emissions, ignition systems, engine performance, and other diagnostic procedures.

Key Performance Indicators:

In class:

- Students shall be required to complete chapter assignments (60%) and pass a final test (40%), 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:

- Knowles, Don and Erjavec, Jack, *Automotive Engine Performance*, current edition, Thompson/Delmar Learning.

Optimum Class Size: 10

Maximum Class Size: 18

Signatures:

I hereby submit this course syllabus:

Brent Reese, BS, Associate Professor

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

Brent Reese, BS, Associate Professor, Chair

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

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:

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

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)