

Master Syllabus

AUT 2222 - High Performance Engine Assembly & Dyno Testing

Division: Science, Mathematics and Engineering

Department: Automotive Technology

Credit Hour Total: 6.0

Lecture Hrs: 3.0 **Lab Hrs:** 9.0

Prerequisite(s): AUT 1108

Other Prerequisite(s): OR Approval of Department

Date Revised: October 2013

Course Description:

High-performance engine block and cylinder head final assembly. Finished engine assembly is dynamometer tested for performance output. Three classroom, nine lab hours per week.

General Education Outcomes:

- ▣ Critical Thinking/Problem Solving Competency
- ▣ Computer Literacy Competency
- ▣ Written Communication Competency
- ▣ Information Literacy Competency

Course Outcomes:

Final Engine Measurements

Perform final precision engine measurements prior to final assembly.

Assessment Method: Performance appraisals

Performance Criteria: Score 3 on a 4 point rubric

Engine Final Assembly

Perform component preparation for final assembly.

Assessment Method: Performance appraisals

Performance Criteria: Score 3 on a 4 point rubric

Engine Assembly Finalization

Assemble engine in preparation for dyno testing.

Assessment Method: Performance appraisals

Performance Criteria: Score 3 on a 4 point rubric

Engine Dynamometer Test

Mount engine on dynamometer and test engine for performance output.

Assessment Method: Performance appraisals

Performance Criteria: Score 3 on a 4 point rubric

Dynamometer Data Analysis

Collect and analyze dynamometer data and make necessary engine operationing adjustments.

Assessment Method: Performance appraisals

Performance Criteria: Score 3 on a 4 point rubric

Final Engine Report

Prepare a written report on engine project.

Assessment Method: Performance appraisals

Performance Criteria: Score 3 on a 4 point rubric

Outline:

Engine and cylinder head cleaning.
Engine final assembly precision measurements.
Detailed assembly of short block and camshaft degreeing.
Valve spring set-up and assembly of cylinder heads.
Valve train geometry checks.
Final assembly checks performed and pre-oiling of engine.
Dynamometer testing of student engine project.
Compose a written final engine report.