

CVG01 HEAVY-DUTY TRUCK SYSTEMS (4 DAYS)

The Heavy Duty Truck Systems course is the foundation of the Service Training Academy vehicle training curriculum. In this course, technicians will learn to access and use the DTNA and vendor service literature, which underpins all troubleshooting and repair efforts. Additionally, students will learn the operation, troubleshooting, and repair of many main mechanical systems on heavy-duty vehicles. The systems covered are main and cab air suspension systems and adjustment, clutch, and linkage operation and adjustment, power steering systems, wheel ends, and air brake systems.

CVG02 DTNA INFORMATION RESOURCES (1 DAY)

This course is the foundation of the Service Training Academy vehicle training curriculum. In this course, technicians will learn to access and use the DTNA and vendor service literature that underpins all troubleshooting and repair efforts. By learning the correct way to approach vehicle maintenance, technicians can avoid common pitfalls that cost the technicians and dealerships time and money.

CVE07 ELECTRONIC SYSTEMS (4 DAYS)

Technicians will learn how state-of-the-art electronic control systems on today's medium and heavy-duty trucks generally work, including how ECUs monitor various sensors, determine appropriate actions, and control outputs. They will learn specifically how sensors work and how to confirm the proper operation of various sensors, including speed sensors, temp sensors, position sensors, pressure sensors, and Hall effect sensors. Technicians gain an in-depth understanding of each system, including the location of system components, how the system and components communicate, essential troubleshooting skills, and electrical diagnostics. Course objectives include inputs, outputs, and controls, J1939, multiplexing, CAN networks, DiagnosticLink operation and interpretation, ABS systems troubleshooting, vendor and OEM circuits, and understanding the 7-step troubleshooting process.

CVE06 CEEA+ COMMON ELECTRICAL AND ELECTRONIC ARCHITECTURE (3 DAYS)

This professional level course will provide the technician with an in depth understanding of Common Electrical and Electronic Systems on the DTNA vehicles that utilize it. The CEEA class covers the Single SAM system that is used on the New Cascadia and new Western Star trucks. The class covers the power distribution thru the truck, the electronics, new datalinks, and goes thru the understanding of the wall charts.

CVE12 ELECTRICAL TROUBLESHOOTING (4 DAYS)

Designed to guide technicians through a step-by-step process to understand and analyze electrical circuitry, this course prepares technicians to understand schematic circuitry diagrams and wiring harness drawings, learn best test points, and perform hands-on diagnosis and testing of DTNA vehicles. Technicians will review electrical fundamentals as they apply to DC circuits. They will build series, parallel, and series-parallel circuits, as well as multiple circuits with relays and multiple controls, to understand electrical circuit operation and problem conditions. They will learn when, how, and why to use the various modes of a digital multimeter to isolate problems circuits plus additional resources, including Excelsior, EZWiring, and other DTNA resources.

CVH02 HVAC DIAGNOSTICS (4 DAYS)

Technicians will learn the components, operation, control, and diagnostics of the HVAC system. They will learn fundamental laws of heat energy and heat transfer as related to HVAC systems and will use this knowledge to better understand refrigerant system operation, performance testing, and gauge-driven diagnostics as well as related service procedures, recovery, evacuation, and charging. Technicians will learn where to find maintenance information through various resources as well as techniques on how to service the HVAC system. Course objectives include an overview of heating and A/C systems, auxiliary systems, service and diagnostic procedures, system electrical fundamentals, blend air, performance testing, BPHS system operation, recycling, and safety procedures. This course is not a supplement for, nor does it meet, the EPA Section 609 regulations from the Clean Air Act Amendments of 1990. Please visit the EPA site (www.epa.gov) for more information on this certification program.

