

AUTOMOTIVE TECHNOLOGY: ELECTRIC VEHICLE TECHNICIAN CERTIFICATE

Program code: AUTO-CC-EVT

Location: Gateway

Program Description

The Electric Vehicle Technician Certificate focuses on the operation, maintenance, diagnosis and repair of electric vehicle systems. The rapid growth in Electric Vehicles (EVs) has created the need for skilled EV maintenance and repair technicians. The certificate is designed for students who have successfully completed (or are working toward), the CT State CARS Automotive Certificate or Degree. Upon completion of the CARS and EV programs, graduates will be prepared for entry-level automotive service technician positions and additionally will be familiar with the unique safety, operation, and general service procedures of electric vehicles.

Learning Outcomes

1. Demonstrate knowledge of all Automotive Service Excellence (ASE) Foundational Electric Vehicle xEV* Safety Tasks per master accreditation standards. * xEV – Any electrified propulsion vehicle with a high-voltage system, including, but not limited to, HEV, PHEV, PEV, BEV, FCEV, and EV (SAE J1715-1 SEP 2022).
2. Demonstrate understanding of the different principles, designs and classifications of electric vehicles.
3. Research and discuss the environmental and economic impact of electric vehicles.
4. Research and discuss current market trends and outlook for electrified vehicles.
5. Locate procedures to safely de-energize/disable and energize/enable high-voltage systems.
6. Demonstrate understanding of basic EV charging infrastructure and types of charging stations.
7. Identify potential safety and materials handling concerns associated with high-voltage battery/energy storage systems.
8. Demonstrate understanding of EV components and their functions, including batteries.
9. Demonstrate knowledge of special multimeters, insulated tools, and other test equipment required for use in high-voltage circuits.
10. Demonstrate knowledge of the use of a live-dead-live/zero potential test to verify isolation of the high-voltage battery/energy storage system.
11. Demonstrate knowledge of the testing and verification of ground circuit isolation between vehicle chassis ground and the high-voltage circuits and components.
12. Demonstrate knowledge of safe handling procedures associated with high-voltage A/C compressors and wiring.
13. Demonstrate knowledge of high-voltage thermal management systems.
14. Demonstrate knowledge of safe handling procedures associated with high-voltage powertrain components, such as electric motors.

Certificate Requirements

Code	Title	Credits
AUTO 1131	Intro to Electric Vehicles	3
AUTO 1132	Electric Vehicle (EV) Operation, Maintenance and Light Repair	3
AUTO 1133	Electric Vehicle (EV) Diagnosis and Repair	3
Choose one of the following:		3
AUTO 1030	Automotive Maintenance and Light Repair	
AUTO 1010	Introduction to General Motors Automotive Systems	
AUTO 1101 & 1101L	Honda Express Service Theory and Honda Express Service Lab	
Choose one of the following:		3
AUTO 1033	Electrical/Electronics Systems	
AUTO 1016	General Motors Electrical Systems	
AUTO 1110 & 1110L	Honda Electrical Systems Theory and Honda Electrical Systems Lab	
Elective(s)		3
AUTO 1031	Engine Repair	
AUTO 1037	Engine Performance	
AUTO 1018	General Motors Engine Propulsion Systems	
AUTO 2001	General Motors Powertrain Control System	
AUTO 2101 & 2101L	Honda Engine Performance Theory and Honda Engine Performance Lab	
Total Credits		18

- Automotive Technology: Advanced Engine Performance Certificate
- Automotive Technology: Automotive Management, AS
- Automotive Technology: Comprehensive Automotive Repair and Service (CARS) Certificate
- Automotive Technology: Comprehensive Automotive Repair and Service (CARS), AS
- Automotive Technology: Fundamentals Certificate
- Automotive Technology: General Auto Service Certificate
- Automotive Technology: General Motors Automotive Service Certificate
- Automotive Technology: General Motors Automotive Service Education Program (ASEP), AAS
- Automotive Technology: Honda Express Technician Certificate
- Automotive Technology: Honda Professional Auto Career Training (PACT) Auto Service Certificate
- Automotive Technology: Honda Professional Automotive Career Training (PACT), AAS