



## Course Outline

2026-2027 Catalog

### AUT 8 - Auto Engines Lecture

#### Catalog Description

**Transfer Status:** CSU

**Prerequisite:** AUT 3 (or concurrent enrollment)

**Corequisite:** AUT 9

**Unit(s):** 3.00

**Lecture:** 51.00 Contact hours/102.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

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**Course Description:** This course covers the operation, design, construction, fault diagnosis, service and repair procedures of the internal combustion engine.

#### Objectives

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

1. Prioritize safety practices while working on and around automotive engine systems.
2. Identify automotive engine components and describe system design and construction.
3. Analyze automotive engine faults theoretically
4. Discuss automotive engine service and repair procedures.
5. Prioritize automotive engine maintenance.

#### Course Content

| Topic Titles / Suggested Time Topic                                                         |                |
|---------------------------------------------------------------------------------------------|----------------|
| <u>Lecture</u>                                                                              |                |
| <u>Topics</u>                                                                               | <u>Lec Hrs</u> |
| Overall engine diagnosis - fault diagnostics of all internal and external related systems.  | 18.00          |
| Engine - valve system and cylinder head, construction, operation, diagnosis and repair.     | 9.00           |
| Engine - pistons, rings and connecting rods, construction, operation, diagnosis and repair. | 9.00           |
| Engine - block, crankshaft servicing operation and repair.                                  | 11.00          |
| Job orientation, shop safety, shop and automotive operations.                               | 4.00           |
| <b>Total Hours:</b>                                                                         | <b>51.00</b>   |

#### Methods of Instruction

- A. Collaborative Group Work
- B. Group Discussions
- C. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- D. Instructor Demonstrations
- E. Lecture
- F. Multimedia Presentations
- G. Reading Assignments

#### Methods of Evaluation

- A. Quizzes
- B. Homework
- C. Class participation
- D. Written Assignments
- E. Practical Evaluations
- F. Mid-term and final examinations

#### Examples of Assignments

##### Reading Assignments

1. After reading the chapter on "Engine Theory" in the textbook, be prepared to verbally discuss the four stroke process.
2. After reading the BAR "Write it Right" handbook, be prepared to discuss the document requirements for a legal Engine Component diagnosis and repair.

**Writing Assignments**

1. In your classroom lecture notebook, write short answers (two sentences minimum) for each of the ten questions from today's lecture.
2. In your classroom lecture notebook, write a one-page summary of what you learned in today's lecture.

**Out-of-Class Assignments**

1. Read the chapter on "Engine Theory" and complete the end of chapter quiz.
2. Write at least three paragraphs summarizing what you learned this week in class. Include objectives met and applications of new concepts.

**Recommended Materials of Instruction**

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Halderman, J. (2018). Automotive Heating and Air Conditioning. *Pearson, 8th*. 9780134603698.

**Minimum Qualifications**

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Automotive Technology

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**Created/Revised by:** Kielb, Craig

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