

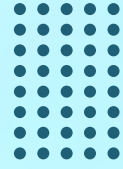


# REVVED Revolutionizing Electric Vehicle Education

## HI-TEC

Wednesday, July 31, 2024

REVVED HI-TEC



20  
24



REVVED HI-TEC

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REVVED HI-TEC

# REVVED Goals

Identify current and future education and workforce needs

Create, deploy, and assess technician education

Develop and strengthen partnerships

Provide professional development



**NEW** EV Curriculum

# Two Tracks

Delivered in Online or Blended Format



## Service Track

- 6 Courses
- 45 Hours



## Manufacturing Track

- 6 Courses
- 50 Hours

# EV Curriculum

## Introduction to EV



The Introduction to Electric Vehicles (EV) course will equip the learner with fundamental knowledge of EVs. The various types of EVs are discussed, including hybrids, plug-in hybrids, battery-electric, and fuel-cell vehicles. EV terminology, core components, unique features and battery technology are also explored.

## BEV Service & Installation Safety



The safety and standards course is designed to provide a foundational understanding of safety and standards for servicing BEVs. The course will focus on safety standards, regulations, and other BEV industry standards. This course identifies the potential dangers when performing service on high-voltage systems

# Service Track

## Electric Motor Fundamentals



This course is designed to provide learners with a comprehensive understanding of electric motor fundamentals and their operations in BEVs. Learners will gain knowledge of electrical principles, including current, resistance, voltage, and power, and apply these concepts to analyze electrical circuits.

[MORE >>](#)

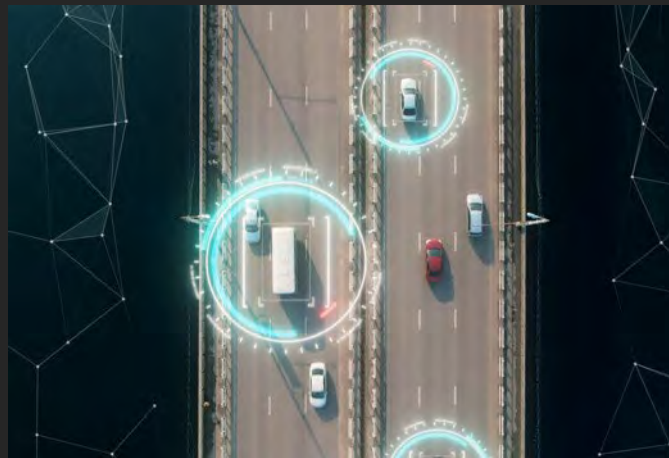
# EV Curriculum

## Energy Storage and Battery Management



The course on energy storage and battery management systems is designed to equip students with a comprehensive understanding of battery chemistry, construction, testing, and management in the context of electric vehicles.

## Electric Vehicle Software



The course on electric vehicle software will equip learners with an understanding of the key technologies and systems enabling automotive vehicle connectivity, autonomous driving, and advanced driver assistance. Learners will analyze Wi-Fi, cellular networks, GNSS, Bluetooth, and telematics in the context of connected vehicles.

# Service Track

## Electric Motor Diagnostics and Maintenance



This course is designed to provide a comprehensive understanding of electric motor diagnostics and maintenance for battery electric vehicles (BEVs). Electric motors are a critical component of BEVs, and it is essential to have a strong knowledge of electric motor maintenance and repair to ensure the optimal performance and lifespan of the motor.

# EV Curriculum

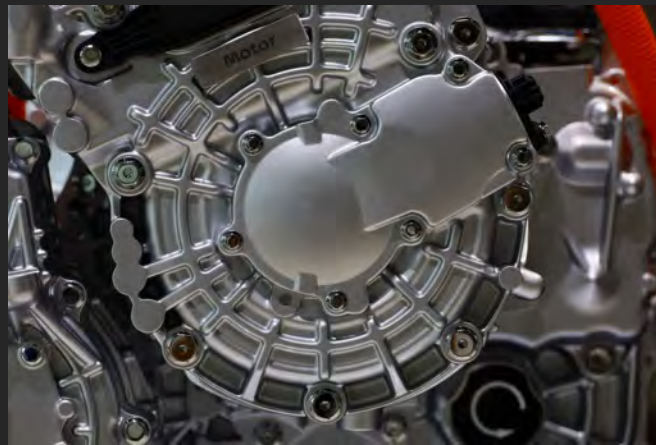
# Manufacturing Track

## Principles of Alternate and Renewable Energies



This course introduces you to renewable and alternative energy types and production fundamentals. The course delves into each renewable and alternative energy source, gains insights into renewable and alternative energies, and compares them to traditional fossil fuels.

