TOOL KIT

EV SKILLS

Vos cpa

INNOVISTE
VECTEUR DE L'INDUSTRIE
DES VÉHICULES MOTORISÉS

EV SKILLS

AUTOMOTIVE MECHANICS

24 25

VERSION 09-2024

certification exam

Why certification?

The certification exam is an assessment tool that aims to certify that your acquired knowledge and skills will allow you to repair and maintain electric vehicles properly and safely.

The exam is identical throughout Quebec. The certificate obtained upon successful completion is recognized by the industry and will follow the mechanic.

For the mechanic

It is the recognition of his skills and the improvement of his working conditions.

For the employer

This is the certification of the mastery of skills of its staff.

For the public

It is a guarantee of trust and security.

Course towards certification

Self-assessment

Duration: 1 hour 30 minutes

Link: www.competencesve.ca

Description: This allows you to take stock of the candidate's skills. In other words, it is a portrait of the skills acquired and those missing.

Formation

Link: www.competencesve.ca

Description: Training is available according to the skills to be worked on. With the help of a training advisor in your regional organization, it is possible to set up a training plan adapted to the needs of each candidate.

Certification exam

Exam: EV Skills - Automotive

Location: CPA in your region or professional training center authorized by the EV Skills program.

Description: The certification exam includes a theoretical component only.

Exam theoretical

CPA in your area

150 minutes

Number of questions: 70 from a bank (random)

Distribution of questions:

25 % Knowledge

50 % Understanding

25 % Diagnosis

Passing grade: 60%

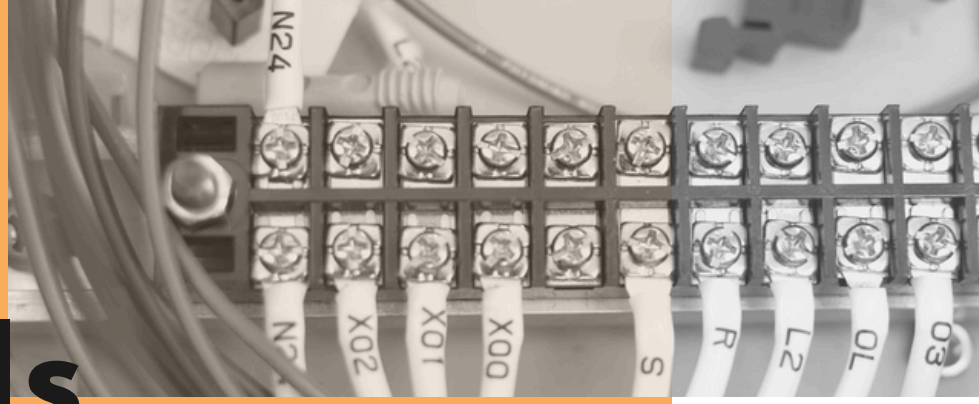
Success: Certification

Right to retake the exam: 3 months

It is possible to perform a simulation from home to get an idea of the types of questions: CLICK HERE

Progress

- A computer is assigned to each candidate upon arrival.
- The supervisor will remind you of the rules for the exam.
- It is possible to raise your hand to ask questions that relate to the use of the software or the computer only.
- The software allows you to navigate between questions, allowing you to review at the end.
- Cell phones, lighters and other computer devices must be handed over to the supervisor upon arrival.
- You are entitled to your own personal headphones if you wish (the software allows automated reading of questions).



The skills

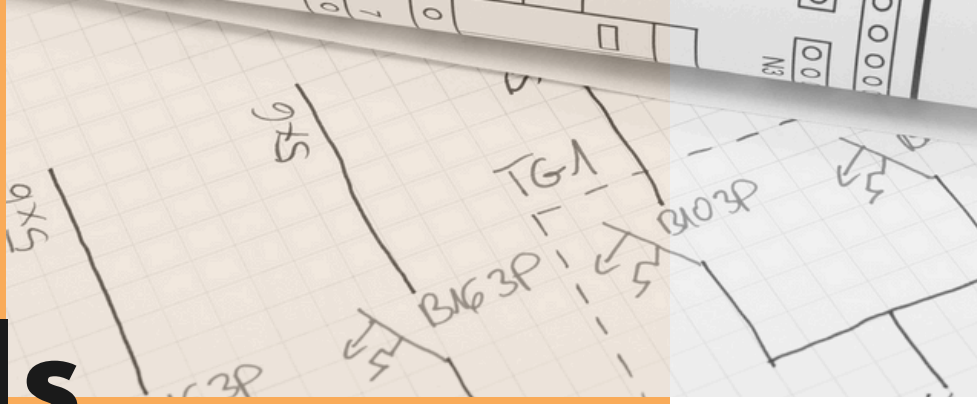
General Electricity and Electronics (Basic)

