

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

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 Competency
- Computer Literacy Competency
- Information Literacy Competency
- Oral Communication Competency

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