



Automotive Service Technology

Career Competition

Career Cluster: Transportation, Distribution and Logistics

State Qualifying Exam: No

National Contest: Yes

Participation: Individual

Competition Description

Competitors demonstrate their ability to perform jobs and skills based on the task list outlined by the National Institute for Automotive Service Excellence and the National Automotive Technicians Education Foundation.

Tasks To Be Evaluated

1. Basic electrical circuit be able to wire a basic series circuit and parallel and use of multimeter
2. Electrical testing of injector circuit and ignition coil use of wiring diagram and multimeter
3. Lighting circuit board
4. Advanced electrical circuit diagnosis using multimeter
5. Scanner be able to use scanner to retrieve data from a vehicle
6. MSDS be able to answer question with info given and sample chemicals
7. Interview station be able to answer question on a interview
8. Safety inspection be able to do a safety inspection on a vehicle and test battery
9. Alignment station be able to identify parts and interpret readings from alignment machine
10. Balance station basic understanding of tires and balancing
11. Knowledge of A/C systems and controls auto temp and manual
12. Disc brake disassembly and reassembly and measurements will be taken
13. ALLDATA look up car info
14. Pico Oscilloscope usage
15. Measurements be able to use a ruler, micrometer, dial gauge, feeler gauge torque wrench and other measuring tools
16. ASE type questions written
17. Components I.D. various auto parts to be identified
18. Electude interactive computer program on engine performance (<https://simulator.electude.com>) site for students to get familiar with the simulator
19. Atech Interactive computer program on relays
20. Drive Belts Installing on a trainer and inspection
21. Manual transmission parts & gear ratios test
22. Be able to answer safety questions from CCARE safety site in handout.
23. Soldering wires and terminal crimping on wires
24. Safety and general knowledge for EV trainer

Provided by Competitor

- Competitors will need to create a one-page resume

Provided by Technical Committee

- All tools needed for competition

Additional Resources

To prepare for the safety test, please review the following pages.

If competitors would like to practice the car simulator on Electude, contact Wendy McNally at wendymcnally.electude@com for access.



*Automotive
Service Technology*

Career
Competition

Clothing Requirement

National Requirement:

Class D: Competition Specific: Blue Attire

- Official SkillsUSA light blue work shirt
- Navy pants
- Black, brown, or tan leather work safety shoes (with protective toe cap).

State Requirement:

National Requirement OR

- Light blue work shirt
- Work pants of any kind are acceptable dress (no jeans)
- Black, brown, or tan leather work safety shoes (with protective toe cap).
- Any embroidered names or school patches must be covered if applicable.

Illinois SkillsUSA Competition

Safety

Test Preparation Site

Website navigation and usage tutorial for
2024 AST and MLR Competition contestants

eLearning

Greetings

This guide will help you access and use the complimentary study materials provided by The Coordinating Committee For Automotive Repair (CCAR) and Electude. The training site is accessed at the URL:

<https://skillsccar.electude.com/>

There you will find seven (7) areas of study that will be tested as part of the safety station at the **2024 Illinois Skills Competition**.

Please note that although you may use a smartphone to access these modules, your best viewing capabilities will be with a notebook computer or large format tablet.

The seven areas of study covered include:

- Personal Protective Equipment
- Blood Borne Pathogens
- Fire Safety
- Automotive Lift Safety
- Battery Safety
- Environmental Policies
- Safety Data Sheets

Access for all competitors will be available, 24/7, until 4/23/2024 at 9:00pm CST.





Coordinating Committee For Automotive Repair



This site is for the purpose of access to self study content and testing competitors.

- ▶ Student
- ▶ Teacher
- ▶ Administration

Coordinating Committee For Automotive Repair



This site is for the purpose of access to self study content and testing competitors.

<<<Once you arrive select student.

▶ Student

▶ Teacher

▶ Administration



Coordinating Committee For Automotive Repair

Student login

LOGIN

Username

Password

OK

This is the student login page.

There are twelve available usernames to login with:

- student1
- student2
- student3
- student4
- student5
- student6
- student7
- student8
- student9
- student10
- student11
- student12

The password for all usernames is the same: **ilskills2024**

Please be sure there are no capital letters or spaces in the username.

