

Herbert Morrison Technical
Industrial Technology Department
Automotive Technology

Course Outline

Academic Year: 2020-2021
Grade: 11
Teacher: Loren Phipps

Oct-Nov	Section	Content	Suggested Assessment
	<p>Core Section 1 Fundamentals of Suspension system</p>	<p>What are the two major types of suspension?</p> <p>(1) Conventional Suspension (2) Macpherson Strut Suspension</p> <p>Automotive Suspension Springs (1) Coil Spring (2) Torsion Bar (3) Leaf Spring (4) Air Spring</p> <p>Function of a Suspension System</p> <ul style="list-style-type: none"> ❖ Prevent excessive body squat when accelerating or heavily loaded. ❖ Prevents excessive body dive when braking. ❖ Allows the front wheels to turn left or right for steering. ❖ Help keep the wheels in correct alignment. <p>Technical Terms</p> <p>(1) Spring Compressor (2) Stabilizer bar bushings (3) Height control sensor (4) Automatic level control (5) Curb height (6) Shock absorber</p>	<ul style="list-style-type: none"> ➤ Quiz ➤ Presentation Written/Oral ➤ Class Activity ➤ Research ➤ Assignments

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Oct-Nov	Section	Content	Suggested Assessment
		<p>(7) Load carrying ball joint (8) Strut rod</p> <p>Independent and Non-independent Suspension</p> <p>Oversteer: Rear tires try to skid around sideways in a sharp or hard turn.</p> <p>Lateral Acceleration: Amount of side force a vehicle can achieve before its tires loose traction.</p>	

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Dec-Jan	Core Steering Systems Fundamental's	<p>Identify the major parts of steering system.</p> <p>Explain the operating principles of steering system.</p> <p>Compare the differences between a linkage steering and a rack and pinion steering system.</p> <p>Explain the operation of four-wheel steering system.</p> <p>Functions of a steering system</p> <ol style="list-style-type: none"> (1) Transmit road feel (2) Provide precise control of the front-wheel direction and sometimes the rear-wheel direction. (3) Allow for Suspension action (4) Maintain the correct amount of effort needed to turn the wheels. <ul style="list-style-type: none"> ❖ Basic Steering Systems ❖ Basic Linkage Steering <ol style="list-style-type: none"> (1) Steering Wheel (2) Steering Shaft (3) Steering Column (4) Steering Linkage <p>Types of steering systems</p> <p>Rock and Pinion</p> <p>Worm Gear</p> <p>Terms: Power Steering Pump</p> <p style="text-align: center;">Pressure relief Valve</p>	<ul style="list-style-type: none"> ➤ Quiz ➤ Class Activity ➤ Presentation Written/Oral ➤ Research ➤ Assignment
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		<p>Power Steering Hose and Reservoir</p> <p>Integral-Piston Power Steering System</p>	
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Feb-Mar	Core Perform routine inspection of brake system components.	<p>Service disc/hydraulic braking system</p> <p>Describe basic procedures for servicing a master cylinder and a brake booster.</p> <p>Explain how to service a disc brake</p> <p>Explain how to service a drum brake.</p> <p>Brake System Problem Diagnosis:</p> <ol style="list-style-type: none"> (1) Brake Vibration (2) Grabbing Brake (3) Spongy Brake Pedal (4) Dropping Brake Pedal (5) Pulling Brakes (6) Excessive Brake Pedal Effort <p>Braking System inspection</p> <p>Checking Brake Fluid</p> <p>Checking parking Brakes</p> <p>How to bleed brake system</p> <p>Difference Between manual And pressure bleeding</p> <p>Flushing brake System</p> <p>Identify and label brake components</p>	<ul style="list-style-type: none"> ➤ Quiz ➤ Presentation Written/Oral ➤ Research ➤ Class Activity
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Apr	Core Wheel Alignment	<p>Defining Wheel Alignment This refers to the process of measuring and correcting various angles formed by the front and rear wheels, spindles and steering arms.</p> <p>Technical Terms: Caster Camber Road Crown Steering Axis Wheel tracking Dog Tracking Curb Height Tire scrubbing Runout Two Wheel Alignment Four Wheel Alignment</p>	<ul style="list-style-type: none"> ➤ Quiz ➤ Research ➤ Presentation Written/Oral
May		Revision	<ul style="list-style-type: none"> ➤ Quiz ➤ Quiz
Jun		Exam	Exam