	Know and recognize roles and functions	Understand how it works	Diagnose and understand problems
The nature and properties of electricity	☑	☑	☑
The general operation of a vehicle	☑	☑	☑
Low voltage systems	☑	☑	
Maintenance and repair of electrical circuits	☑	☑	☑
The operation of computer system circuits and network communication	☑	☑	☑

The skills

Hybrid and electric vehicles

	Know and recognize roles and functions	Understand how it works	Diagnose and understand problems
High voltage systems	☑	☑	☑
Maintenance and repair of regenerative braking system and driver assistance system components	☑	☑	☑
Maintenance and repair of propulsion system components	☑	☑	☑
Maintenance and repair of thermal management systems	☑	☑	☑



The skills

Common professional skills

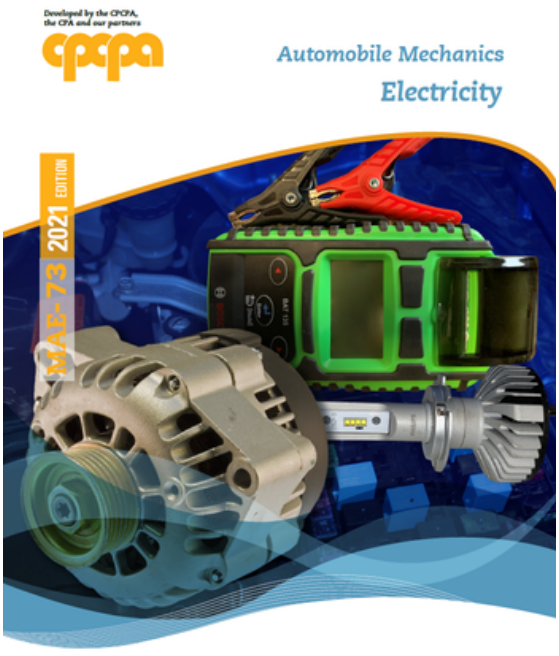
	Know and recognize roles and functions	Understand how it works	Diagnose and understand problems
Organization and planning of work	☑	☑	
Use of tools and equipment	☑	☑	
Use of technical documentation and electrical diagrams	☑	☑	☑
Health and safety	☑	☑	☑

TRAINING

Level 1
Electricity

Description

At the end of this training, the participant will be able to understand and master the concepts of basic electricity as well as the operation of the different systems that ensure the proper functioning of a motor vehicle.



Duration of training: 28 h

Course objectives

- Know the nature of electricity, the particularities of the components and the different connections which form an electrical circuit.
- Master the main functions of your multimeter in order to measure the different electrical properties of a circuit.
- Recognize the many symbols and interpret electrical plans.
- Know the different types of batteries on the market, their particularities and the methods for validating their condition.
- Know how the alternator works, the new strategies used by on-board computers and how to access their data.
- Become familiar with the use of a multimeter and clamp meter to determine the integrity of the starter's main power circuit and charging system.
- Perform tests and diagnostic approaches on charging and starting systems when they are in trouble.

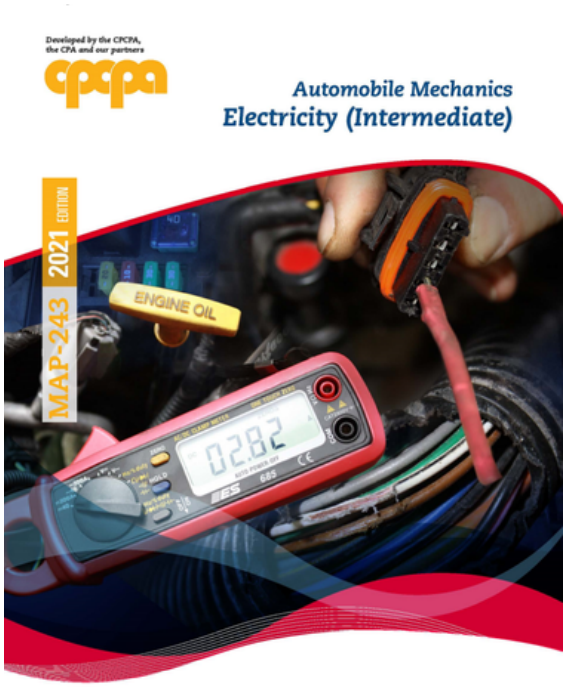
TRAINING

Level 2
Electricity (Intermediate)

DESCRIPTION

This training is part of a series of 3 levels of improvement (basic, intermediate and advanced) related to the electrical and electronic systems of a motor vehicle.

At the end of this training, the participant will be able to make the right choice of tools when working on electronic components, to understand an electrical diagram as well as the different network systems and will be able to carry out tests and diagnostic approaches on the systems when they are in problem.



Duration of training: 35 H

COURSE OBJECTIVES

- Make the choice of suitable tools during diagnostics;
- Understand how different sensor families work and how they work electrically;
- Understand the different types of diagrams as well as the different symbols;
- Understand how current flow works in an electrical diagram;
- Recognize and understand the different communication networks;
- Perform testing and diagnostic approaches on different systems.

