

## Automotive Services

### Course Description

This course will give a summary of the automotive services career field, related jobs, required education and certification with emphasis on:

- The advantages and disadvantages of working in the auto service career field in regards to expected pay and benefits.
- A brief description of hazards encountered in the workplace.
- Identifying general safety, personal safety, and tool and equipment safety rules in automotive services.
- The tools and equipment used in the trade and how to maintain and use them correctly.

### Objective

Demonstrate your understanding of the material presented by written exam, participation, and performing certain tasks as outlined by task sheets.

### Knowledge

After completing this course, you will be able to identify major systems of an automobile and their purpose.

- Explain the importance of ASE and NATEF and how to become an ASE certified technician.
- Identify career opportunities in the automotive field.
- Recognize hazardous materials and waste and proper methods of disposal.
- Identify types of safety information.
- Identify personal protective equipment for the use in the automotive shop.
- Identify and properly use tools and equipment.
- Describe the purpose of gaskets and sealants and explain how to use them properly.

### Skills

In order to meet the objective, you must be literate and have a G.E.D. or high school diploma.

- You must have a valid driver's license and good driving record.
- Able to lift 50 to 75 lbs. And stand on your feet for 8 to 10 hours per day.
- Ability to work independently and follow instructions on a work order.
- Basic keyboarding/computer skills.
- Must have a basic mechanics tool set.



Automotive Services Lesson Outline		
30 Minutes	<u>Introduction</u> <ul style="list-style-type: none"> <li>• Instructor</li> <li>• Students</li> <li>• Syllabus</li> </ul>	About Me About You What you will learn
45 Minutes	<u>The Automotive Profession</u> <ul style="list-style-type: none"> <li>• History</li> <li>• Auto Systems</li> <li>• Certifications</li> </ul>	Old vs. New Engine, Steering, ASE (handout)
15 Minutes	Break	
45 Minutes	<u>Automotive Career</u> <ul style="list-style-type: none"> <li>• Employers</li> <li>• Work Environment</li> <li>• Employability Skills</li> <li>• Pay &amp; Benefits</li> </ul>	Task Sheet  Hours, Duties, etc Education, Dependability Trainee to Master Tech
15 Minutes	<u>General Workplace Safety</u> <ul style="list-style-type: none"> <li>• OSHA Workplace precautions</li> <li>• Hazardous Materials and Waste</li> <li>• Fire Safety</li> </ul>	Purpose General Hazards Types, MSDS Basic Rules
15 Minutes	<u>Personal Safety Practices</u> <ul style="list-style-type: none"> <li>• Personal Protective Equipment</li> <li>• Ergonomics</li> <li>• Emergency Response</li> </ul>	Safety glasses, Shoes Lifting, Carpal tunnel First Aid, CPR
15 Minutes	Break	
15 Minutes	<u>Tool and Equipment Safety</u> <ul style="list-style-type: none"> <li>• Hand Tools</li> <li>• Power Tools</li> <li>• Shop Equipment</li> <li>• Fasteners, gaskets Sealants</li> <li>• Silicone, Antiseize</li> </ul>	Wrenches, Sockets Impacts, Grinders Jacks, Lifts, Torches
30 Minutes	<u>Summary</u> <ul style="list-style-type: none"> <li>• Quiz</li> <li>• Evaluation</li> </ul>	



## Automotive Services Quiz Answer Sheet

Name \_\_\_\_\_ Date \_\_\_\_\_

Circle the correct answer

1. Which of the following statements about today's new autos is correct?
  - a. There are more computers in a car today than aboard the first spaceship.
  - b. A new car today may have as many as 15 computers onboard.
  - c. Both a and b**
  - d. Neither a or b
  
2. The purpose of Automotive Services Excellence (ASE) is to:
  - a. Improve the quality of vehicle service and repair.
  - b. Test and certify automotive service and repair professionals.
  - c. Both a and b**
  - d. Neither a or b
  
3. To be ASE certified in a certain area, a technician must:
  - a. Pass a written exam.
  - b. Have at least two years relevant work experience.
  - c. Complete an ASE-certified automotive training program.
  - d. Both a and b**
  
4. The National Automotive Educational Foundation (NATEF) does which of the following:
  - a. Provides a forum for technical information and exchange.
  - b. Tests automotive technicians on knowledge and skills.
  - c. Evaluates automotive training programs and recommends programs for ASE certification.**
  - d. Recommend students to prospective employers.
  
5. To get started in a career as an automotive service technician, you should:
  - a. Have a mechanical aptitude and interest in automotive vehicles and how they work.
  - b. Complete an automotive training program.
  - c. Gain work experience in a modern automotive service facility.
  - d. All of the above.**
  
6. OSHA was created to:
  - a. Assure safe and healthful working conditions for working men and women.
  - b. Authorize enforcement of the standards developed under the Act.
  - c. Provide research, information, education, and training in the field of occupational safety and health.