CVL02 BUSINESS CLASS M2 (4 DAYS)

This expert-level course will provide the technician with an in-depth understanding of the Business Class M2's multiplexed electrical system. Technicians will learn the functions, operation, and troubleshooting techniques for electronically controlled systems, including lighting, instrumentation, HVAC, body builder interface, air management system, and the multiplexed electrical system. Technicians will use all available resources, such as DiagnosticLink, Vehicle Info, Excelsior, and EZWiring, and CHEC, to isolate and repair problems in all vehicle systems. Technicians will use DiagnosticLink to monitor vehicle systems operation, change/add parameters, and flash vehicle ECUs.

CVL05 CASCADIA - ALL MODELS (4 DAYS)

This expert-level course builds upon skills learned in the CVE06 - Common Architecture course and applies them to Cascadia vehicles. Technicians will learn power distribution, ECU communication, and troubleshooting issues specific to Cascadia vehicles. Technicians will learn the functions, operation, and troubleshooting techniques for electronically controlled systems, including lighting, instrumentation, HVAC, and the multiplexed electrical system, including information about vehicle data links. Technicians will use all available resources, such as DiagnosticLink, Vehicle Info, Excelsior, and EZWiring to isolate and repair problems in all vehicle systems. They will use DiagnosticLink to monitor vehicle systems operation, change/add parameters, flash vehicle ECUs, and have hands-on troubleshooting opportunities after the classroom instruction portion of the class.

CVL06 WESTERN STAR (4 DAYS)

This expert-level course is designed to provide experienced technicians with an in-depth understanding of Western Star's electrical system. Technicians will learn the functions, operation, and troubleshooting techniques for all electronically controlled systems, including lighting, instrumentation, HVAC, and multiplexed electrical systems. Additional topics include the air system, suspension, and steering options to familiarize them with the brand. Various resources, including Vehicle Info, Excelsior, CHEC, and EZWiring will be utilized to help isolate and repair problems.

CEP42 DD HEAVY-DUTY - BASIC DIAGNOSTICS ILT (4 DAYS)

In this course, the technician is introduced to all the core competencies required for DETROIT engine diagnostics. Key sections include how to gather important service information stored on DTNA, such as technical literature, relating concepts of basic electricity to the DETROIT engine sensor system, detailed usage of the DiagnosticLink electronic service tool, how to program engine controller using DiagnosticLink professional and an overview of using DDEC Reports.

CEP43 DD HEAVY-DUTY - MAJOR REPAIR ILT (5 DAYS)

This course covers major repairs with emphasis on the systems of the engine (air, coolant, lube, fuel). As the students disassemble and reassemble the engine and how to properly use published literature for tasks including how to set the gear train and gear lash, set valve lash and engine brake lash. The course covers component differences between releases of DD engines and basic failure analysis of key components.

CEP70 DD MEDIUM-DUTY DIAGNOSTIC/MAJOR REPAIR (4 DAYS)

This course is split into two sections. One section is the Major Repair on the DD5 engine, and the other is the diagnostic on the DD8 engine. This class is 95% hands-on learning. Part one covers the major repair of the engine with emphasis on the systems of the engine (air, coolant, lube, and fuel). As the technicians disassemble and reassemble the engine, they will learn how to properly use Technical Literature for tasks, including how to set the gear train, gear lash, set the valve lash, and engine brake lash. The course will cover component differences the technician will see between the heavy-duty DD and the medium-duty engine. Part two covers the live troubleshooting of various possible engine failures and tooling to repair them, including the usage of the DiagnosticLink electronic service tool panels.

CEA01 DD HEAVY-DUTY - AIR & ATS DIAGNOSTICS ILT (3 DAYS)

This course focuses on the components, operation, and diagnostics of the DETROIT engine's air and aftertreatment system. Students learn the proper operation and diagnostics of air system components (both electronic faults and symptom-based issues). The ATS system includes a detailed study of the DOC and DPF filters, their related sensors, and all aspects of the regeneration process with a focus on GHG14/17 and Gen 5 GATS 2.0 systems. Students study ATS diagnostic procedures, both fault code and symptom-based issues, with a combination of log file analysis and hands-on exercises.

