

# Automotive Technology 6<sup>th</sup> Edition

## Chapter 43 – Oscilloscopes and Graphing Multimeters

### Lesson Plan



#### **CHAPTER SUMMARY:**

1. Types of oscilloscopes
  2. Scope setup and adjustment
  3. AC voltage, DC and AC coupling, pulse trains, and number of channels
  4. Triggers, graphing multimeter, and graphing scan tools
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#### **OBJECTIVES:**

1. Compare the different types of oscilloscopes and explain how to setup and adjust oscilloscopes.
  2. Explain time base and volts per division settings.
  3. Describe the use of DC or AC coupling when displaying waveforms on an oscilloscope.
  4. Explain how to interpret pulse trains, channels, and triggers on a scope.
  5. Explain how to use a scope and discuss graphing multimeters and scan tools.
  6. This chapter will help you prepare for the ASE electrical/electronic systems (A6) certification test content area “A” (General electrical/ electronic system diagnosis).
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**RESOURCES:** (All resources may be found at <http://www.jameshalderman.com>)

1. Task Sheet ASE (A6-A-11) P-2, (A8-B-7) P-2: Oscilloscope
  2. Chapter PowerPoint
  3. Chapter Crossword Puzzle and Word Search
  4. Animations: Scope Display and Scope Display AC Ripple
  5. Videos: Electronic waveforms (time 48:02) and Testing with an Oscilloscope (time 7:18)
  6. Videos: Duty cycle and wiring diagrams (time 3:57)
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#### **ACTIVITIES:**

1. Task Sheet ASE (A6-A-11) P-2, (A8-B-7) P-2: Have students complete Oscilloscope 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:**

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