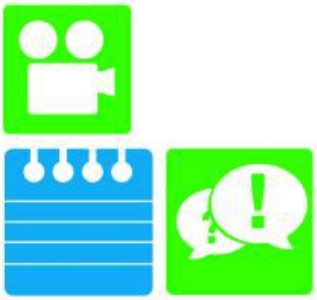
Automotive Chassis Systems 7e
Chapter 31 Electric Power Steering
Opening Your Class

KEY ELEMENT	EXAMPLES
Introduce Content	This course or class covers operation and service of **Automotive Chassis Systems.** It correlates material to task lists specified by ASE and NATEF
Motivate Learners	Explain how the knowledge of how something works translates into the ability to use that knowledge to figure why the engine does not work correctly and how this saves diagnosis time, which translates into more money.
State the learning objectives for the chapter or course you are about to cover and explain this is what they should be able to do as a result of attending this session or class.	Explain learning objectives to students as listed below: 1. Describe the purpose and function of electric power steering system. 2. Discuss the various types of electric power steering systems. 3. Explain how electric power steering systems operate. 4. Discuss how to diagnose system faults. 5. Explain service procedures for electric power steering systems. **This chapter will help prepare for ASE Suspension and Steering (A4) certification test content area "A" (Steering System Diagnosis and Repair).**
Establish the Mood or Climate	Provide a ***WELCOME,*** Avoid put downs and bad jokes.
Complete Essentials	Restrooms, breaks, registration, tests, etc.
Clarify and Establish Knowledge Base	Do a round robin of the class by going around the room and having each student give their backgrounds, years of experience, family, hobbies, career goals, or anything they want to share.

NOTE: This lesson plan is based on Automotive Chassis Systems 7th Edition Chapter Images found on Jim's web site @ www.jameshalderman.com

LINK CHP 14:

ICONS	Chapter 31 Electric Power Steering
	**1. SLIDE 1 CH31 ELECTRIC POWER STEERING**
	**Check for VIDEOS & ANIMATIONS @ http://www.jameshalderman.com/** **WEB SITE IS CONSTANTLY UPDATED** **Steering System (62 Links)**
	**At the beginning of this class, you can download the crossword puzzle & Word Search from the links below to familiarize your class with the terms in this chapter & then discuss them**
	
	**2. SLIDE 2 EXPLAIN FIGURE 31.1** A rack mounted electric power steering gear on a Lexus RX 400 h taken from underneath the vehicle **3. SLIDE 3 EXPLAIN FIGURE 31.2** Honda electric power steering unit cutaway, which is an example of pinion-mounted electric power steering
	**EPS Torque Sensor (View) (Download)** **Electronic Power Steering (View) (Download)**
	**DEMONSTRATION: Show examples of electric power steering (EPS) assemblies FIGURE 31-1**
	**Become familiar with servicing procedures for electric power steering units. Many vehicles now include them, & more vehicles will be including them in near future.**
	**4. SLIDE 4 EXPLAIN FIGURE 31.3** A Toyota Prius EPS assembly (Courtesy of Tony Martin). **5. SLIDE 5 EXPLAIN FIGURE 31.4** The torque sensor converts the torque the driver is applying to the steering wheel into a voltage signal.

ICONS	Chapter 31 Electric Power Steering
	**EPS Torque Sensor (View) (Download)** **Electronic Power Steering (View) (Download)**
	6. **SLIDE 6 EXPLAIN FIGURE 31.5** A cross-sectional view of a Honda electric power steering (EPS) gear showing coils 1 and 2 of the torque sensor.
	7. **SLIDE 7 EXPLAIN FIGURE 31.6** The power steering control module (PSCM) is attached to the motor of the electric power steering assembly. 8. **SLIDE 8 EXPLAIN FIGURE 31.7** Schematic showing the electric power steering and the torque/position sensor. 9. **SLIDE 9 EXPLAIN FIGURE 31.8** The blown fuse is the yellow 60-amp fuse next to the terminal at the top. 10. **SLIDE 10 EXPLAIN FIGURE 31.9** An electro-hydraulic power steering assembly on a Chevrolet hybrid pickup truck.
	**DEMONSTRATION: Show example of a scan tool and explain how it works to diagnose electric power steering**
 	**ON-VEHICLE NATEF TASK Diagnose, test and diagnose components of electronically controlled steering systems using scan tool**
 	**ON-VEHICLE NATEF TASK Inspect and test electric power assist steering.**