

Suspension System Basics

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The THORS *Suspension System Basics* course explains the various components of the suspension system in a vehicle. The principles behind how the suspension system operates and interacts with other systems are also covered. This course provides an interactive learning experience on the different types of suspension systems used in vehicles.

Credit Hours **2.5**

Learning Objectives

- Identify each component that makes up a suspension system.
- Explain the purpose of each component in a suspension system.
- Explain the principles that make a suspension system function.
- Understand the various operating variables and their importance in a suspension system.
- Understand how other vehicle systems interact with the suspension system.
- Summarize the various types of suspension systems and how each one functions.

Table of Contents

I. Suspension System Components

- Tires
- Wheels
- Steering Knuckles
- Control Arms
- Shock Absorbers
- Springs
 - Coil Springs
 - Leaf Springs
 - Torsion Bar
 - Air Springs
- Bump Stop
- Anti-Roll Bar
- Track Bar
- Bushings
- Ball Joints
 - Ball Joint Attachments
 - Ball Joint Architecture
 - Ball Joint Locations

II. Suspension System Principles

- Gross Vehicle Weight
- Suspension System Operating Variables
 - Camber
 - Caster
 - Kingpin Inclination (KPI)
 - Scrub Radius
 - Toe
- Other System Interactions
 - Chassis System
 - Braking System
 - Steering System
 - Powertrain System

III. Suspension System Types

- Independent Suspension System
 - MacPherson Suspension System
 - Double A-Arm Suspension System
 - SLA Suspension System
 - Multi-Link Suspension System
 - Trailing Arm Suspension System
- Dependent Suspension System
 - Solid Front Axle
 - Solid Rear Axle

