

**DE ANZA COLLEGE**  
**APPLIED TECHNOLOGIES DIVISION**  
Automotive Technology  
**ENGINE PERFORMANCE PROGRAM**

AUTO 99F

Intermediate Engine Performance Diagnostic Procedures

**I. General Information:**

Instructor: Pete Vernazza  
Classroom Number: E12F  
Spring 2015  
Office: (408) 864-8216  
Tool Room: (408) 864-8768  
Email: [vernazzapete@fhda.edu](mailto:vernazzapete@fhda.edu)  
Faculty website: <http://faculty.deanza.edu/vernazzapete>  
Dates: 5-18-15 through 6-26-15  
Days: Monday through Friday  
Hours: 7:30 AM to 12:20 PM.  
Final Examination Date: 6-26-15  
CRN 00222  
Drop date – <http://deanza.edu/calendar/springdates.html>

For Spring quarter, my office hours are 6:30 am to 7:30 am and 12:20 to 1:20pm Monday through Friday. The location will be in my classroom (E12F) or my office (E13B).

**Description:** Performance tuning of automotive gasoline engines with an emphasis on reference material dealing with repair procedures, specifications, and efficient tune-up procedures. Intermediate level for usage of computer scanners and oscilloscopes. Diagnosing, troubleshooting, and repairing the systems designed for the control of engine temperature.

Student Learning Outcome -

The student will be able to perform a Smog Inspection (Acceleration Simulation Mode), a visual inspection and functional inspection per CA State guidelines.

**II. Course Objectives**

- A. Describe the operation of performance systems and components
- B. Demonstrate skills in diagnostic strategies and tune-up procedures
- C. Develop tune-up procedures to diagnose engine performance problems
- D. Recognize and identify the components that comprise a basic automotive cooling system
- E. Research technical information using various media

**III. Essential Student Materials**

Texts as listed  
Basic tool set and tune-up tool set  
Approved shop clothing, safety shoes, and safety glasses

**IV. Essential College Facilities**

Classroom and automotive technology laboratory

**V. Expanded Description: Content and Form**

- A. Describe the operation of performance systems and components

1. Battery, cranking, and charging systems and components
  2. Ignition systems
  3. Computer systems
  4. Fuel supply systems
  5. Emission control systems
- B. Demonstrate skills in diagnostic strategies and tune-up procedures
1. Equipment capabilities
  2. Equipment operation
  3. Component identification, location
  4. Component testing
  5. Intermediate computer scanner training
  6. Intermediate oscilloscope training
- C. Develop tune-up procedures to diagnose engine performance problems
1. Driveability complaints
  2. Testing procedure organization
  3. Service and repair strategies
- D. Recognize and identify the components that comprise a basic automotive cooling system
1. Theory of operation
  2. Component identification
  3. System testing, servicing, and repairing techniques
- E. Research technical information using various media
1. Reference manuals
  2. Specification manuals
  3. Wiring diagrams
  4. Troubleshooting charts
  5. Electronic retrieval systems

## **VI. Assignments**

- A. Reading from texts and handouts
- B. Lab assignments per expanded National Automotive Technology Education Foundation (NATEF) task list

## **VII. Methods of Instruction**

- Lecture and visual aids
- Discussion of assigned reading
- Discussion and problem solving performed in class
- Quiz and examination review performed in class

## **VIII. Methods of Evaluating Objectives**

- A. Problem-solving quizzes
- B. Objective examinations covering major lecture topics
- C. Objective final examination
- D. Lab assignments per NATEF task list
- E. Participation in accordance with department policy

## **IX. Texts and Supporting References**

- A. Required Texts
  1. Halderman, James D. "Advanced Engine Performance" Prentice Hall, New York, 2009
- B. Supporting Texts and References
  1. All Data electronic information system
  2. Mitchell On-Demand electronic information system

## **X. Classroom and Lab Conduct**

1. Students will be dismissed from class for disruptive behavior per college policy
2. Students *will wear safety glasses*, coveralls, and work shoes for the duration of labs. Wear coveralls properly.

<http://www.deanza.edu/studenthandbook/academic-integrity.html>

## **XI. Grading System**

90 to 100% = A  
80 to 89% = B  
70 to 79% = C  
60 to 69% = D  
59% or lower = F

*Per department policy, a minimum grade of “C” is required. Grades less than “C” in two courses are cause for dismissal from the program.*