All users are anonymous, no personal information is taken or stored.

Coordinating Committee For Automotive Repair

Student login



LOGIN

Username

Password

OK

Please select a username and login

- Content of Illinois State SkillsUSA 2024
- 2024 SkillsUSA AST and MLR Safety Self Study

Content of Illinois State SkillsUSA 2024

2024 SkillsUSA AST and MLR Safety Self Study

You should end up here on the module launching page. Click on any of the blue title links.

2024 SkillsUSA eSafety essentials Automotive Lift Safety and Best Practices

This module covers recognized safety and best practices for proper use and periodic inspection of automotive lifting equipment. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was created in partnership with The Coordinating Committee For Automotive Repair, CCAR.



2024 SkillsUSA eSafety Essentials AGM and Conventional Lead Acid Battery Safety and Handling

This module covers the unique handling and safety requirements for AGM and hazards associated with all automotive batteries. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This course was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.



2024 SkillsUSA eSafety essentials Blood Borne Pathogens

This module covers hazards and safe handling of blood borne pathogens. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with the Coordinating Committee For Automotive Repair, CCAR.



2024 SkillsUSA eSafety Essentials Environmental Policies and Best Practices

This module covers safe handling, storage and proper disposal methods of environmental hazardous waste and environmental hazardous materials used or generated by automotive repair facilities. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee for Automotive Repair, CCAR.



2024 SkillsUSA eSafety essentials Fire Safety

This module covers the essential elements and best practices of fire safety. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.



2024 SkillsUSA eSafety essentials PPE safety and best practices

This module covers the essential elements and best practices of fire safety. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.



2024 SkillsUSA eSafety essentials Safety Data Sheets

This module covers core competencies of knowledge and use of hazardous materials safety data sheets. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee for Automotive Repair, CCAR.



2024 SkillsUSA AST and MLR Safety Self Study

Content 2024 SkillsUSA AST and MLR Safety Self Study Certificates Account Illinois Tech12

ELECTUDE

Content of Illinois State SkillsUSA 2024

2024 SkillsUSA AST and MLR Safety Self Study

Content of Illinois State SkillsUSA 2024

2024 SkillsUSA AST and MLR Safety Self Study

Content of Illinois State SkillsUSA 2024

2024 SkillsUSA AST and MLR Safety Self Study

Content of Illinois State SkillsUSA 2024

2024 SkillsUSA AST and MLR Safety Self Study

[2024 SkillsUSA eSafety essentials Automotive Lift Safety and Best Practices](#)

This module covers recognized safety and best practices for proper use and periodic inspection of automotive lifting equipment. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was created in partnership with The Coordinating Committee For Automotive Repair, CCAR.

[Start module](#)

PROGRESS

Status	not started yet
--------	-----------------

[2024 SkillsUSA eSafety Essentials AGM and Conventional Lead Acid Battery Safety and Handling](#)

This module covers the unique handling and safety requirements for AGM and hazards associated with all automotive batteries. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This course was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.

[2024 SkillsUSA eSafety essentials Blood Borne Pathogens](#)

This module covers hazards and safe handling of blood borne pathogens. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with the Coordinating Committee For Automotive Repair, CCAR.

[2024 SkillsUSA eSafety Essentials Environmental Policies and Best Practices](#)

This module covers safe handling, storage and proper disposal methods of environmental hazardous waste and environmental hazardous materials used or generated by automotive repair facilities. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee for Automotive Repair, CCAR.

[2024 SkillsUSA eSafety essentials Fire Safety](#)

This module covers the essential elements and best practices of fire safety. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.

[2024 SkillsUSA eSafety essentials PPE safety and best practices](#)

This module covers the essential elements and best practices of fire safety. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.

[2024 SkillsUSA eSafety essentials Safety Data Sheets](#)

This module covers core competencies of knowledge and use of hazardous materials safety data sheets. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee for Automotive Repair, CCAR.

The course link that you click will drop down to reveal the start module button and the module status box. Please note that on this module, the status is “Not started yet.”

In this example, we see that the module link is a darker blue and the status of the module is busy. This is what you will see if you or another user have been or are currently working with this module. To begin, click the Start Module button.

Content of Illinois State SkillsUSA 2024

2024 SkillsUSA AST and MLR Safety Self Study

Time spent: 00:01:28

2024 SkillsUSA eSafety essentials Automotive Lift Safety and Best Practices

This module covers recognized safety and best practices for proper use and periodic inspection of automotive lifting equipment. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was created in partnership with The Coordinating Committee For Automotive Repair, CCAR.

Start module

PROGRESS	
Status	Busy
Sessions	1
First access	02/26/24
Latest modification	02/26/24
Time spent	00:01:27
Progress	8% (correct: 5%)

2024 SkillsUSA eSafety Essentials AGM and Conventional Lead Acid Battery Safety and Handling

This module covers the unique handling and safety requirements for AGM and hazards associated with all automotive batteries. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This course was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.

2024 SkillsUSA eSafety essentials Blood Borne Pathogens

This module covers hazards and safe handling of blood borne pathogens. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with the Coordinating Committee For Automotive Repair, CCAR.

2024 SkillsUSA eSafety Essentials Environmental Policies and Best Practices

This module covers safe handling, storage and proper disposal methods of environmental hazardous waste and environmental hazardous materials used or generated by automotive repair facilities. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee for Automotive Repair, CCAR.

2024 SkillsUSA eSafety essentials Fire Safety

This module covers the essential elements and best practices of fire safety. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.

2024 SkillsUSA eSafety essentials PPE safety and best practices

This module covers the essential elements and best practices of fire safety. It is part of a suite of complimentary safety modules offered to all 2024 SkillsUSA automotive service technology contestants. This module was developed in partnership with The Coordinating Committee For Automotive Repair, CCAR.

Page selection button>>



Introduction:

Activities performed during diagnosis, service and repair of automotive systems and components may place technicians at risk for personal injury. To lessen the risk of injury, the use of personal protective equipment (PPE) is required to protect technicians from job related hazards. The areas of focus for personal protection include:

- Head
- Eyes and face
- Hands
- Feet and legs
- Torso
- Breathing (nose and mouth)
- Ears (hearing)

In this module we will review the possible hazards and discuss how to properly select and use PPE to avoid injuries.

<<question buttons

Activities performed during diagnosis, service and repair of automotive systems and components may place technicians at ____.

resume

risk

rest

This example shows a module where the status was "Not yet started". It begins on page one at question one.

Page selection button>>



1 ● ● ● ● ● ● ● ● ● ●

Introduction:

Activities performed during diagnosis, service and repair of automotive systems and components may place technicians at risk for personal injury. To lessen the risk of injury, the use of personal protective equipment (PPE) is required to protect technicians from job related hazards. The areas of focus for personal protection include:

- Head
- Eyes and face
- Hands
- Feet and legs
- Torso
- Breathing (nose and mouth)
- Ears (hearing)

In this module we will review the possible hazards and discuss how to properly select and use PPE to avoid injuries.

1 ● ●

<<question buttons

Activities performed during diagnosis, service and repair of automotive systems and components may place technicians at ____.

resume

risk

rest

The buttons to advance the pages and questions beyond page one/Q1 will be grayed out until the first question is answered on a "Not yet started" module. You are not allowed to start anywhere else.



In-Ground Lifts

In-ground lifts are the oldest type of hydraulic lift. They come in single, dual/twin post or three post (heavy truck) configurations. They may be frame supporting or drive on ramps. Legacy in-ground lifts may use compressed air to pressurize hydraulic fluid to power the lift (low pressure). Newer in ground packages are typically self contained to prevent hydraulic leakage to the surrounding soil and are powered by electric pumps (high pressure).
It must be noted that it is possible to find older in-ground lifts that may not have secondary safety or locking systems to prevent the lift from dropping. On older (55-60 years) lifts, safety locks may have been optional equipment. Use of such equipment (without safety locks) should be prohibited in modern shops without the use of supplemental support stands (e.g.tripod stands).

On older in-ground (45-50 years) lifts, safety locks may have been optional equipment.

False

True

Yes it's true.

In this example, the student has advanced to page 6/Q4. They may review any previously visited page or previously answered question, but they must advance to new pages or questions in sequence.

