



AUTO 2600

Division: Career and Technical Education

Department: Automotive Technology

Course: AUTO 2600

Title: Automotive Engine Repair

Catalog Description:

This course covers construction and operational principles of basic gasoline engine systems and major overhaul of the complete automotive engine.

General Education Requirements: N/A

Semesters Offered: TBA

Credit/Time Requirement: Credit: 5; Lecture: 2; Lab: 9

Clock/Hour Requirements: 165

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 will be able to understand and explain:

- safety
- theory of engine operation
- engine diagnosis
- engine measuring and reconditioning tools and equipment
- engine removal and disassembly
- cylinder head and valve train disassembly and inspection
- reconditioning the cylinder head
- inspection and reconditioning the cylinder block
- engines past, present, and future
- inspection and reconditioning crank shaft and cam shafts
- engine reassembly and installation
- inspection and repair of engine lubricating and cooling 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 engines, and other vehicle 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.
- 6) Apply computational skills to a variety of contexts.
Students are required to perform mathematic computations with regard to engine components. 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 electrical, transmission, 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:

- Hollembeak, Barry, *Automotive Engine Repair and Rebuilding*, current edition, Thomson/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)