

## 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

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#### 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 degreasing.  
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.