



Course Outline

2026-2027 Catalog

AUT 9 - Automotive Engines Lab

Catalog Description

Transfer Status: CSU

Prerequisite: AUT 3 (or concurrent enrollment)

Unit(s): 3.00

Lab: 153.00 Contact hours/0.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

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Course Description: In this course students will develop and demonstrate the hands-on skills needed to repair the internal combustion engine and related components. Students will learn the proper use of hand and power tools and test equipment used in the automotive industry.

Objectives

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

1. Implement proper use of personal protective equipment and protocols while working on and around automotive engine systems.
2. Accurately demonstrate mechanical engine diagnosis.
3. Demonstrate ability in engine dismantling, inspection, and assembly.
4. Evaluate cylinder head, valve train, and block diagnosis and repair.
5. Perform lubrication and cooling system diagnosis and repair.

Course Content

Topic Titles / Suggested Time Topic	
	<u>Lab</u>
<u>Topics</u>	<u>Lab Hrs</u>
Valve system service and diagnosis (Engine top end)	33.00
Engine block service and diagnosis (Engine bottom end)	50.00
a. Disassemble and diagnose	
b. Precision measuring	
Engine - fault diagnosis and repair	70.00
a. Diagnose cooling system	
b. Diagnose valve train	
c. Diagnose lower engine components	
Total Hours: 153.00	

Methods of Instruction

- A. Class Activities
- B. Collaborative Group Work
- C. Instructor Demonstrations
- D. Laboratory Experiments
- E. Problem-Solving Sessions

Methods of Evaluation

- A. Special Studies/Problems
- B. Exams/Tests
- C. Demonstration
- D. Lab Projects
- E. Final Examination
- F. Performance Examinations

Examples of Assignments

Reading Assignments

1. Consult a repair publication and read the section on "intake valve removal procedure" and be ready to show the instructor where you found the correct repair information and specifications.
2. Using Alldata or Mitchell, acquire, read, and print the section about valve adjustment. Be prepared to show the instructor the procedure in lab.

Writing Assignments

1. Acquire data about the proper procedures for removal and reassembly of a major engine component and write your short answers (two sentence minimum) in the spaces provided in your lab workbook.
2. In your classroom lab workbook, write a one-page summary of what you learned in today's lab.

Out-of-Class Assignments

1. Not applicable.

Recommended Materials of Instruction

Halderman, J. (2026). Automotive Engines Theory and Servicing. *Pearson, 10th*. 9780135434109.

Minimum Qualifications

Automotive Technology

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