



### Unit 1: Safety in the Automotive Shop

8 # of Days	The student will learn general safety in the Automotive Shop. The student will also learn work safety as related to OSHA, MSDS, Right to Know and insurance regulations as applied to an Automotive repair facility.
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### Unit 2: Automotive Fundamentals

11 # of Days	The student will learn the many career, educational and certification opportunities within the automotive and related industries. The student will also learn basic vehicle design, engine, frame and related systems.
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### Unit 3: Tools and Equipment

5 # of Days	The student will learn the common hand tools used in the servicing of an automobile. The student will also learn the use of electrical and electronic testing equipment as needed on late model vehicles.
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## Unit 4: Gasoline Engine Principles

15 # of  
Days

The student will learn the principles of internal combustion engines. The student will also learn four stroke cycle engine theory along with the principles required for combustion. Topics include bore, stroke, timing, air fuel ratios and engine efficiency.



## Unit 5: General Automotive Economics

9 # of  
Days

The student will learn the economics of owning, repairing and maintaining a modern automotive vehicle. The student will also learn analyzing car purchasing, insurance, related operating costs and vehicle sales, along with comprehensive preventative maintenance programs.



## Unit 6: Automotive Lubrication

15 # of  
Days

The student will learn the purpose of the lubrication system, identify contaminants, oil characteristics, classifications and identify the parts of the lubrication system. The student will also learn about identifying the various problems, their diagnosis, servicing tips and procedures.



## Unit 7: Wheels and Tires

9 # of  
Days

The student will learn how tires and wheels are designed, constructed, sized and serviced. The student will also learn about analyzing the purpose and operation of the wheels and rims along with driveability related problems.



## Unit 8: Cooling system

9 # of  
Days

The student will learn about the automotive cooling system and coolant characteristics. The various parts of the cooling system are introduced along with their operation, diagnosis and service procedures to maintain the system.



## Unit 9: Basic Electrical Theory

6 # of  
Days

The student will learn about basic electrical/electronic theory as it relates to the application in modern automobiles. The student will also learn the terminology used in defining, troubleshooting and applying electrical/electronic principles in automotive electrical circuits.



### Unit 10: Batteries

4 # of Days

This unit is designed to introduce the student to the purpose, operation, servicing and maintenance of the automotive storage battery. Analyzing chemical make up and specific gravity along with diagnostics of batteries as related to the electrical system is also covered.



### Unit 11: Starting Systems

9 # of Days

This unit is designed to introduce the student to the components, operation and servicing of the automotive starting system. Magnetic and mechanical principles of the starter along with the function and design of the starter circuit will be analyzed. Basic troubleshooting and diagnostics is also introduced.



### Unit 12: Charging Systems

9 # of Days

This unit introduces the student to the components, operation and servicing of the automotive charging circuit. The theory and principles of converting mechanical energy into electricity, system design, troubleshooting and failure analysis will also be covered.



## Unit 13: Ignition Systems

9 # of  
Days

This unit will introduce the student to the principles, components and operation of basic conventional and electronic ignition systems. Input sensors, advance mechanisms, computer sensors, servicing and troubleshooting will be covered along with common problems and manufacturer differences.



## Unit 14: Fuel Delivery Systems

16 # of  
Days

This unit will introduce the student to the principles of carburetion, fuel injection, air intake systems and their related exhaust systems. Fuel characteristics and the properties of gasoline and alternative fuels will be covered along with system operation, diagnostics and servicing of the various systems.



## Unit 15: Emission Control Systems

9 # of  
Days

This unit will introduce the student to the many and various types of emission control devices used on modern automobiles. The relationship between automobile engine design, computer controls, engine physics and pollution chemistry is analyzed along with service, troubleshooting and repair procedures.



## Unit 16: Braking Systems

14 # of  
Days

This unit is designed to introduce the student to the principles of friction and hydraulic circuits as related to modern automobile braking systems. Function, design, component identification along with system operation, servicing, troubleshooting and brake maintenance is also part of this unit.



## Unit 17: Steering and Suspension Systems

13# of  
Days

This unit will introduce the student to the many and varied steering and suspension systems used on modern automobiles. Steering and suspension geometry, part identification, service and maintenance procedures along with alignment techniques and specifications are covered.