## Introduction to Propulsion Systems and Operations



This course comprehensively introduces propulsion systems and operations encompassing software and hardware. In this course, you will explore the fundamentals of electrical and electronic systems, power electronics, battery management, and charging systems.

## BEV Manuf. and Supply Chain: Safety and Standards



This course provides a comprehensive overview of BEV manufacturing and supply chain operations, focusing on safety and industry standards. The course will help you gain insight into the fundamental principles and practices essential for efficient and safe production processes in the BEV industry.

# EV Curriculum

# Manufacturing Track

## Motors and Controls for BEVs and Industrial Applications



This course explores motors and control systems essential for BEV propulsion and industrial applications. This course provides a solid foundation in the electrical systems, control mechanisms, and protective devices essential for both BEV propulsion and industrial motor applications.

## BEV Battery Cells & Systems Manuf. and Integration



This course provides a comprehensive overview of BEV battery cells and systems manufacturing and integration, focusing on key safety procedures, integration concepts, and electrical measurement devices.

## Robotics and Production Control in BEV Manufacturing



This course provides a comprehensive overview of robotics and production control within the context of BEV manufacturing. This course explores key topics on production stages, resources, and types, which will cover the fundamental processes and materials involved in manufacturing BEVs.



# Example Curriculum Structure

## 1 Course Overview

- Pre-course survey
- Pre-course evaluation
  - Pre-test
- Course introduction
  - Course goal
  - Course objectives
  - Suggested readings
  - Course format

## 2 Module Overview

- Connecting to new knowledge
- Module goal
- Module objectives
- Orienting questions

## 3 Lesson Overview

- Lesson objectives
- Video lectures
- Virtual reality simulations
- Lesson summary
- Key terms
- Lesson activities

### Courseware Elements



Video Mini-Lectures



Virtual Reality Simulations



Interactive Assessments

# Lecture Example

PERSONAL PROTECTIVE EQUIPMENT (PPE)

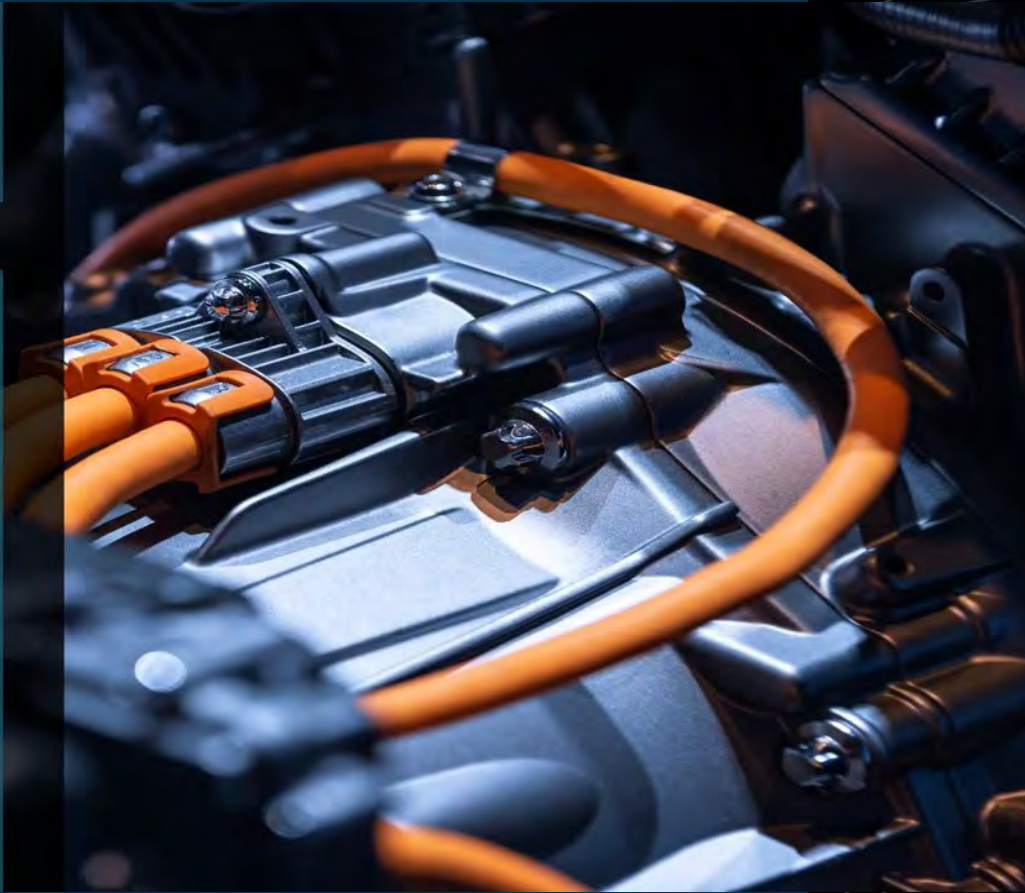
LESSON

PPE FOR BATTERY ELECTRIC VEHICLE  
(BEV) TECHNICIANS

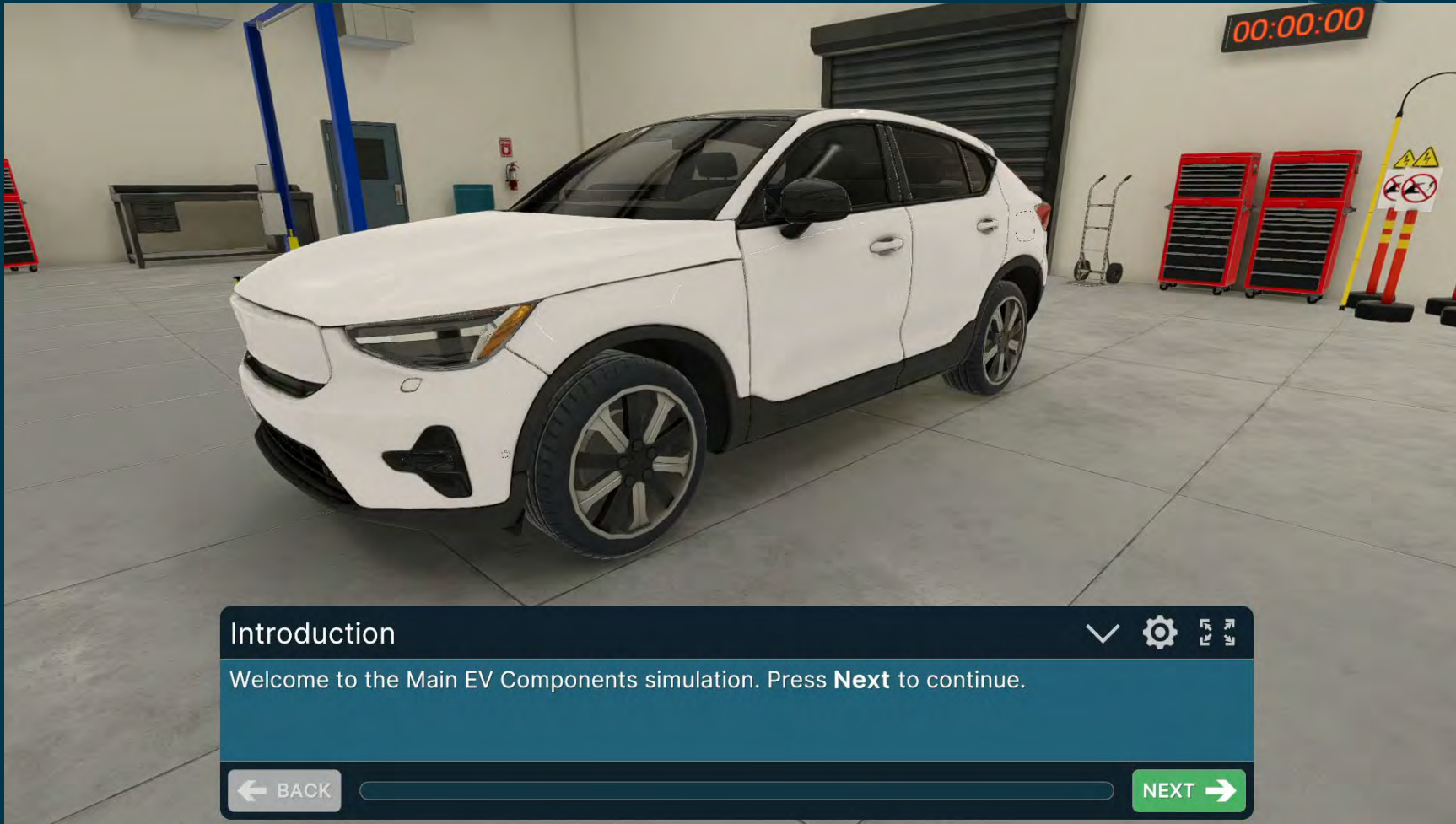
# Lecture Example

DE-ENERGIZING HV SYSTEMS  
IN BEVs

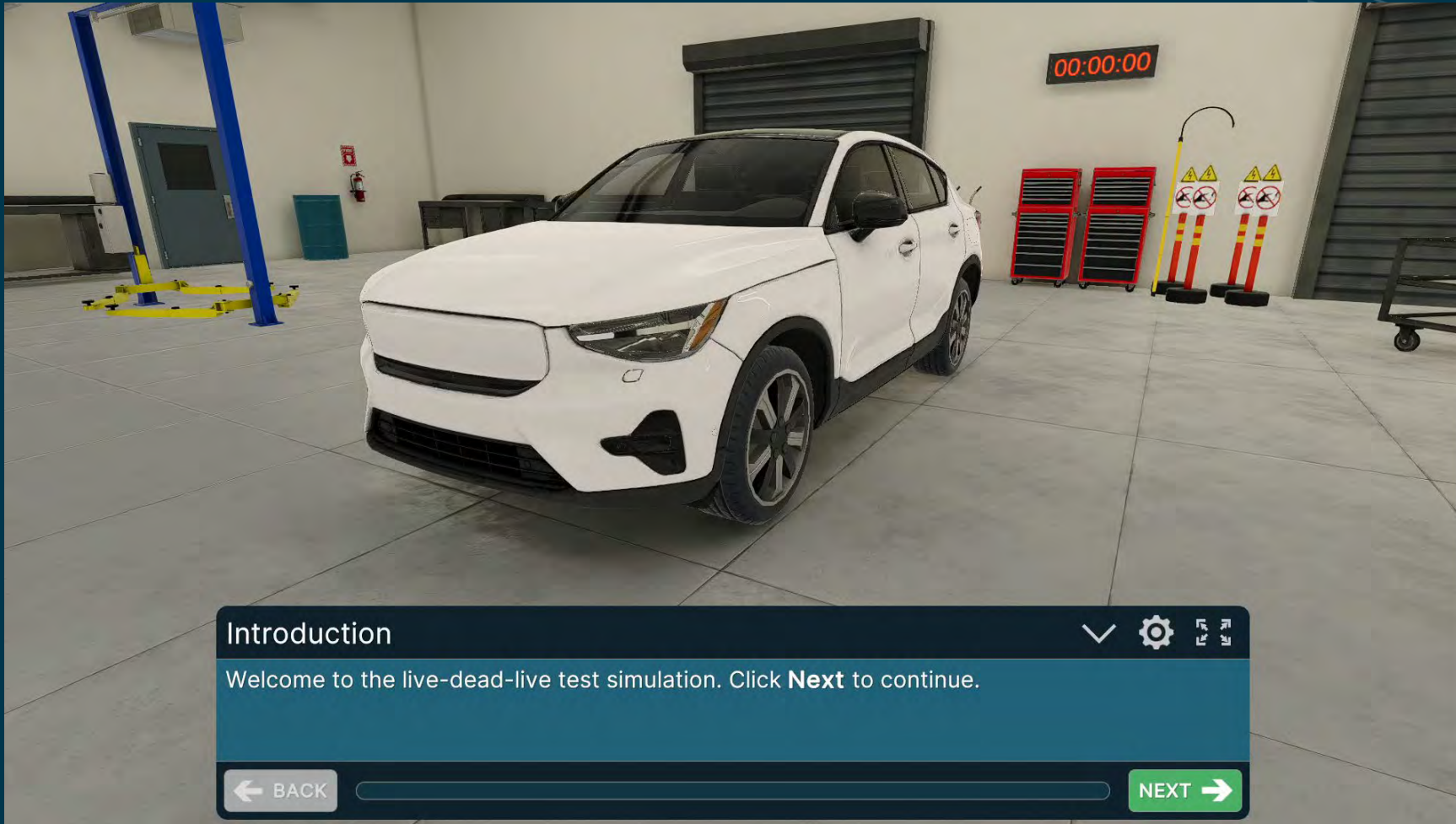
Section  
HOW TO  
DE-ENERGIZE HV  
SYSTEMS?



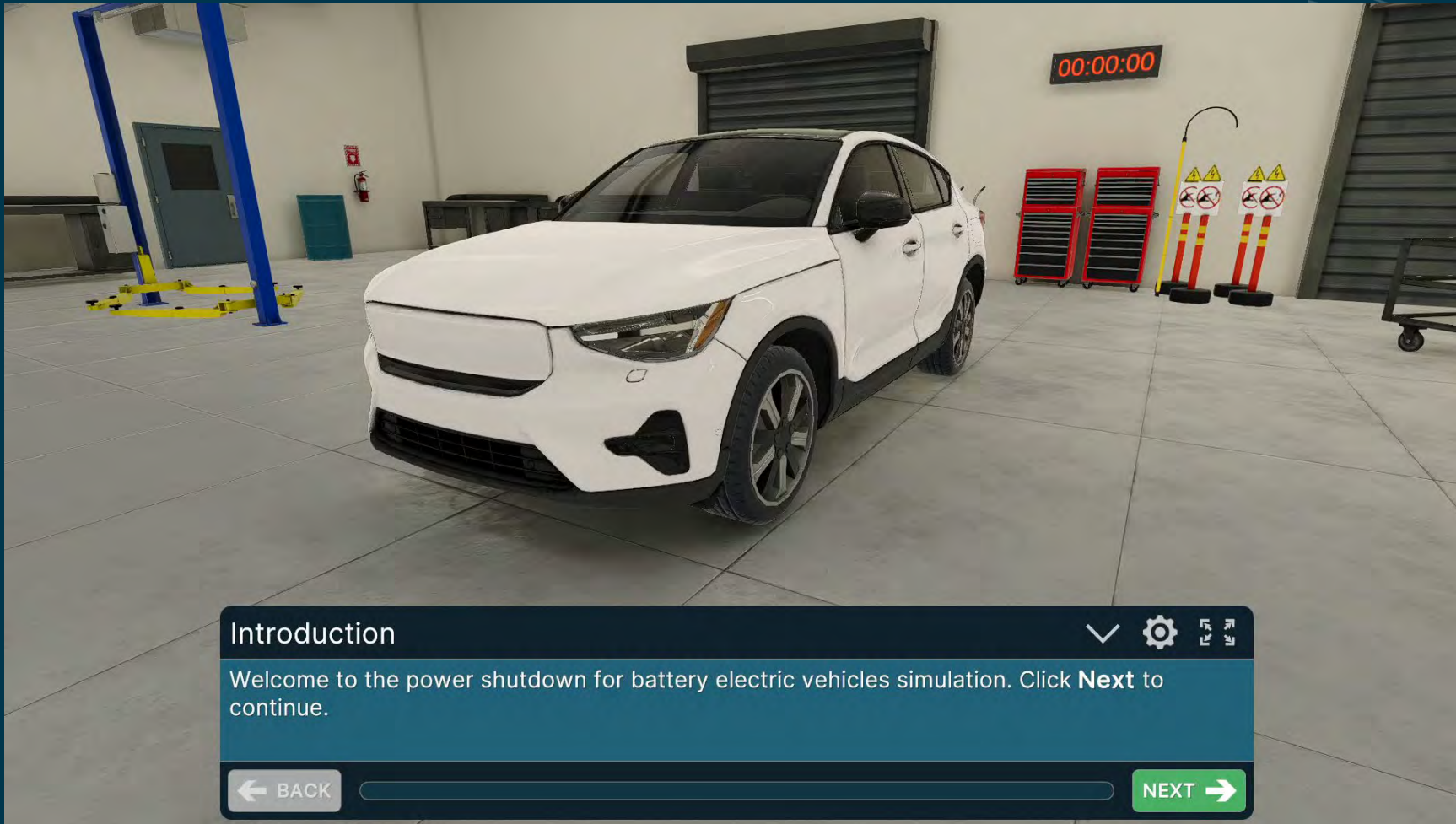
# VR Simulation: Main EV Components



# VR Simulation: Live-Dead-Live Test



# VR Simulation: BEV HV System Power Shutdown



## Introduction

Welcome to the power shutdown for battery electric vehicles simulation. Click **Next** to continue.

← BACK

NEXT →

# Assessment Examples

## Module 1 Assessment 1

Bookmark this page

Take your time to read each question. Once you have selected your answer(s), keep in mind that NO changes can be made, so choose thoughtfully!

1 point possible (graded)

What is the primary purpose of NFPA 70E in the workplace?

Select the correct option.

- Ensuring compliance with traffic safety regulations
- Providing guidelines for electrical safety practices
- Setting standards for fire escape routes
- Regulating workplace hygiene standards

Save

Submit

You have used 0 of 1 attempt

## Module 1 Assessment 2

1 point possible (graded)

Which stage of a thermal runaway event in a battery involves a rapid rise in temperature?

True or False:

- Initiation stage
- Termination stage
- Acceleration stage
- Stabilization stage

Save

Submit

You have used 0 of 1 attempt

## Module 1 Assessment 3

Bookmark this page

### Module 1 Assessment 3

1 point possible (graded)

What do OSHA's Right to Know Laws primarily aim to do?

Select the correct option.

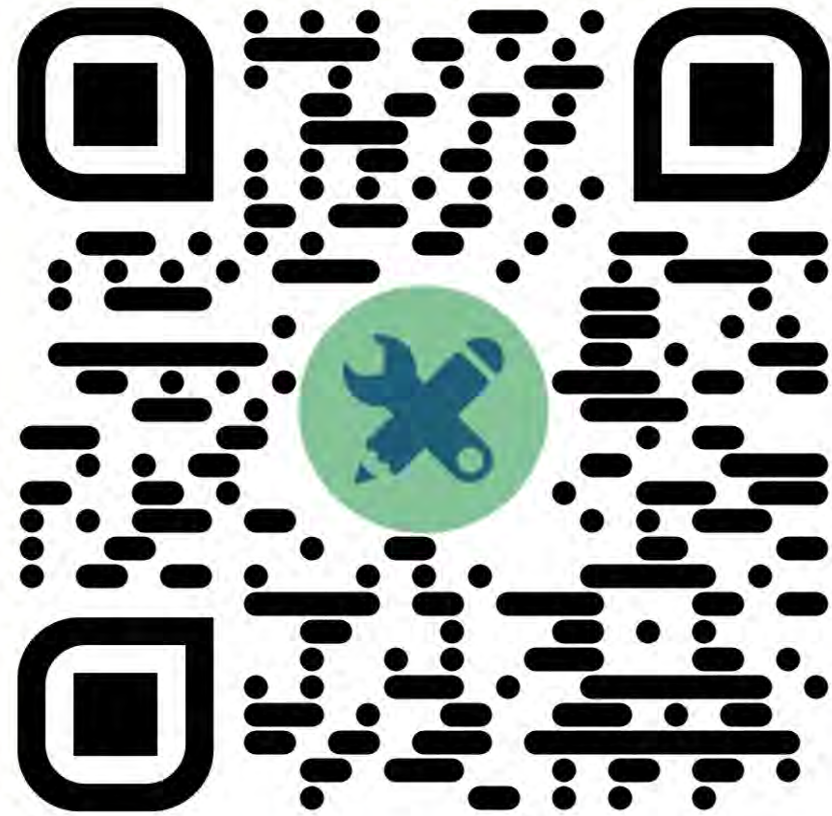
- Ensure fair wages for employees
- Protect workers from chemical hazards and inform them about the dangers
- Regulate working hours for employees
- Enforce proper ergonomic practices in the workplace

Save

Submit

You have used 0 of 1 attempt

Pilot it!



PILOT ACCESS





# Thank You

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