



**CENTER for
ECONOMIC
GROWTH**

CERTIFICATION

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.

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

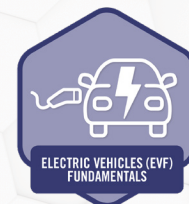
EARN A NATIONALLY RECOGNIZED CERTIFICATION

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

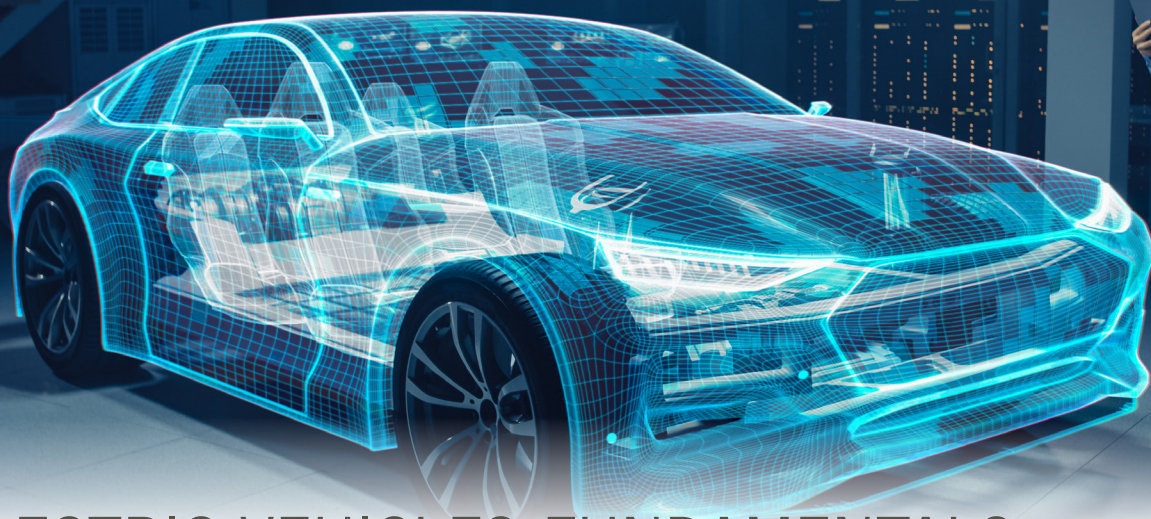
GAIN VISIBILITY WITH A DIGITAL BADGE

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



Choose a starting point based on employee's experience or company goals for a quick-start training solution.

ELECTRIC VEHICLES FUNDAMENTALS (EVF)



ELECTRIC VEHICLES FUNDAMENTALS

High Energy Batteries	Cell Design and Pull Systems	Introduction to Additive Manufacturing
Lithium Ion Battery Handling & Safety	Metrics for Lean	Additive Manufacturing Safety
Introduction to Electric Mobility Manufacturing	Total Quality Management Overview	The Basic Additive Manufacturing Process
Overview of Electric Vehicle Components	Value Stream Mapping: The Current State	Additive Manufacturing Methods and Materials
Lockout/Tagout Procedures	Value Stream Mapping: The Future State	The Additive Manufacturing Supply Chain
SDS and Hazard Communication	Continuous Process Improvement: Managing Flow	Design for Additive Manufacturing
Hazardous Materials Handling	Continuous Process Improvement: Identifying and Eliminating Waste	Additive Manufacturing Materials Science
Bloodborne Pathogens	Personal Protective Equipment	Additive Manufacturing as a Secondary Process
Fire Safety and Prevention	ISO 9001: 2015 Review	Introduction to Robotics
Ergonomics	IATF 16949:2016 Overview	Robot Safety
Arc Flash Safety	Quality and Customer Service	Robot Application
High Voltage Safety	Intro to Adhesive Bonding	Robot Axes and Pathways
Machine Guarding	Intro to Coating Composition	Introduction to Collaborative Robots
Light Curtains Overview	Introduction to Assembly	Introduction to Smart Manufacturing
Lean Manufacturing Overview	Abrasive Finishing Processes	Introduction to the Industrial Internet of Things
Quality Overview	Electrical Units	Introduction to Digital Twin
Blueprint Reading	Safety for Electrical Work	Essentials of Communication
Basic Measurement	DC Power Sources	Conflict Resolution Principles
Nondestructive Testing	Battery Selection	Conflict Resolution for Different Groups
Inspecting with CMMs	Introduction to Mechanical Systems	Team Leadership
Introduction to CMM Arms	Introduction to Fluid Systems	Managing the Diverse Workplace
Introduction to Laser Trackers	Introduction to Welding	Wire Harness Components
Structured Light 3D Scanners	Introduction to Welding Processes	
3D Laser Scanners	Overview of Soldering	
Intro to OSHA	Introduction to Automation	
5S Overview		