

TRANSPORTATION II

Content Standard A: Automotive Technology Skills: Students will develop the skills and knowledge required to service automobiles

Performance Standard 4: demonstrate a working knowledge of the basic process and procedures relating to automotive maintenance schedule

<i>Unit</i>	<i>Learning Objectives</i>	<i>Sample Activities</i>	<i>Assessment Strategies</i>	<i>Resources</i>
<p><u>Unit 1:</u> Review of previous years' learning</p>	<p>1. Students will review various topic covered in Transportation I:</p> <ul style="list-style-type: none"> ❖ Lubrication ❖ Tune-up ❖ Engine Performance ❖ Cooling System ❖ Emissions ❖ Exhaust ❖ Basic Electricity 	<ul style="list-style-type: none"> ❖ Class discussions with teacher guidance 	<ul style="list-style-type: none"> ❖ Written exam ❖ Demonstrate clear understanding of main points of learning objectives from previous year using school wide rubric 	<ul style="list-style-type: none"> ❖ Transportation I tests and quizzes ❖ Text: Automotive Excellence Volume I ❖ Transportation I curricula

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Performance Standard 3: comply with personal and environmental safety practices associated with clothing, eye protection, hand tools, lifting equipment, power equipment, proper ventilation and the handling storage and disposal of chemicals/materials in accordance with local, state and federal environmental regulations

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<u>Unit 2: Safety</u>	1. Students will review general shop, equipment and procedural safety learned in Transportation I	<ul style="list-style-type: none"> ❖ Text reading assignments ❖ View safety video/DVD ❖ Teacher input ❖ Class discussion ❖ Teacher demonstrations 	<ul style="list-style-type: none"> ❖ Text, video/DVD, teacher worksheets and quizzes ❖ ASE (Automotive Service & Excellence) type quiz ❖ Demonstration of student understanding as evaluated through the use of department and school wide rubrics ❖ ASE written quiz meeting NATEF (National Automotive Technicians Education Foundation) standards 	<ul style="list-style-type: none"> ❖ Text: Automotive Excellence Volume I ❖ Transportation I worksheets and quizzes ❖ Video/DVD

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Performance Standard 4: demonstrate a working knowledge of the basic process and procedures relating to automotive maintenance schedule
Performance Standard 5: demonstrate a working knowledge of how pneumatic hydraulic, mechanical, chemical and electrical energy are used

<i>Unit</i>	<i>Learning Objectives</i>	<i>Sample Activities</i>	<i>Assessment Strategies</i>	<i>Resources</i>
<u>Unit 3:</u> Charging System	1. Students will identify parts and describe overall charging system operation: <ul style="list-style-type: none"> ❖ Alternator/Generator ❖ Voltage Regulator ❖ Wiring/Cables ❖ Battery ❖ Ignition switch 2. Students will be competent in diagnosing, repair and maintenance of charging systems	<ul style="list-style-type: none"> ❖ Text reading and written assignments ❖ View Video/DVD ❖ Class discussion with teacher contribution ❖ Tear down, identify and reassemble an alternator ❖ Guided practice ❖ Teacher demonstrations ❖ Practical application: Lab time (Use of automotive shop facility to demonstrate practical application of learned objectives by students through the use of various vehicles and automotive equipment including student and staff owned vehicles) 	<ul style="list-style-type: none"> ❖ Worksheets using school wide rubric ❖ Teacher evaluation of practical application using department rubric ❖ ASE quiz meeting NATEF standards 	<ul style="list-style-type: none"> ❖ Text: Automotive Excellence Volume I ❖ Video/DVD ❖ Practice alternators ❖ WHS Automotive Technology Lab

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<i>Unit</i>	<i>Learning Objectives</i>	<i>Sample Activities</i>	<i>Assessment Strategies</i>	<i>Resources</i>
<u>Unit 4: Starting System</u>	1. Students will identify parts and describe overall starting system operation: <ul style="list-style-type: none"> ❖ Starter motor ❖ Battery ❖ Wiring/Cables ❖ Ignition switch ❖ Flywheel 2. Students will be competent in diagnosing, repair and maintenance of starting systems	<ul style="list-style-type: none"> ❖ Text reading and written assignments ❖ View Video/DVD ❖ Class discussions with teacher contribution ❖ Teacher demonstrations ❖ Tear down, identify and reassemble a starter motor ❖ Guided practice ❖ Practical application: Lab time 	<ul style="list-style-type: none"> ❖ Worksheets using school wide rubric ❖ Teacher evaluation of practical application using department rubric ❖ ASE quiz meeting NATEF standards 	<ul style="list-style-type: none"> ❖ Text: Automotive Excellence Volume I ❖ Video/DVD ❖ Practice starter motors ❖ WHS Automotive Technology Lab

