

Automotive Technology 6th Edition

Chapter 61 – Autonomous Vehicles

Lesson Plan



CHAPTER SUMMARY:

1. Need for automation and levels of automation
 2. Computer power, radar systems, and cameras
 3. LiDAR systems, ultrasound, and dedicated short-range communication
 4. Multi-domain controllers and actuators
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OBJECTIVES:

1. Outline the benefits and concerns regarding autonomous vehicles.
 2. Discuss the levels of autonomous vehicle automation and the computer power needed.
 3. Explain the different types of sensors used in autonomous vehicles.
 4. Discuss the importance having communications between vehicles and from vehicles to the infrastructure.
 5. Explain how cameras can be used in autonomous vehicles.
 6. Explain the purpose of the multi-domain controller and describe how it works.
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RESOURCES: (All resources may be found at <http://www.jameshalderman.com>)

1. **Task Sheet ASE (A6-G-4) P-1:** Advance Driver Assist System Sensors
 2. **Task Sheet:** Automated and Connected Vehicle ID
 3. Chapter PowerPoint
 4. Chapter Crossword Puzzle and Word Search
 5. Animations: Airbag - Supplemental Restraint System and Safety Belt Forces
 6. Videos: Self Driving Car How it Works Tech 10 Systems (time 1:14)
 7. Videos: Qamcom Autonomous drive using radar, camera and lidar (time 1:57)
 8. Videos: Autonomous car/self-driving car – How it works! Animation (time 3:11)
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ACTIVITIES:

1. **Task Sheet ASE (A6-G-4) P-1:** Have students complete Advance Driver Assist System Sensors Task Sheet.
 2. **Task Sheet:** Have students complete Automated and Connected Vehicle ID Task Sheet.
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ASSIGNMENTS:

1. Chapter crossword and word search puzzles.
 2. Complete end of chapter 10 question quiz.
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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:
