El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Automotive Technology**
COURSE RUBRIC AND NUMBER	**AUMT 2317**
COURSE TITLE	**Automotive Engine Performance Analysis I**
COURSE CREDIT HOURS	**3 2 : 4** **Credits Lec Lab**

I. Catalog Description

Instructs in theory, operation, diagnosis, of drivability concerns, and repair ignition, and fuel delivery systems. Teaches the use of current engine performance diagnostic equipment. May be taught with manufacturer specific instructions. **(2:4). Lab fee.**

II. Course Objectives

A. Unit I. Overview of Engine Performance
1. Comply with personal, interpersonal, and environmental safety practices associated with clothing, eye protection, hand tools, and power equipment plus the handling, storage, and disposal of chemicals in accordance with local, state, and federal safety and environmental regulations.
2. Use OSHA approved fuel handling equipment while servicing or repairing fuel system components.
3. Properly use and handle different tools and equipment commonly used in diagnosing and repairing engine performance problems.
4. Define and explain theoretical principles as they relate to the diagnosis and repair procedures commonly applied in engine performance.

B. Unit II. Basic Multi-meter Use and General Engine Condition Diagnosis
1. Explain the proper use of a multi-meter when checking voltage, resistance, and amperage.
2. Identify and use the appropriate tools and equipment when evaluating engine conditions.
3. Diagnose basic engine operating problems related to compression, air and fuel delivery, ignition spark, and the overall mechanical condition of the engine.
4. Follow the appropriate steps used in a strategy-based diagnostic procedure when solving engine performance problems.
5. Properly use and interpret manufacture specifications and procedures.
6. Identify the different intake and exhaust system designs and components commonly used on four-cycle gasoline engines.

C. Unit III Computer Input Sensors and Actuators
1. Locate and use data that identifies sensor and actuator name, type, purpose, location, and test procedure.
2. Read and interpret wiring diagram schematics and identify wire purpose and location on sensors and actuators.
3. Test input sensors and actuators according to manufacturer's specifications.

4. Properly use and interpret scan-tool data when diagnosing engine performance problems.
5. Explain the difference between On Board Diagnosis I (OBD I) and On Board Diagnosis II (OBD II).

D. Unit IV. Electronic Fuel System Service and Repair
1. Identify the different electronic fuel systems and components.
2. Explain the diagnostic procedures commonly used to determine injector condition.
3. Explain the operational principles of the different fuel injection systems.
4. Perform fuel injector cleaning procedures on vehicles as recommended by the manufacturer(s)
5. Service and/or replace related fuel injections components as recommended by the manufacture(s).

E. Unit V. Ignition Systems
1. Name and identify the different ignition system components found on both conventional and electronic systems.
2. Locate ignition system components on cars and light trucks with the use of reference materials and electrical schematics and diagrams.
3. Identify and fix common electronic ignition problems.
4. Replace ignition components according to manufacturer's specifications.

III. THECB Learning Outcomes (WECM)

1. Utilize appropriate safety procedures.
2. Explain engine dynamics.
3. Diagnose and repair ignition and fuel delivery systems.
4. Use current engine performance diagnostic equipment.

IV. Evaluation

A. Grading Criteria
Unit exams will count 60% toward the final grade.
Unit lab exams will count 40% toward the final grade.

B. Grading Scale
90 to 100 = A
80 to 89 = B
70 to 79 = C
60 to 69 = D
Below 60 = F

C. Cheating will not be permitted. Any person caught cheating will receive a grade of zero for that exam.

V. Disability Statement (Americans with Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.