Broward Community College
Course Outline

LAST REVIEW: 2005-2006 **NEXT REVIEW:** 2010-2011 **STATUS:** A

COURSE TITLE: Engine Performance

COMMON COURSE NUMBER: AER2898C

CREDIT HOURS: 4

CONTACT HOUR BREAKDOWN
(per 16 week term)

CLOCK HOURS:

(Voc. Course ONLY)

Lecture: **48** Lab: **48**

Clinic: Other: **84**

PREREQISITE(S):

COREQUISITE(S):

PRE/COREQUISITE(S):

COURSE DESCRIPTION: **A** course designed to teach the principles and procedures of engine tune-up and repair, and emission control systems.

UNIT TITLES:

1. Principles of Engine Efficiency
2. Engine Tune-up Procedures

I. Course Overview:

Upon successful completion of this course, the students should be able to Upon successful completion of this course, the students should be able to discuss the principles and procedures of engine tune-up and emission control.

II. Units:

Unit 1. Principles of Engine Efficiency

General Outcome:

1.0 The students should be able to discuss the principles and procedures of engine tune-up and emission control.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

1.1 Describe the operation of the primary and secondary circuits.

1.2 Describe the operation of both carbureted and fuel-injected fuel systems, including turbocharged, supercharged, and normally aspirated systems.

1.3 Discuss the purpose and operation of all emission control related systems.

1.4 Interpret State and Federal emission control regulations.

Unit 2. Engine Tune-up Procedures

General Outcome:

2.0 The students should be able to perform those procedures that ensure efficient engine operation and compliance with environmental protection standards.

Specific Learning Outcomes:

Upon successful completion of this unit, the students should be able to:

2.1 Remove, inspect, adjust, and repair all ignition system components with the aid of shop manuals and factory service bulletins.

2.2 Remove, inspect, adjust, and repair all fuel systems components with the aid of shop manuals and factory service bulletins.

2.3 Use an electronic engine analyzer, shop manuals, and factory service bulletins to analyze engine performance.

2.4 Use internal and external diagnostic devices, shop manuals, and factory service bulletins to diagnose malfunctions in the Hall Effect System, High Energy Ignition, Electronic Spark Timing, Computer Command Control, and Distributorless Ignition System.

2.5 Use shop manuals and factory service bulletins to correct malfunctions by repairing or replacing Hall Effect, H.E.I., E.S.T., C.C.C. and Distributorless Ignition Components.

2.6 Perform emissions tests using a 5-gas analyzer. Explain the IM-240 federal emission test.