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<u>Unit 5:</u> Electronic Ignition System	<p>1. Students will identify parts and describe overall electronic ignition system operation:</p> <ul style="list-style-type: none"> ❖ Distributor ❖ Ignition control module ❖ Distributor cap and rotor ❖ Spark plugs and spark plug wires ❖ PCM (Power Train Control Module) <p>2. Students will be competent in diagnosing, repair and maintenance of electronic ignition systems</p>	<ul style="list-style-type: none"> ❖ Text reading and written assignments ❖ View video/DVD ❖ Class discussions with teacher contribution ❖ Teacher demonstrations ❖ Guided practice ❖ Practical application: Lab time 	<ul style="list-style-type: none"> ❖ Worksheets using school wide rubric ❖ Teacher evaluation of practical application using department rubric ❖ ASE quiz meeting NATEF standards 	<ul style="list-style-type: none"> ❖ Text: Automotive Excellence Volume I ❖ Video/DVD ❖ WHS Automotive Technology Lab

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<u>Unit 6:</u> Automotive Emissions Systems	1. Students will identify parts and describe the overall emission system operation: <ul style="list-style-type: none"> ❖ Exhaust components ❖ Engine sensors ❖ Engine actuators ❖ PCM (Power Train Control Module) 2. Students will be competent in diagnosing, repair and maintenance of emission systems	<ul style="list-style-type: none"> ❖ Text reading and written assignments ❖ Class discussions with teacher contribution ❖ Use computer search skills to create notes for class discussion ❖ Guided practice ❖ View video/DVD ❖ Practical application: Lab time 	<ul style="list-style-type: none"> ❖ Quiz and worksheet using school wide rubric ❖ Teacher evaluation of practical application using department rubric ❖ ASE quiz meeting NATEF standards 	<ul style="list-style-type: none"> ❖ Text: Automotive Excellence Volume I ❖ Video/DVD ❖ Internet access websites (i.e.): www.howstuffworks.com ❖ WHS Automotive Technology Lab

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<u>Unit 7:</u> Automotive Brake Systems	1. Students will identify parts and describe overall brake system operation: <ul style="list-style-type: none"> ❖ Disc brakes ❖ Drum brakes ❖ Hydraulic brakes ❖ ABS (Anti-Lock braking system) ❖ Brake lathes ❖ Brake Machining 2. Students will be competent in diagnosing, repair and maintenance of braking systems	<ul style="list-style-type: none"> ❖ Text reading and written assignments ❖ Class discussions with teacher contributions ❖ View video/DVD ❖ Teacher demonstration ❖ Guided practice ❖ Practical application: Lab time 	<ul style="list-style-type: none"> ❖ Quiz and worksheet using school wide rubric ❖ Teacher evaluation of practical application using department rubric ❖ ASE quiz meeting NATEF standards 	<ul style="list-style-type: none"> ❖ Text: Automotive Excellence Volume I ❖ Video/DVD ❖ WHS Automotive Technology Lab

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Performance Standard 6: identify, compare and contrast with traditional and alternative fuels, systems and technologies

Content Standard C: Technological Impacts: Students will understand the impact that technology has on the social, cultural and environmental aspects of life
Performance Standard 14: evaluate technologies based on their positive and negative outcomes

<i>Unit</i>	<i>Learning Objectives</i>	<i>Sample Activities</i>	<i>Assessment Strategies</i>	<i>Resources</i>
<u>Unit 8:</u> Hybrid Automotive Vehicles	1. Students will research and write a report on hybrid automotive vehicles	<ul style="list-style-type: none"> ❖ Apply computer (internet) search skills to complete a teacher generated outline / worksheet ❖ View video/DVD 	<ul style="list-style-type: none"> ❖ A multiple page report demonstrating a clear understanding of hybrid vehicles and possible future trends using school wide rubric 	<ul style="list-style-type: none"> ❖ Internet access WHS Computer Aided Drafting Lab ❖ Video/DVD ❖ Outline / Worksheet