Automotive Electrical and Engine Performance - 9th edition
Ch33: Narrow and Wide-Band Oxygen Sensors
Lesson Plan

CHAPTER SUMMARY:

1. Oxygen Sensors, PCM Uses of the Oxygen Sensor, and Oxygen Sensor Diagnosis
2. Post-Catalytic Converter Oxygen Sensor Testing, and Wide-Band Oxygen Sensors
3. Dual Cell Planar Wide-Band Sensor Operation, and Dual Cell Diagnosis
4. Single Cell Wide-Band Oxygen Sensors, and Oxygen Sensor-Related Diagnostic Trouble Codes
5. Fuel Trim and Fuel Trim Operation

OBJECTIVES:

1. Discuss how O2 sensors work.
2. Discuss PCM uses of the oxygen sensor.
3. Discuss oxygen sensor diagnosis.
4. Discuss post-catalytic converter O2 testing.
5. Explain the operation of wide-band oxygen sensors.
6. Describe dual cell planar wide-band sensor operation.
7. Discuss dual cell diagnosis.
8. Describe single cell wide-band oxygen sensors.
9. Interpret oxygen sensor-related diagnostic trouble codes.
10. Discuss PCM use of fuel trim to maintain stoichiometric fuel efficiency.
11. Describe the operation of short-term and long-term fuel trim.

RESOURCES: (All resources may be found at jameshalderman.com)

1. Task Sheet: Oxygen Sensor Diagnosis
2. Task Sheet: Fuel Trim Diagnosis
3. Crossword Puzzle and Word Search
4. Videos: (A8) Engine Performance Videos
5. Animations: (A8) Engine Performance Animations

ACTIVITIES:

1. Task Sheet: Oxygen Sensor Diagnosis
2. Task Sheet: Fuel Trim Diagnosis
3. Crossword Puzzle and Word Search
4. Chapter PowerPoint
5. Crossword Puzzle and Word Search

ASSIGNMENTS:

1. Chapter crossword and word search puzzles from the website.
2. Complete end of chapter quiz from the textbook.
3. Complete multiple choice and short answer quizzes downloaded from the website.

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CLASS DISCUSSION:

1. Review and group discussion chapter Frequently Asked Questions and Tech Tips sections.
2. Ten (10) question end of Chapter Quiz.
3. Five (5) end of chapter Review Question for class discussion.

NOTES AND EVALUATION:
