

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 in figuring out a vehicle's drivability problems. Students learn to identify everything from power-train malfunctions to ignition failures and other engine-related problems using state-of-the-art computer diagnostic equipment, as well as the best way to fix the problem for the client. Students will be introduced to hybrid (HEV) and electric (EV) vehicles to study and apply skills on diagnosing systems on an array of vehicles with electric drive systems. This coursework applies toward ASE certification (<https://www.ase.com/Home.aspx>) in (A6) Automotive Electrical/Electronic Systems and (L3) Light Duty Hybrid / Electric Vehicle Specialist.

Learning Outcomes

- 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.
- Develop diagnosis and repair procedures for HEV (hybrid electric) and EV (electric vehicles).
- Describe hybrid safety and service procedures along with First Responder safety and procedures.
- Describe hybrid batteries and service, hybrid electric motors, generators, and controls
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- Describe regenerative braking systems, hybrid vehicle transmissions and transaxles
- Perform vehicle diagnosis using manufacturer and generic scan tools.

Entrance Requirements

Academic Entrance Requirements

- Required:
 - Students must complete the following five courses prior to proceeding into 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.
- Recommended:
 - High school diploma or GED.

Additional Program Costs (beyond standard tuition/fees and textbooks)

Material costs

- Materials (coveralls, safety glasses, work jacket, safety shoes, t-shirts): \$200
- ASE (Automotive Service Excellence) Certification – up to \$450 total for all eight areas of testing
- Cost of tools: \$1,500 to \$2,500 depending on the source

Enrollment fees

- All AUT prefix courses up to AUT 260 Diesel Performance II have a \$15 course fee
- All advanced AUT courses (AUT 260 Diesel Performance II and above) have a \$200 course fee

Course Requirements

Course	Title	Credits
Core Courses		
AUT 101	Basic Electricity for Automotive	2
AUT 102	Automotive Electric I	5
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 280	Hybrid Electric Vehicles I	4
Total Credits		35

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
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Credits		11
Winter		
AUT 102	Automotive Electric I	5
AUT 103	Automotive Electric II	2
AUT 105	Diesel Performance I	2
AUT 205	Engine Performance I	2
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Credits		11
Spring		
AUT 104	Automotive Electric III	2
AUT 111	Computerized Engine Controls	5
AUT 206	Engine Performance II	2
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Credits		9
Second Year		
Fall		
AUT 280	Hybrid Electric Vehicles I	4
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Credits		4
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Total Credits		35