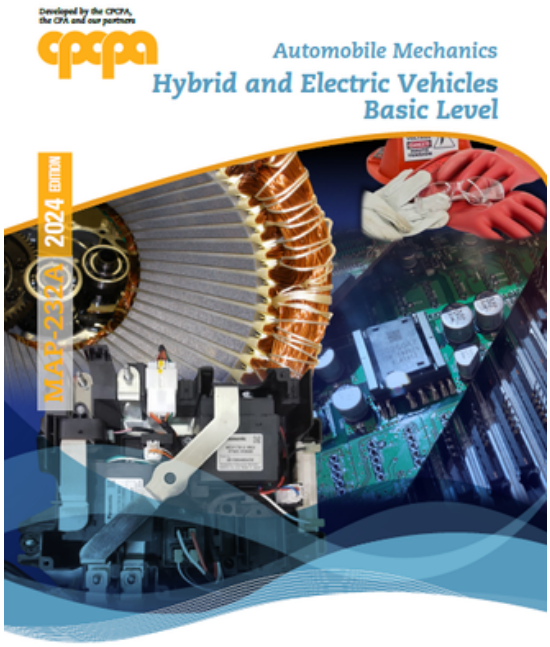
TRAINING

Level 3
Hybrid and Electric Vehicles Basic Level

Description

This new course adapts to the new realities of automotive technicians by considering all the basic systems of hybrid and electric vehicles that have been available on the market for several years now.

This course will help the technician to understand the differences that determine the various applications of each model on the market, the components and their general operating principles, safety rules and various safe methods of intervention.



Duration: : 7 h

Objectives

- Identify and describe the main system components of the various types of vehicles: hybrid, plug-in hybrid, electric and fuel cell.
- Explain the operating principle of various systems and relate them to the vehicles available on the market.
- Locate the high voltage components of each type of system and explain their role and operation, as well as their maintenance.
- Determine the potential hazard of high voltage components.
- Disable systems on various types of vehicle safely.

TRAINING

Level 4
Hybrid and Electric Vehicles 2

Description

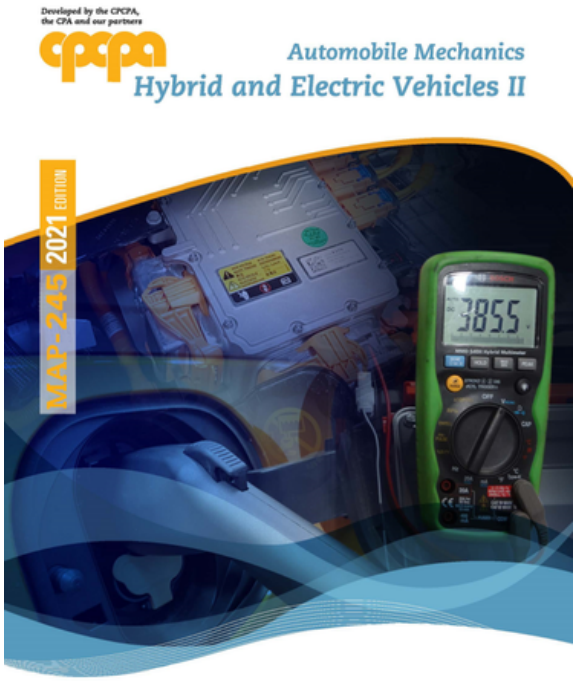
This new course has adapted to the new realities of automotive technicians by considering all the basic systems of hybrid and electric vehicles that have been available on the market for several years now.

This course will help the technician to understand the differences that determine the various applications of each model on the market, the components, and their general operating principles, safety rules, and various safe intervention methods.

Objectives

Upon completion of this course, the technician will be able to:

- Understand, safely handle, and disable various major components of hybrid and electric vehicle (HEV) systems.
- Perform the removal of HEV battery and perform various verifications on high voltage components, in order to take all necessary steps prior to performing maintenance and repair work on the subjects covered.



Duration: 21 h

TRAINING

Level 5
Hybrid and electric vehicles 3

Description

This course adapts to the reality of today's automotive technicians by taking into account the advanced systems of hybrid and electric vehicles available on the market for several years now.

This course will help the technician to understand and diagnose the various applications of charging systems and high voltage accumulators, their components and general operations, safety rules as well as the different safe intervention methods.

Duration of training: 63 h

Course objectives

- Identify the characteristics of various types of batteries.
- Understanding the battery management system.
- Identify the different sensors.
- Identify the different cell configurations in high voltage battery from different manufacturers.
- Check and explain the charge level and health of a high voltage battery.
- Identify the causes of cell degradation.
- Diagnose a high voltage battery.
- Understanding the different recharge levels.
- Diagnose locking systems and charging problems.

certification exam

EV SKILLS

AUTOMOTIVE MECHANICS

Conseil provincial des comités paritaires de l'industrie des services automobiles

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