



CTI/WTI Heavy Duty Online Training Series

This series will cover everything heavy duty, from the ground up. You will dive deep into every system of the modern-day heavy duty/commercial vehicle and grasp a better understanding of what makes these so robust and how to prevent failures, service and maintain these workhorses.

| | Course Code | Training Type | Duration | Description |
|--------------------|-------------|---------------|----------|---|
| Air Brakes General | HDOLT-4401 | OLT | 2:00 | Covers basic movement, friction, torque and pressure systems and properly reading vernier caliper. |
| Alternator | HDOLT-4203 | OLT | 3:00 | Covers charging system introduction, induction, alternator components, voltage types and regulation. |
| CANbus | HDOLT-4602 | OLT | 1:20 | CANbus introduction, electrical operation, network configuration, error detection and rectification and network topology. |
| Chassis | HDOLT-4502 | OLT | 3:20 | Vehicle Identification Number (VIN), trailer coupling systems, vehicle combinations (EU and USA), truck cabs, vehicle dimensions, tow couplings, fifth wheel construction, forces and angles, central lubrication, oxidation and protection |
| Climate Control | HDOLT-4701 | OLT | 9:35 | Covers climate control operations, heating and cooling, components, auxiliary heating and components, metering and working principles, refrigerant types, property's environmental impacts, leak detection and tools. |
| Cold Start System | HDOLT-4204 | OLT | 0:45 | Cold start system overview and auxiliary heater operation |
| Electronics | HDOLT-4601 | OLT | 9:30 | DC and AC voltage, duty cycle, signals, resistance, amplitude modulation, commercial vehicle pulse width modulation, electrical components including capacitors, diodes, relays, coils, transistors, potentiometers light dependent resistors, magnetic dependent |



CTI/WTI Heavy Duty Online Training Series

| | | | | |
|-------------------|------------|-----|------|--|
| | | | | resistors, NTC and PTC thermistors, oscillographs and oscilloscopes. |
| Lead Acid Battery | HDOLT-4201 | OLT | 4:00 | Covers lead-acid battery introductions, using/reading a hydrometer, design differences, connection and charging of multiple battery systems. |
| Lighting Systems | HDOLT-4603 | OLT | 2:15 | Lighting system overview including headlights and tail light systems, light sources, types of light beams, types and operation of reflectors, lighting and signaling systems, cornering lights and headlight height adjustments. |
| Service Brake | HDOLT-4402 | OLT | 4:00 | Covers servicing of air brakes, disc brakes, brake chambers, air compressors, treadle valves, air storage systems, air dryers, expansion and cooling pipes, separate and four-circuit protection valves. |
| Shock Absorbers | HDOLT-4503 | OLT | 0:55 | Vibration dampening, shock absorber types including single cylinder and twin cylinder designs. |
| Springs | HDOLT-4505 | OLT | 2:20 | Wheel suspension introduction, component overview including springs, wheel suspension springs, air suspension system, air suspension with leaf springs, air system components and electronically controlled air suspension. |
| Starter Motor | HDOLT-4202 | OLT | 0:40 | Starter motor introduction, components such as electric motor, solenoid, shift lever, overrunning clutch, planetary gear set, electromagnetism and Lorentz force. |



CTI/WTI Heavy Duty Online Training Series

| | | | | |
|------------------------------|------------|-----|------|--|
| Steering | HDOLT-4504 | OLT | 2:20 | Steering system introduction, understeer and oversteer, steering system components including linkages, indirect steering, steering boxes, gear ratios, power steering, steering axles, Ackerman steering geometry and lane departure and lane keeping support systems. |
| Suspension | HDOLT-4506 | OLT | 3:15 | Wheel movements, wheel suspension overview, lift axles, axle load, and trailer axle load, wheel components including linkages, wheel bearings, suspension stabilizers. |
| Theft Protection | HDOLT-4205 | OLT | 0:25 | Covers theft protection overview and principles of operation. |
| Wheel Settings and Alignment | HDOLT-4507 | OLT | 2:10 | Preparation for alignments, setting up an alignment machine, alignment sequence, alignment procedure, camber, caster, toe angle, steering axis inclination (SAI), Thrust angle and alignment report and adjustment. |
| Wheels and Tires | HDOLT-4501 | OLT | 4:45 | Covers, wheels, tires, dimensions and marking on tires, valve stems, wheel designs, wheel mounting, tread depths, tread wear, retreading and repair, torque wrenches longitudinal forces on a vehicle, wheel imbalance and balancing, TPMS and ATIS introductions. |