**Electric & Hybrid Electric Vehicles 1st Edition**

**Chapter 8 – Advanced AC and DC Electricity**

**Lesson Plan**

**CHAPTER SUMMARY:**

1. DC Electricity, AC Electricity, Power Output (Watts), Capacitors, and Magnetic Force

2. Motor Control, EV and HEV Electrical Measurements, and EV and HEV Module Communications

3. Module Reprogramming

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**OBJECTIVES:**

1. Describe DC current and its generation process.

2. Describe AC current and its generation process.

3. Describe the process to calculate the formulas for watts and power.

4. Explain the purpose of a capacitor.

5. Describe the differences between a milliohm, ohm, and megohm.

6. Explain how to perform a loss of isolation test.

7. Explain electromagnetism and the electric motor principle.

8. Describe the operation of CAN bus communication.

9. Explain the process of programming a module.

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**RESOURCES:** [(All resources may be found at jameshalderman.com)](https://jameshalderman.com/)

1. Task Sheet: Milliohm Meter Usage

2. Task Sheet: Meg-Ohm Meter Usage

3. Chapter PowerPoint

4. [Crossword Puzzle and Word Search (L3)](https://jameshalderman.com/l3_puzzles_lib_page/)

5. [Crossword Puzzle and Word Search (A6)](https://jameshalderman.com/a6_puzzles_lib_page/)

6. [Videos: (L3) Light Duty Hybrid Electric](https://jameshalderman.com/l3_vid_lib_page/)

7. [Videos: (A6) Electrical/Electronic Systems](https://jameshalderman.com/a6_vid_lib_page/)

8. [Animations: (L3) Light Duty Hybrid Electric](https://jameshalderman.com/l3_anim_lib_page/)

9. [Animations: (A6) Electrical/Electronic Systems](https://jameshalderman.com/a6_anim_lib_page/)

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**ACTIVITIES:**

1. Task Sheet: Milliohm Meter Usage

2. Task Sheet: Meg-Ohm Meter Usage

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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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