ADVANCED AUTOMOTIVE HYBRID AND ELECTRIC VEHICLE CERTIFICATE OF ACHIEVEMENT

This certificate will include the theory and operation of hybrid and electric vehicle operation. Each of the major manufacturers' vehicles is discussed along with the safety and service procedures that apply to these vehicles. Hands-on activities include major service procedures and basic diagnostics on the most common hybrid and electric vehicles in the market today. with hands-on course provides an overview of both conventional and alternative fuels with their impact on vehicle emissions in gasoline engines. In addition, advanced vehicle technologies such as hybrid electric, direct injection, and fuel cells are explored. Topics include gasoline, E85, M85, CNG, LPG, RNG, RVs, HEVs, Fuel Cells, and dynamometer testing. Completion of this course helps students prepare for the Automotive Service Excellence (ASE) F1 Alternative Fuels Certification in addition to the ASE L3 Hybrid/Electric Vehicle Specialist Certification.

Required Courses

Course Number	Course Name	Units
AUT 162	Automotive Electrical Systems	5
AUT 166	Automotive Engine Performance	6
AUT 180	Introduction to Hybrid and Alternative Fuel Vehicles	4
AUT 181	Hybrid Vehicles and Advanced Electric Vehicle Technology	4
Total units required for Certificate		**19**

Program Level Student Learning Outcomes:

1. Explain the environmental impacts of fossil fuels, greenhouse gasses, and the need for alternative fuel sources.
2. Explain different manufactures and styles of electric and hybrid systems and explain how they function.
3. Perform high voltage system disable and enable procedures verifying the high voltage shutdown.
4. Demonstrate the appropriate use of high voltage personal protection equipment.
5. Perform a removal of, and the appropriate tests to, the high voltage battery.