

## **AUTE-118-ENGINE REPAIR 8 CREDITS**

### **SYLLABUS**

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#### **CATALOG DESCRIPTION**

This course will cover the principles and operation of the internal combustion engine. Engines will be properly disassembled, inspected, measured, and reassembled. The operation and repair of the oiling and cooling system will be covered. Safety is emphasized.

Corequisites:           AUTE-119

Semester Offered:    Fall

#### ***Common Student Learning Outcomes***

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

##### **BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

##### **CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

##### **CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

##### **EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

##### **INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

##### **INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

*Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.*

#### **Course Learning Outcomes**

Upon successful completion of the course, the student will be able to...

1. To prepare the student for competence in repairing or rebuilding modern engines.
2. Completion of 100% of NATEF priority 1 tasks.
3. Completion of 85% of NATEF priority 2 tasks.

4. Completion of 75% of NATEF priority 1 tasks.

## **SPECIFIC LEARNING OUTCOMES**

Upon successful completion of the course, the student will be able to...

1. Demonstrate safe procedures for engine service.
2. Demonstrate knowledge of the four stroke engine.
3. Identify various lubricants and their usage.
4. Perform an oil pressure test.
5. Locate and repair engine oil leaks.
6. Disassemble and assemble a four stroke engine.
7. Identify various sealants and their applications.
8. Measure crankshaft journals.
9. Measure crankshaft end play with a dial indicator.
10. Plasti-gage main and rod bearings.
11. Measure cylinder walls and fit pistons.
12. Deglaze cylinder walls.
13. Install piston rings and check clearances.
14. Remove cylinder ridge.
15. Remove and install camshaft bearings.
16. Time camshaft(s) to crankshaft.
17. Measure play in timing chains, gears, and belts.
18. Inspect oil pump for excessive wear.
19. Perform a complete valve job.
20. Inspect valve train and guides for cause of malfunctions.
21. Remove and replace core plugs.
22. Identify different engine noises.
23. Adjust hydraulic and solid lifters.
24. Demonstrate competency in using engine overhaul tools.
25. Remove and install various engines.
26. Remove and install valve covers in the vehicle.
27. Remove and install cylinder heads in the vehicle.
28. Remove and install intake manifold in the vehicle.
29. Pressure test a cooling system.
30. Remove and replace hoses and radiators.
31. Remove and replace a water pump.
32. Remove, inspect and replace a thermostat.