

COCONINO COMMUNITY COLLEGE

COURSE OUTLINE

Prepared by: Joe Costion
Status: Permanent

Date: Sept. 2, 2004

A. Identification:

1. Subject Area: Automotive Technology
2. Course Number: AUT 108
3. Course Title: Automotive Engines Long Block Service Lab
4. Credit Hrs: 3
5. Catalog Description:

Continuing laboratory experience in engine service and rebuild; emphasizing the "long block" assembly. Students will disassemble, inspect and service the engine block for warpage, alignment and bore, service crankshaft, service camshafts and timing, service pistons and rods and service plugs, seals, covers, damper and flywheel. Prerequisites: AUT 107. One lecture. Three lab. May be taken for S/U credit.

B. Course Goals:

To introduce student to the following topics: Analysis of Engine Component Failures, Block for Warpage, Alignment and Bore Service, Engine Service, Crankshaft & Bearing Service, Camshaft, Bearing and Timing Service, Piston and Rod Service, and Plug, Seal, Cover, Damper, and Flywheel Service.

C. Course Outcomes:

Students will:

1. Inspect engine for source of noises.
2. Check engine oil pressure.
3. Test compression.
4. Remove and replace engine assembly.
5. Clean engine.
6. Inspect block for warp.
7. Remove and replace main bearings.
8. Remove and replace crankshaft.
9. Remove and replace camshaft bearings.
10. Remove and replace camshaft.
11. Remove and replace timing components (gears, chains, belts, sprockets).
12. Remove and replace pistons.
13. Fit piston pins.
14. Remove and replace connecting rod bearings.
15. Remove and replace core plugs.
16. Remove and replace timing cover and seals.
17. Remove and replace rear seals.

18. Remove and replace crankshaft damper and flywheel.

D. Course Content:

Will include:

1. Engine Component Failure Analysis
2. Block Service
3. Crankshaft & Bearing Service
4. Camshaft, Bearings and Timing Service
5. Piston and Rod Service
6. Plugs, Seals, Covers, Damper and Flywheel Service