

## STEERING AND SUSPENSION

### Course Length

1.5 to 3.0 hours

### Course Description

This course introduces learners to steering and suspension systems, their components, and the important types of suspension and steering systems.

### Course Topics

#### ***Suspension Systems***

- ◆ Independent and non-independent suspension systems
- ◆ Components of the suspension system
- ◆ Types of springs
- ◆ Types of suspension systems

#### ***Steering Systems***

- ◆ Steering system and its components
- ◆ Types of steering systems
- ◆ Power steering systems

### Course Objectives

#### ***In this course, users will learn to:***

- ◆ Describe the function of the suspension system
- ◆ Distinguish between independent and non-independent suspension systems
- ◆ Describe the different types of suspension systems
- ◆ Describe the steering system
- ◆ Identify the different components of a steering system
- ◆ Describe different types of steering systems
- ◆ Describe the components of power and electric power steering systems

### Course Features

- ◆ Global navigation
- ◆ Practice pages with multiple choice, drag 'n drop, true/false
- ◆ Interactive and animated content pages
- ◆ Glossary and resource links
- ◆ Slide shows
- ◆ Final Assessment



# STEERING AND SUSPENSION

The image displays three overlapping windows from the CTI's *Steering and Suspension* courseware:

- Top Window: "Steering and Suspension - Microsoft Internet Explorer"**
  - Page Title: STEERING AND SUSPENSION
  - Page Number: 16 of 41
  - Section: Springs | Spring Types
  - Text: "The common types of springs used in vehicle suspension systems are listed here. Click each type of spring to learn about it."
  - Spring Types List:
    - Coil Spring
    - Leaf Spring** (selected)
    - Air Spring
    - Torsion Bar
  - Diagram: A top-down view of a leaf spring assembly with labels:
    - 1 Loops
    - 2 U-Bolts
  - Text: "Leaf Spring: Leaf springs are made of steel. They can be single or multi-leaf. The spring curve flattens as the spring is compressed and each leaf below the main leaf arches further. The main leaf is the longest and the flattest strip. It has eyes (loops) at each end for the purpose of attachment to the vehicle. One end of the spring is attached to a hanger on the frame and the other end is attached to a movable shackles or link that allows the main leaf to expand in length when the vehicle hits a bump or dip. Most vehicles have leaf springs mounted at each end of the rear axle. This design controls front/rear, lateral, braking and axle torque loads. The vehicle's axle is mounted on the leaf spring with a centering stud and U-bolts. The stud passes through all the leaves to keep them aligned. The U-bolts fasten the leaf spring to the axle."
  - Instruction: "Click the forward arrow to continue."
- Middle Window: "Glossary - Microsoft Internet Explorer"**
  - Section: GLOSSARY
  - Alphabetical Index: A B C D E F G H I J K L
  - Current Section: **G**
  - Terms listed:
    - Galvanized Steel
    - Gap Insurance
    - Gas Filled Shock Absorbers
    - Gear Ratio
    - Generator
    - Glow Plug
    - Glow Plug Resistance-Balance Test
    - Governor
    - Grabbing Brakes
    - Grade Markings
    - Gray Market Vehicle
    - Grease Gun
    - Grease Job
    - Grease Rack
    - Grease Seal
    - Gross HP
    - Group Injection
    - Growler
    - HC
    - HC Readings
    - Hall Effect
    - Halogen Headlamp
  - Current Term: **Generator**
    - Definition: "A device that converts either AC or DC electrical energy into mechanical energy in the 1 standard terminal." (Note: text is partially obscured)
    - Term: **Glow Plug**
      - Definition: "A heating element that helps start a diesel in cold weather"
    - Term: **Glow Plug Resistance-Balance Test**
      - Definition: "A diagnostic procedure used to determine whether all cylinders equipped diesel engine are firing."
    - Term: **Governor**
      - Definition: "A device used to control an engine's speed."
    - Term: **Grabbing Brakes**
      - Definition: "Abrupt, hard application of brakes when pedal is only lightly depressed"
    - Term: **Grade Markings**
      - Definition: "Lines on bolt head, indicating tensile strength."
    - Term: **Gray Market Vehicle**
      - Definition: "Cars that have been imported into the country but not through the normal channels. They may not meet American safety and emission standards and may have significantly lower values than cars imported through the normal channels."
    - Term: **Grease Gun**
      - Definition: "Tool used to inject lubricating grease, under pressure, into a bearing or other part."
  - Instruction: "Close this window to return to the course."
- Bottom Window: "Steering and Suspension - Microsoft Internet Explorer"**
  - Page Number: 11 of 41
  - Section: Practice
  - Text: "Identify the suspension system components in the provided image. Click and drag each label to its appropriate position on the suspension system."
  - Diagram: A cross-section of a suspension system with labels:
    - Control Arms
    - Shock Absorber
    - Sway Bar
    - Upper Ball Joint
    - Lower Ball Joint
  - Instruction: "Click Check to see the correct answers."
  - Buttons: CHECK RE-LEARN RESET
  - Instruction: "Click the forward arrow to continue."

A selection of pages from CTI's *Steering and Suspension* courseware, featuring global navigation, instructional graphics, and glossary of terms