CEF02 DD HEAVY-DUTY - FUEL SYSTEM DIAGNOSTICS ILT (4 DAYS)

This course provides an in-depth look at how all the components of the fuel system, from the fuel tank to the injector, work together on a properly running engine. Based on that knowledge, technicians learn how to use the latest electronic service routines and troubleshooting material to diagnose fault codes or symptom-based issues with the fuel system.

CVG18 DT12 TRANSMISSION (3 DAYS)

The course focuses on the use of log file diagnostics and symptom-based troubleshooting to diagnose DT12 issues correctly the 1st time and eliminate the need to call the CSC for support. After properly diagnosing issues, technicians will complete repairs following service documentation using all DTNA special tools necessary for the repairs. Technicians will be guided through all DT12 learning and programming routines and get guidance on basic parameter management for the DT12.

CVD13 VIBRATION ANALYSIS (2 DAYS)

This two-day instructor-led course is intended to provide the technician with the knowledge and skills necessary to diagnose and troubleshoot vehicle vibration-related concerns. The course introduces the basics of vibration theory and the use of vibration software and other vibration-related tools to properly diagnose and correct the root cause.

CVX01 FCCC SERVICE AND MAINTENANCE (2 DAYS)

Freightliner Custom Chassis Corporation (FCCC) vehicles are covered in this class. Technicians will become familiar with FCCC Manuals and Maintenance procedures on Motor homes, School buses, Walk-in vans, and Shuttle Buses. Component location and access will be stressed, as well as Freightliner responsibilities. Students will also learn the differences in FCCC product drawings and schematics.

CVX02 FCCC ALL INSTRUMENT PANELS (1 DAY)

In this course, the technician will gain a working knowledge about electrical components, system problems and diagnostics of System III, MMDC, Ametek, Optiview, Drivetech dashes used in the MT chassis, shuttle bus, XC Motor Home. They will use schematics to trace circuits and diagnose problems. This class will also include the new Standard Wiring Harness and Schematic Locations on Excelsior and E-Z Wiring. (System III and MMDC is only used on older XC Motor Home, XB Shuttle Bus products and briefly covered.)

CVX03 FCCC 6.0L AND 6.6L GASOLINE TRAINING WALK IN VAN CHASSIS (1 DAY)

The Techs will be shown Diagnostics & Drivability and code retrieval. The Freightliner techs will be shown how to retrieve active and non-active codes. They will be given instructions on how to use a generic code reader for E78 controllers. They will also be taught the importance of the gateway module and how it interacts with the J1939 data line. Then will be shown how to use and retrieve codes with Detroit Diagnostic Link 8, on the new MT88 Controller. The techs will be given information on the NEW 6.6L ENGINE. THE OVERVIEW, FUEL SYSTEM, DIRECT INJECTION, OIL SYSTEM. Will be shown diagnostic manuals and procedures for all engines.

CEC03 EPA 2010-2023 Cummins ISB/ISC/ISL Engine Mechanical Qualification

This class is designed to provide the skills needed to overhaul, repair, or replace components on the EPA 2010-2023 ISB/ISC/ISL products under warranty. After completing this class, the technician will be qualified to perform repairs on the associated products under warranty after the product has been troubleshot by a Full-Service certified technician at the service location.

CEC07 EPA 2010-2023 Cummins Medium Range Diagnostics Qualification

This class is designed for technicians who have already completed the midrange Mechanical Qualification class for EPA 2010-2023 midrange products. This class will provide those technicians the additional training required to fulfill the Full-Service Qualification on the Midrange EPA 2010-2023 ISB/ISC/ISL products. In this class, technicians will be instructed in the theory of operation and troubleshooting of the Control system, the Aftertreatment system, and the High Pressure Common Rail fuel system. The technicians will be shown how to locate and use the Cummins Information systems on QSOL to properly troubleshoot, diagnose, and repair Cummins engines.