**Advanced Engine Performance Diagnosis 8th Edition**

**Chapter 11 – Battery, Starting and Charging Diagnosis, and Stop-Start**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. Batteries, Battery Construction Types, Battery Testing, and Battery Drain Test

2. Battery Charging, Battery Registration, Cranking Systems, and Stop-Start Systems

3. Cranking Circuit Voltage Drop Testing and Charging Circuit

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**OBJECTIVES:**

1. Describe the purpose, function, and types of batteries.

2. Describe the types of battery construction.

3. Describe methods for checking the condition of a battery.

4. Describe how to perform a battery drain test and isolate a problem.

5. Explain battery charging and coding.

6. Explain the purpose of battery registration.

7. Describe the components and operation of cranking systems.

8. Describe the purpose and operation of stop-start systems.

9. List the steps necessary to perform a voltage-drop test.

10. Explain how to test the charging circuit. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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

1. Task Sheet: Alternator Rotor Testing

2. Task Sheet: Alternator Stator Testing

3. Task Sheet: Battery and Capacity Tests

4. Task Sheet: Battery Specifications

5. Task Sheet: Charging System Diagnosis

6. Task Sheet: Charging Circuit Voltage Drop

7. Task Sheet: Starting and Charging System

8. Task Sheet: Starter Voltage Drop/Current Draw Tests

9. Chapter PowerPoint

10. Crossword and Word Search Puzzles

11. Videos: (A6) Battery and Starting System Diagnosis and Repair

12. Videos: (A6) Charging System Diagnosis and Repair

13. Videos (A8) Ignition System Diagnosis and Repair

14. Animations: (A6) Battery and Starting System Diagnosis and Repair

15. Animations: (A6) Charging System Diagnosis and Repair

16. Animations: (A8) Ignition System Diagnosis and Repair

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**ACTIVITIES:**

1. Task Sheet: Alternator Rotor Testing

2. Task Sheet: Alternator Stator Testing

3. Task Sheet: Battery and Capacity Tests

4. Task Sheet: Battery Specifications

5. Task Sheet: Charging System Diagnosis

6. Task Sheet: Charging Circuit Voltage Drop

7. Task Sheet: Starting and Charging System

8. Task Sheet: Starter Voltage Drop/Current Draw Tests

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**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. Review and group discussion of the five (5) chapter Review Questions.

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**NOTES AND EVALUATION:**

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