

# AUTOMOTIVE HYBRID ELECTRIC VEHICLES (HEV) TECHNICIAN - LEVEL 1 - CAREER PATHWAY CERTIFICATE OF COMPLETION (CPCC)

## Description

The Automotive Hybrid Electric Vehicles Technician Level 1 Career Pathway Certificate of Completion trains students to be the key troubleshooter of a vehicle's drivability problems. Students learn to identify everything from power-train malfunctions to ignition failures using state-of-the-art computer diagnostic equipment. Students will also diagnose systems on vehicles with electric drive systems.

[The certificate](#) prepares students for the [Automotive Service Excellence certification](#) in (A6) Automotive Electrical/Electronic Systems and (L3) Light Duty Hybrid/Electric Vehicle Specialist.

### Program Learning Outcomes

Upon successful completion of the certificate, students will be able to:

1. Demonstrate appropriate basic technical knowledge and practical skills necessary for employment in automotive technology from previous basic skills courses plus second-level electrical/electronic courses.
2. Develop diagnosis and repair procedures for hybrid electric and electric vehicles.
3. Describe hybrid safety and service procedures along with first responder safety and procedures.
4. Describe hybrid batteries and service, hybrid electric motors, generators, and controls.
5. Describe regenerative braking systems, hybrid vehicle transmissions, and transaxles.
6. Perform vehicle diagnosis using manufacturer and generic scan tools.

## Entrance Requirements

### Academic Entrance Requirements

Required:

- Students must complete the following five courses before enrolling in other AUT courses: AUT 101 Basic Electricity for Automotive, AUT 106 Automotive Program Orientation, AUT 107 Mechanical Systems I, AUT 110 Small Gas Engines, and AUT 115 College Success for Automotive Technology
- Students must complete driving history verifications with COCC Campus Services Department during Automotive Program Orientation AUT 106
- Students must currently possess and maintain a valid Class C driver's license while enrolled in Automotive Programs except (AUT 101, AUT 107, AUT 110, AUT 115, and MFG 103 may be taken without a driver's license or driving history check)

Recommended:

- High school diploma or GED

## Additional Costs (Beyond Standard Tuition/Fees and Textbooks)

### Material Costs

- Automotive Service Excellence certification: up to \$450 total for all eight areas of testing
- Tools: \$1,500 to \$2,500
- Materials (coveralls, safety glasses, work jacket, safety shoes, t-shirts): \$200

### Enrollment Fees

- All AUT courses AUT 260 Diesel Performance II and higher: \$200 course fee
- All AUT courses lower than AUT 260 Diesel Performance II: \$15 course fee

## Course Requirements

Course	Title	Credits
<b>Core Courses</b>		
AUT 101	Basic Electricity for Automotive	2
AUT 102	Automotive Electric I	4
AUT 103	Automotive Electric II	2
AUT 104	Automotive Electric III	2
AUT 105	Diesel Performance I	2
AUT 106	Automotive Program Orientation	1
AUT 107	Mechanical Systems I	3
AUT 110	Small Gas Engines	3
AUT 111	Computerized Engine Controls	5
AUT 115	College Success for Automotive Technology	2
AUT 205	Engine Performance I	2
AUT 206	Engine Performance II	2
AUT 279	Hybrid Electric Vehicles I	4
<b>Total Credits</b>		<b>34</b>

## Performance Standards

- Academic Requirements:
  - Students must have a 2.0 cumulative GPA to earn a COCC certificate or degree.
  - All courses in the program must be completed with a grade of C or higher.

## Sample Plan

### First Year

Fall		Credits
AUT 101	Basic Electricity for Automotive	2
AUT 106	Automotive Program Orientation	1

AUT 107	Mechanical Systems I	3
AUT 110	Small Gas Engines	3
AUT 115	College Success for Automotive Technology	2
<b>Credits</b>		<b>11</b>
<b>Winter</b>		
AUT 102	Automotive Electric I	4
AUT 103	Automotive Electric II	2
AUT 205	Engine Performance I	2
<b>Credits</b>		<b>8</b>
<b>Spring</b>		
AUT 104	Automotive Electric III	2
AUT 111	Computerized Engine Controls	5
AUT 206	Engine Performance II	2
<b>Credits</b>		<b>9</b>
<b>Second Year</b>		
<b>Fall</b>		
AUT 279	Hybrid Electric Vehicles I	4
AUT 105	Diesel Performance I	2
<b>Credits</b>		<b>6</b>
<b>Total Credits</b>		<b>34</b>