

Automotive Technology Competency Outline

Understand the fundamentals of the automotive service industry

1. Explain and examine the proper use of automotive chemicals and their effects.
AAI 8. Health, Safety, and Environment: Explain the health and safety laws and practices affecting the employee, the surrounding community, and the environment in this industry.
2. Demonstrate the proper use and care of automotive tools and equipment.
AAI 4. Technical and Production Skills: Identify specific production and technical skills required for this industry.
3. Demonstrate effective automotive shop management skills.
AAI 1. Planning: Explain the key elements of a long-term plan for a successful company.
AAI 2. Management: Discuss the different forms of management and ownership within this industry.
AAI 3. Finance: Explain the key components of financial management of a company.
4. Demonstrate and practice personal and automotive shop safety.
AAI 9. Personal Work Habits: Explain the work habits an employer looks for in an employee in this industry.

Understand and be knowledgeable in analyzing, evaluating, and detecting/repairing brake systems

5. Diagnose general brake systems.
AAI 4. Technical and Production Skills: Identify specific production and technical skills required for this industry.
AAI 5. Underlying Principles of Technology: Explain through discussion the technological systems used within this industry.
6. Diagnose and repair hydraulic brake systems.
7. Diagnose and repair drum brake systems.
8. Diagnose and repair disc brake systems.
9. Diagnose and repair power assist unit.

Understand the concepts of and procedures for investigating and analyzing electrical/electronic systems

10. Diagnose and repair general electrical systems.
AAI 4. Technical and Production Skills: Identify specific production and technical skills required for this industry.
AAI 5. Underlying Principles of Technology: Explain through discussion the technological systems used within this industry.
11. Diagnose and repair starting systems.
12. Diagnose and repair lighting systems.
13. Diagnose and repair battery charging systems.

Understand the concepts of and procedures for investigating and analyzing steering and suspension systems

14. Diagnose general automotive suspension and steering systems.
AAI 4. Technical and Production Skills: Identify specific production and technical skills required for this industry.
AAI 5. Underlying Principles of Technology: Explain through discussion the technological systems used within this industry.
15. Diagnose and repair automotive steering systems.
16. Diagnose and repair automotive front suspension systems.
17. Diagnose and repair automotive rear suspension systems.
18. Diagnose and adjust automotive wheel alignment.
19. Diagnose and repair automotive tires and wheels.

Understand the concepts and procedures in investigating and analyzing engine performance

20. Perform general engine diagnosis and repair.
AAI 4. Technical and Production Skills: Identify specific production and technical skills required for this industry.
AAI 5. Underlying Principles of Technology: Explain through discussion the technological systems used within this industry.
21. Use scan tools to retrieve engine trouble codes and use diagnostic charts to determine cause of code.
22. Perform maintenance and repair of ignition systems.
23. Perform maintenance and repair of fuel, air and exhaust emissions systems.

Understand the concepts of and procedures for investigating and analyzing engine repair techniques

24. Perform general engine mechanical diagnosis.
AAI 4. Technical and Production Skills: Identify specific production and technical skills required for this industry.
AAI 5. Underlying Principles of Technology: Explain through discussion the technological systems used within this industry.
25. Identify internal engine parts and systems and explain their operation.
26. Perform engine diagnostic procedures including compression test, leak down test and determine engine mechanical condition.
27. Perform cooling and lubrication disassembly.

Understand the fundamental concepts of Entrepreneurship

28. Discuss and assess venture creation possibilities and identify the steps in planning the venture.
29. Identify the resources needed for venture startup and operation.
30. Discuss the options in planning the venture's future (growth, development, demise).
AAI 6. Labor Issues: Explain the employees' and employers' rights and responsibilities in this industry.
AAI 7. Community Issues: Discuss the ways a company can impact its community and the ways a community can impact a company.
31. Identify and discuss the traits and behaviors of an entrepreneur (leadership, personal assessment, personal management).

Understand the importance of personal growth, leadership and career success

32. Demonstrate personal growth, community leadership, democratic principles and social responsibility by participating in activities/events offered through student organizations.

Understand the key concepts associated with high performance/employability skills (SCANS)

33. Decision-Making & Problem-Solving: Demonstrate and apply good decision-making and problem-solving skills by outlining issues in situations/problems and determining, collecting, and organizing information needed in order to formulate a solution.
34. Self-Management: Demonstrate and apply self-management skills by adhering to regulations, being responsible and following through on commitments.
35. Communication Skills: Demonstrate and apply effective communication skills: verbal, written, visual and listening
36. Ability to Work with Others: Demonstrate and apply the necessary skills in order to work effectively with others.
37. Information Use - Research, Analysis, Technology: Demonstrate and apply the use of information through research, analysis, and technology.
38. Mathematical Concepts: Demonstrate mathematical and computation skills as applied to real world situations.
39. General Safety: Demonstrate and apply safe practices and procedures in the workplace.
40. Career Development: Demonstrate personal/career development skills by completing a career plan.