

Electric & Hybrid Electric Vehicles 1st Edition

Chapter 18 – EV and HEV Driver Assist Systems

Lesson Plan



CHAPTER SUMMARY:

1. Advanced Driver Assist Systems, Human-Machine Interface (HMI), and Blind Spot Monitor
2. Parking-Assist Systems, Lane Departure Warning, and Lane Keep Assist
3. Adaptive Cruise Control, Rear Cross-Traffic Warning (RCTW), and Automatic Emergency Braking
4. Pre-Collision System, Cameras, LiDAR Systems, and Driver Assist Diagnosis
5. Camera and Radar Sensor Calibration and Autonomous Vehicle Operation
6. Levels of Automation, Artificial Intelligence (AI) and Dedicated Short-Range Communications (DSRC)

OBJECTIVES:



1. Describe the purpose and function of advanced driver-assist systems.
2. Discuss blind-spot monitors and parking assist, as well as self-parking systems.
3. Explain lane departure warning and lane-keep assist systems.
4. Describe how adaptive cruise control systems work.
5. Discuss rear cross-traffic warning system operation.
6. Explain automatic emergency braking and pre-collision systems.
7. Describe the diagnostic and calibration procedures for advanced driver assist systems.

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



1. Task Sheet: Advanced Driver Assist Systems
2. Task Sheet: ADAS Calibration
3. Chapter PowerPoint
4. [Crossword Puzzle and Word Search \(A6\)](#)
5. [Videos: \(A6\) Electrical/Electronic Systems](#)
6. [Animations: \(A6\) Electrical/Electronic Systems](#)

ACTIVITIES:



1. Task Sheet: Advanced Driver Assist Systems
2. Task Sheet: ADAS Calibration

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.

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](#).

NOTES AND EVALUATION:

