

ELECTRIC VEHICLES FUNDAMENTALS

Comprehensive Training Program

AS OF 2022, THERE WERE NEARLY 20 MILLION ELECTRIC VEHICLES (EV) ON THE ROAD AROUND THE WORLD*

To help meet the growing demand for EVs and battery-operated devices, SME is introducing its first Electrification Certification, Electric Vehicles Fundamentals, to increase talent in the EV industry. This credential is designed for entry-level positions in the areas of automotive assembly and production for electric vehicles. The EV Fundamentals will also provide the necessary skills for individuals with no background in vehicle production and assembly or for individuals who have experience in this area but need to tailor their knowledge to the EV market. The credential is ideal for high school and college students, dislocated workers, under-employed individuals, veterans, at-risk youth, and others who are seeking new employment in a new, fast-growing industry.

SHORT-TERM, COMPREHENSIVE TRAINING

The online classes from Tooling U-SME cover topics agreed upon by manufacturing experts as being relevant for foundational EV knowledge across a wide-range of industries. The information is presented in an engaging and interactive format for maximum effectiveness, and pre-and post assessments measure a student's increased knowledge. Classes are self-paced, typically taking 60 minutes to complete. The training program can be completed in just a few weeks (typically less than one month). They are conveniently accessible anytime, anywhere on desktops and laptops, and on tablets and phones with the Tooling U-SME app.

* Alliance for Automotive Innovation's 2022 Industry Report

BUILD A COMPREHENSIVE FOUNDATION OF KNOWLEDGE

This program focuses on the fundamentals of electric vehicles required as a starting point for any career pathway a candidate may pursue in the field of EV:

EV Production and Assembly	Robotics
Safety	Electrical Units
Quality	Power Sources and Variables
Measurement	Battery Components and Management
Math Fundamentals	Fundamentals of Electric Mobility
Blueprint Reading	

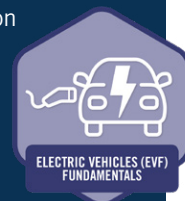
EARN A NATIONALLY RECOGNIZED CERTIFICATION

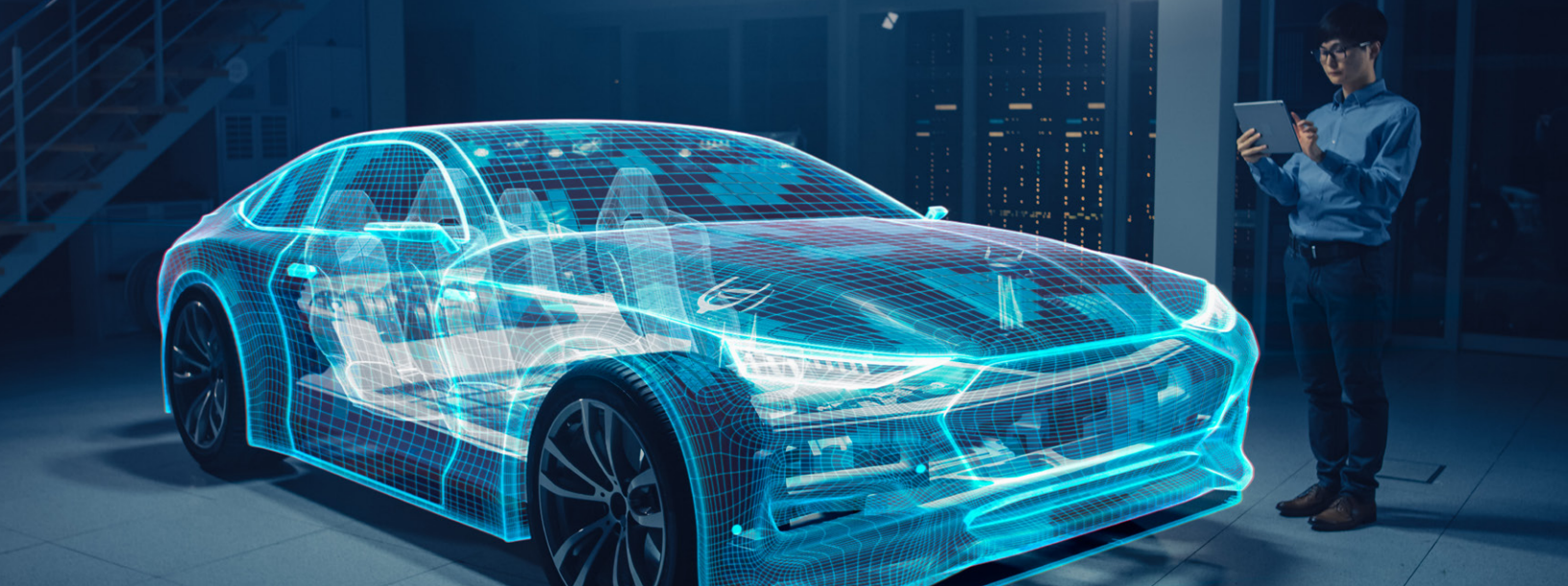
The SME Electric Vehicles Fundamentals (EVF) is focused on the fundamentals of Electric vehicles. The credential can help individuals begin a lifelong career in a growing industry where there is opportunity for advancement and good-paying jobs.

sme.org/EVF

GAIN VISIBILITY WITH A DIGITAL BADGE

Upon passing the certification exam, individuals will earn a digital badge, providing enhanced opportunities to share their qualifications and get discovered by employers.





ELECTRIC VEHICLES FUNDAMENTALS

High Energy Batteries

Lithium Ion Battery Handling & Safety

Introduction to Electric Mobility
Manufacturing

Overview of Electric Vehicle
Components

Lockout/Tagout Procedures

SDS and Hazard Communication

Hazardous Materials Handling

Bloodborne Pathogens

Fire Safety and Prevention

Ergonomics

Arc Flash Safety

High Voltage Safety

Machine Guarding

Light Curtains Overview

Lean Manufacturing Overview

Quality Overview

Blueprint Reading

Basic Measurement

Nondestructive Testing

Inspecting with CMMs

Introduction to CMM Arms

Introduction to Laser Trackers

Structured Light 3D Scanners

3D Laser Scanners

Intro to OSHA

5S Overview

Cell Design and Pull Systems

Metrics for Lean

Total Quality Management Overview

Value Stream Mapping: The Current
State

Value Stream Mapping: The
Future State

Continuous Process Improvement:
Managing Flow

Continuous Process Improvement:
Identifying and Eliminating Waste

Personal Protective Equipment

ISO 9001: 2015 Review

IATF 16949:2016 Overview

Quality and Customer Service

Intro to Adhesive Bonding

Intro to Coating Composition

Introduction to Assembly

Abrasive Finishing Processes

Electrical Units

Safety for Electrical Work

DC Power Sources

Battery Selection

Introduction to Mechanical Systems

Introduction to Fluid Systems

Introduction to Welding

Introduction to Welding Processes

Overview of Soldering

Introduction to Automation

Introduction to Additive
Manufacturing

Additive Manufacturing Safety

The Basic Additive Manufacturing
Process

Additive Manufacturing Methods
and Materials

The Additive Manufacturing
Supply Chain

Design for Additive Manufacturing

Additive Manufacturing Materials
Science

Additive Manufacturing as a
Secondary Process

Introduction to Robotics

Robot Safety

Robot Application

Robot Axes and Pathways

Introduction to Collaborative Robots

Introduction to Smart Manufacturing

Introduction to the Industrial Internet
of Things

Introduction to Digital Twin

Essentials of Communication

Conflict Resolution Principles

Conflict Resolution for Different
Groups

Team Leadership

Managing the Diverse Workplace

Wire Harness Components