

## Master Syllabus

### AUT 2221 - High Performance Engine Blocks & Heads

**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 building plan development. Disassembly, cleaning and inspection of components. Reconditioning/modification of components. Preparation of components prior to final/trial assembly. Three classroom, nine lab hours per week.

#### General Education Outcomes:

- ▣ Critical Thinking/Problem Solving
- ▣ Computer Literacy
- ▣ Information Literacy
- ▣ Oral Communication

#### Course Outcomes:

##### Blueprint document

Compile collected data and recorded information to produce a blueprint document.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 3 on a 4 point rubric

##### Engine plan

Research and submit a project engine building plan forming the basis of the required project.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 3 on a 4 point rubric

##### Project feasibility

Determine project feasibility by performing critical measurements and record findings in accepted format.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 3 on a 4 point rubric

##### Engine building database research

Research available resources and determine availability of technical information and part availabilities.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 3 on a 4 point rubric

##### Engine project build plan

Interact with vendors and brand specific experts related to project and form a build plan and timeline.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 3 on a 4 point rubric

##### Engine machining operations and precision measurements

Successfully perform required machining operations. Post machining precision measurements shall be performed and recorded in an accepted format.

**Assessment Method:** Performance appraisals

**Performance Criteria:** Score 3 on a 4 point rubric

#### Outline:

High performance engine planning and component selection  
Critical measurement techniques  
Detailed inspection and evaluation of components  
Proper sequence of engine/cylinder head machining  
Modification of engine components  
Preparation for trial/final assembly of engine components  
Develop engine blueprint documentation