



# Electric Vehicle Maintenance Technology - EVM 501

## Trades Training

### Program Outline

PROGRAM IMPLEMENTATION DATE: September 2023  
OUTLINE EFFECTIVE DATE: September 2023  
PROGRAM OUTLINE REVIEW DATE: March 2028

---

#### GENERAL PROGRAM DESCRIPTION:

This program introduces automotive service technicians to the safe handling procedures associated with battery electric and hybrid vehicle systems. Students will learn how to use personal protective equipment (PPE) associated with high voltage and demonstrate the use of category 3 meters, insulated hand tools and equipment used with electric vehicles. Students will also learn to test and replace high voltage batteries, battery modules, individual battery cells and voltage relays. Safe work practices related to electric vehicles are strongly reinforced and emphasized in this program.

---

**Credentials Granted:** Zero Emissions Vehicle Technology and Service Associate Certificate.

---

**Delivery:** This program is delivered hybrid (face to face and online).

**Credits:** 2

**Time for this program:** 30 hours (24 hours face to face and 6 online hours)

#### Structure of Instructional Hours:

Instructional Activity	Duration
Instructional Hours	24 hrs
Directed Studies (Online)	6 hrs
Total Program Hours	30 hrs

#### Practicum Hours (if applicable):

Type of Practicum	Duration
On-the-job Experience	N/A
Formal Work Experience	N/A
Other	N/A
<b>Total</b>	

**Program Outline Author or Contact:**

John White, Automotive RSE, PID

\_\_\_\_\_  
Signature

**APPROVAL SIGNATURES:**

Department Head

Joy Brown

E-mail: [jbrown3@cotr.bc.ca](mailto:jbrown3@cotr.bc.ca)

Dean of Trades and Technology

Dr. Jack Moes

E-mail: [jmoes@cotr.bc.ca](mailto:jmoes@cotr.bc.ca)

\_\_\_\_\_  
Department Head Signature

\_\_\_\_\_  
Dean Signature

EDCO

Valid from: September 2023 – March 2028

\_\_\_\_\_  
Education Council Approval Date

**PROGRAM ADMISSION REQUIREMENTS AND TRANSFER CREDIT:**

**Admission Requirements:** Red Seal Automotive Service Technician OR have completed Level 3 Automotive Service Technician Apprenticeship Program.

**Flexible Assessment (FA):**

Credit can be awarded for this program through FA

Yes

No

**Prior Learning Credit:** N/A

**Prior Program Number:** N/A

## Textbooks and Required Resources:

Textbook selection varies by instructor and may change from year to year. At the Program Outline Effective Date the following textbooks were in use (most current edition):

Hybrid and Electric Vehicle Technology and Service Manual, College of the Rockies package

Please see the instructor's syllabus or check COTR's online text calculator <https://textbook.cotr.bc.ca/> for a complete list of the currently required textbooks.

---

## TECHNICAL TRAINING CONTENT AND PROGRAM COMPETENCIES:

### EVM 501

- describe battery electric vehicle systems
- use appropriate PPE associated with high voltage
- demonstrate the use of category 3 meters, insulated hand tools and equipment used with electric vehicles
- describe high voltage electric motors
- perform high voltage safety plug removal on various models
- test and replace high voltage batteries, battery modules, and individual battery cells
- test and replace high voltage relays

See instructor's syllabus for the detailed outline of weekly readings, activities and assignments.

---

## EVALUATION AND ASSESSMENT:

Assignments	% Of Total Grade
Module Exam 1	5%
Module Exam 2	5%
Module Exam 3	5%
Class Participation	10%
Shop Practical Projects	25%
Final Exam (Open Book)	50%
Total	100%

All program work must achieve a minimum overall grade of 80%.

---

## SAFETY:

WorkSafeBC regulations apply to all trades programs. Students are expected to follow all safe work practices and have high regard for the safety of others as well as of themselves. Students are responsible to wear personal protective equipment (PPE) as directed. At a minimum, students must provide and wear approved safety footwear and eyewear at all times in the shop. Additional PPE may be required for specific tasks. Students are expected to wear clothing suitable for working safely in the shop.

---

**STUDENTS MUST PROVIDE THEIR OWN:**

- CSA-approved Steel-toed boots footwear CAN/CSA-Z195-02 (Green Triangle)
  - CSA-approved safety glasses CAN/CSA-Z94.3-92
- 

**EXAM POLICY:**

Students must attend all required scheduled tests and exams that make up a final grade at the appointed time and place.

Individual instructors may accommodate for illness or personal crisis. Additional accommodation will not be made unless a written request is sent to and approved by the appropriate Department Head prior to the scheduled exam.

Any student who misses a scheduled test or exam without approval will be given a grade of “0” for the exam.

---

**PROGRAM GRADE:**

Program grades are assigned as follows:

<b>COM</b>	Completed to defined standard $\geq 80\%$
<b>NCG</b>	No Credit Granted $\leq 80\%$

---

**ACADEMIC POLICIES:**

See [www.cotr.bc.ca/policies](http://www.cotr.bc.ca/policies) for general college policies related to program activities, including grade appeals, cheating and plagiarism.

---

**PROGRAM CHANGES:**

Information contained in program outlines is correct at the time of publication. Content of the program is revised on an ongoing basis to ensure relevance to changing educational, employment, and marketing needs. The instructor endeavours to provide notice of changes to students as soon as possible. The instructor reserves the right to add material to programs.