- d. **All of the above.**
7. Technician A says the “Right to know” law only applies to large automotive workplaces.  
Technician B says the “Right to Know” law requires having access to a material safety data sheet. Who is correct?
- a. Technician A
  - b. Technician B**
  - c. Both A & B
  - d. Neither A nor B
8. Technician A says MSDS lists possible health and safety problems of a chemical. Technician B says MSDS identifies chemicals and their components. Who is correct?
- a. Technician A
  - b. Technician B
  - c. Both A & B**
  - d. Neither A nor B
9. A starter set of hand tools costs about:
- a. \$100.00
  - b. \$1,000.00**
  - c. \$5,000.00
  - d. \$10,000.00
10. According to the Occupational Outlook Handbook, 60,000 additional automotive Technicians will be needed in the near future.
- a. True**
  - b. False



## AUTOMOTIVE SERVICES

### Objective:

This session provides exposure to the various certifications, licenses and training classes available or required for a career in automotive, truck, bus and/or heavy equipment maintenance and repair. (12 hours)

- I Instructor introduction
- II ASE Certifications Available
  - A. Automobile diagnostics and repair
  - B. Medium/heavy truck diagnostics and repair
  - C. Truck Equipment Technician, attachments and systems on medium/heavy trucks
  - D. Collision repair/refinish and estimator of equipment involved in accidents
  - E. Engine machinist both gasoline and diesel
  - F. Specialist in exhaust systems
  - G. Specialist in alternate fuel systems
  - H. Advanced automobile and medium/heavy truck engine diagnosis and performance
  - I. School bus repair
- III Additional Certifications and Licenses Available
  - A. Air conditioning refrigerant recovery and recycling
  - B. Brake inspector
  - C. Virginia State Inspector
  - D. Veeder-Root underground storage tank/above ground storage tank monitoring systems
- IV Additional Training Classes Available
  - A. Brake rotor machine operation
  - B. Calibration of automobile
  - C. Diagnostics of equipment
  - D. Fleet management software
  - E. Front-end alignment machine
  - F. Generators
  - G. Hydraulics
  - H. Lift rack operation
  - I. Marine repairs
  - J. Small engine repairs
  - K. Tire machine operation

V Review

- A. Questions and Answers
- B. Written Test

## Automotive Services Quiz

Name \_\_\_\_\_ Date \_\_\_\_\_  
Circle the correct answer

1. Which of the following statements about today's new autos is correct?
  - a. There are more computers in a car today than aboard the first spaceship.
  - b. A new car today may have as many as 15 computers onboard.
  - c. Both a and b
  - d. Neither a or b
  
2. The purpose of Automotive Services Excellence (ASE) is to:
  - a. Improve the quality of vehicle service and repair.
  - b. Test and certify automotive service and repair professionals.
  - c. Both a and b
  - d. Neither a or b
  
3. To be ASE certified in a certain area, a technician must:
  - a. Pass a written exam.
  - b. Have at least two years relevant work experience.
  - c. Complete an ASE-certified automotive training program.
  - d. Both a and b
  
4. The National Automotive Educational Foundation (NATEF) does which of the following:
  - a. Provides a forum for technical information and exchange.
  - b. Tests automotive technicians on knowledge and skills.
  - c. Evaluates automotive training programs and recommends programs for ASE certification.
  - d. Recommend students to prospective employers.
  
5. To get started in a career as an automotive service technician, you should:
  - a. Have a mechanical aptitude and interest in automotive vehicles and how they work.
  - b. Complete an automotive training program.
  - c. Gain work experience in a modern automotive service facility.
  - d. All of the above.
  
6. OSHA was created to:
  - a. Assure safe and healthful working conditions for working men and women.
  - b. Authorize enforcement of the standards developed under the Act.
  - c. Provide research, information, education, and training in the field of occupational safety and health.



- d. All of the above.
7. Technician A says the "Right to know" law only applies to large automotive workplaces.  
Technician B says the "Right to Know" law requires having access to a material safety data sheet. Who is correct?
- a. Technician A
  - b. Technician B
  - c. Both A & B
  - d. Neither A nor B
8. Technician A says MSDS lists possible health and safety problems of a chemical. Technician B says MSDS identifies chemicals and their components. Who is correct?
- a. Technician A
  - b. Technician B
  - c. Both A & B
  - d. Neither A nor B
9. A starter set of hand tools costs about:
- a. \$100.00
  - b. \$1,000.00
  - c. \$5,000.00
  - d. \$10,000.00
10. According to the Occupational Outlook Handbook, 60,000 additional automotive Technicians will be needed in the near future.
- a. True
  - b. False

