De Anza College Auto Tech
COURSE REQUIREMENTS AND GENERAL INFORMATION

2014-2015
Auto 64HP High Performance Engine Preparation

Instructor
Dave Capitolo (408) 864-8312 or email capitolodave@fhda.edu
Faculty web page http://faculty.deanza.fhda.edu/capitolodave/
Office hours: Mondays and Wednesdays 1:00PM – 6:00PM

Advisories
EWRT 100 and READ 100 (or LART 100), or ESL 172 and 173
Math 212

Courses Description
Precision and performance engine preparation. Includes selection and matching of engine and valve train components for maximum efficiency and output.

Expected Outcomes
1.   Measure and calculate static and effective compression ratios
2.   Evaluate operations necessary to maximize cylinder head airflow
3.   Select camshafts according to effective compression and airflow characteristics
4.   Select intake system components according to calculated airflow requirements
5.   Evaluate and select optimum exhaust system components according to valve timing, displacement, and RPM levels
6.   Perform computer analysis of engine output
7.   Compare fuels and combustion characteristics
8.   Analyze valve train action
9.   Compare engine lubricants and lubricating systems

Learning Outcome
Student will answer correctly, selected questions on the final exam concerning blueprinting operations, engine theory, camshaft design, parts reliability upgrades. These are areas essential to the understanding of performance engines.

Text and Required Materials
1.   Recommended: Lewis, W.G. Automotive Machining and Engine Repair. 2011
2.   Safety glasses for demonstrations

Reading from text and handouts
1. Improving Efficiency
2. Improving Flow Through Ports
3. Reducing Restriction at the Valves
4. Synchronizing Valve Opening and Piston Travel
5. Maximizing Cylinder Pressure
6. Selecting a Camshaft
7. Matching Intake Systems to the Engine
8. Matching Exhaust Systems to the Engine
9. Tuning Performance Engines
10. Project: Prepare a Performance Engine

Assignments and Grading
2. Engine Analyzer exercises --- 15 each
3. Engine Analyzer worksheet -- 25
4. Exam(s) --- 80
5. Final --- 65

The total points earned on tests and engine project assignments are evaluated as follows, *by percentage*:

95-100 A
90-94 A-
87-89 B+
84-86 B
80-83 B-
77-79 C+
70-76 C
67-69 D+
64-66 D
60-63 D-
59 & ↓ F

Per department policy, a minimum of "C" is required in courses applied to certificate or degree programs. Grades are posted on *MyPortal* a few days after the quarter ends

Attendance
Always call in absences. Students are dropped from class on the third absence

Tool Room
Check out references and tools as needed. Do not enter the tool room

Parking
Parking permits for use in designated areas are available in the Administration

Building. Improperly parked cars are subject to citation and/or tow. Do not park in Auto Tech parking lots, even if you drive a show car or motorcycle

Classroom and Lab Conduct
1. Students will be dismissed from class for disruptive behavior per college policy.
2. Cellular phones must remain *off* and put away in the classroom and lab at all times. Personally I find it insulting to have the need to text or use your phone in class, so please don't do it
3. Wear safety glasses in the lab during demonstrations
4. Food and drink containers must be removed from classroom every night, and must never be placed on lab equipment
5. There is one 20-minute break and short breaks as needed
6. Quizzes and homework assignments may only be made-up if student called in prior to the absence, no exceptions

Smoking

As the result of a November 2004 survey of all students and employees, and the work of a district-wide committee, the Foothill-De Anza Community College District Board of Trustees approved a revised no smoking policy on June 20, 2005. In order to provide a safe learning and working environment for students and employees, smoking is prohibited in all indoor and outdoor campus locations, with the exception of designated parking lots.