Page one >>

<<< Last page



© Electude Beheer B.V. - latest modification:2021-02-17

Additional safety considerations and strategies:

Although we can plan for every contingency we cannot prepare for those unforeseen events that may arise. We encourage all technicians to maintain a high level of situational awareness while working on vehicles that are supported on a lift. If a failure of the lift system or a failure of the structural integrity of the vehicle itself were to occur, you must be ready to exit the area quickly. To aid in constant safe operation, also consider the following:

- If performing service operations that may cause a large change in the vehicle's center of gravity (e.g. removal or installation of an engine, transmission, rear axle, or E.V. traction battery), then the use of supplemental support stands (e.g., tripods) may be necessary.
- Use of long leverage tools (e.g., pry bars, cheater bars) have the ability to shift the vehicle's center of gravity.
- Any sudden release of energy such as a spring unloading rapidly may cause a large change in center of gravity.
- Always keep rapid exit pathways clear of obstacles such as parts and tool carts. Try to maintain multiple exit pathways when possible.
- Make sure exit pathways lead to clear space to avoid being trapped by walls, benches, or toolboxes.
- Never modify, over ride, or disable lift safety devices.
- All vehicle lifts are designed with a "Dead Man" control strategy where the operator must remain at the controls to operate the lift.
- Never modify or override lift controls to make them function automatically or autonomously.

<<< Lesson finished message

You have now finished this lesson. You can go back to the previous web page, when you are ready.

go back

In this example, the previous user has completed the module and exited the course. If you arrive here when starting a new module, simply select page 1/Q1 to start the module again.



© Electude Beheer B.V. - latest modification:2021-02-17

1 Introduction

Repair of modern automobiles and trucks would be impractical and, at times impossible, without the use of lifting equipment. The levels of speed and efficiency that lifts provide to today's technicians is invaluable. Unlike any other lifting systems(e.g., cranes, forklifts), automotive lifts are unique as being the only lifting system that permits people to work under a supported load in a standing position.

However, automotive lifts are so common place in professional repair facilities that there may be a trend toward complacency when it comes to lift safety.

In this module we will cover the basics of:

- safe positioning
- safe lifting
- safe lowering
- periodic inspection and maintenance of automotive and truck lifting equipment.

1

Unlike any other lifting systems(e.g., cranes, forklifts), automotive lifts are unique as being the only lifting system that permits people to work under a supported load in a standing position.

False

True

In this example, the page and question buttons are a darker grey and any selectable button the cursor hovers over will show as active and may be selected.



© Electude Beheer B.V. - latest modification:2021-02-17

Progress indicator with 10 dots, the first one is filled.

Introduction

Repair of modern automobiles and trucks would be impractical and, at times impossible, without the use of lifting equipment. The levels of speed and efficiency that lifts provide to today's technicians is invaluable. Unlike any other lifting systems(e.g., cranes, forklifts), automotive lifts are unique as being the only lifting system that permits people to work under a supported load in a standing position.

However, automotive lifts are so common place in professional repair facilities that there may be a trend toward complacency when it comes to lift safety.

In this module we will cover the basics of:

- safe positioning
- safe lifting
- safe lowering
- periodic inspection and maintenance of automotive and truck lifting equipment.

1 ●

Unlike any other lifting systems(e.g., cranes, forklifts), automotive lifts are unique as being the only lifting system that permits people to work under a supported load in a standing position.

False

True

check

To return to the menu and select a different module, simply click the exit arrow in the upper right corner.

If you have any access or navigation issues, you may contact CCAR at 847-749-4375 ext 4. Monday – Friday, 8:00am to 4:30pm central time.

If you have any comments or questions you wish to submit **within** any of these modules using the **comment link**, you must include an email address for us to respond to in the comment itself. This is due to the fact that the preset logins (student1-student12) are anonymous and can NOT be responded to by us within the system.

Note: If you are a current Electude subscriber please do not refer access issues or questions to your Electude representative. They do not admin access to this content. Please direct any inquiries to CCAR at 847-749-4375 or email info@ccar-greenlink.org.

Access to the system will end on 4/23/2024 at 9:00pm CST for all users.