



NFPA's Alternative Fuel Vehicles Safety Training Course Curriculum Overview

NFPA's Alternative Fuel Vehicles Safety Training provides firefighters with the information necessary to respond to emergency situations involving all alternative fuel vehicles on our roadways, including electric, hybrid, hydrogen fuel cell, and gaseous fuels such as CNG (Compressed Natural Gas), LNG (Liquefied Natural Gas), LPG (Liquid Propane Gas), and their recharging/refueling stations. This comprehensive full day instructor-led train-the-trainer course is tailored for those responsible for conducting training or training officers, and is comprised of videos, animations, slides, activities, and field evolutions involving AFVs. The curriculum covers:

Module I – Introduction

- Program Overview
- Myths vs. Realities
- History of AFVs

Module II – Basic Electrical Concepts & Hazards

- Basic Electrical Terms
- Understanding Electrical Circuits
- How Electricity Affects the Body

Module III – P/HEV & EV Systems & Safety Features

- Vehicle Types
- P/HEV and EV Components
- P/HEV and EV System Operations
- Charging Stations

Module IV – Initial Response

- Initial Response Actions
- Vehicle Identification
- Vehicle Immobilization
- Disabling Procedures

Module V – P/HEV & EV - Emergency Operations

- Extrication Operations
- High-Voltage (HV) Battery Breach
- Vehicle Submersion
- HV Vehicle Fires & Re-Ignition
- Incidents Involving Charging Stations
- Post-Incident Vehicle Handling
- Case Studies

Module VI – Fuel Cell Vehicles

- Fuel Cell Technology
- System Components & Devices
- Hydrogen Fueling Stations
- Electrolysis
- Tune Trailers
- Emergency Operations

Module VII – Gaseous Fuel Vehicles

- Introduction
 - CNG – Compressed Natural Gas
 - LNG – Liquefied Natural Gas
 - LPG – Liquid Propane Gas
- Vehicle Applications
- System Types

Module VIII – Understanding Gaseous Fuels

- Understanding Gaseous Fuels
- Gaseous Fuel Types & Properties

Module IX – Gaseous Fuel Vehicle Systems & Operations

- Introduction to Gaseous Fuel Systems
- Fuel Storage & Distribution
 - Tanks & Cylinders
 - Fuel Distribution
 - Safety Systems

Module X – Gaseous Fuel Stations

- Fueling Stations
 - CNG
 - LNG
 - LPG
- Fueling Station Safety Systems

Module XI – Gaseous Fuel - Initial Response Procedures

- Identification
- Immobilization
- Disabling Procedures

Module XII – Gaseous Fuel - Emergency Response Procedures

- Crashes & Extrication
- Vehicle Fires
- Incidents Involving Fueling Stations