



COURSE CATALOG



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OPERATOR
TRAINING

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PM110 – PREVENTIVE MAINTENANCE



Course Name	Preventive Maintenance – PM110
Course Type	Instructor-Led
Instructor Name	Multiple
Course Length	2 Days
Participants (min. / max.)	4 / 8
Location	Salem, Richmond
Course Overview	80% Theory, 20% Practical Labs
Tooling Required	None
Description	Intended for service technicians that perform preventive maintenance on Cat® equipment, this course will familiarize the participant with information on performing specific maintenance tasks, inspection procedures, and related safety requirements for Cat construction equipment.
E-Learning Courses	Caterpillar University (DPC) – Web Based Training 30280 Basic Preventive Maintenance
Course Outline	<ul style="list-style-type: none">• Safety/PPE• ISO Symbols• Contamination Control• PM Tasks• PM Walk-Around Inspections• Schedules• Components/Parts

PRICING: Subscription to CarterU online curriculum (optional): \$325 per user/per year
Class: \$575 per technician



HAC110 – HVAC FUNDAMENTALS/EPA609



Course Name	HAC110CUST – Mobile HVAC Systems
Course Type	Instructor-Led
Course Length	3 Days
Participants (min. / max.)	4 / 8
Course Overview	60% Theory, 40% Practical Labs
Intended Audience	Service Training Instructors, Technical Communicators, Service Technicians
Suggested Pre-requisites	Caterpillar University (DPC) – Web Based Training <ul style="list-style-type: none">The Caterpillar 7-Step Diagnostic Process (26917)AC C01 – Basic Air Conditioning Theory and Service (21471)AC C02 – HVAC System Electronics (21472)AC Diagnostic Exercise (26849)
Description	This instructor-led course is designed to give technicians an understanding of the system operation, diagnostics and service procedures for 3 types of air condition systems used in Caterpillar machines and on-highway trucks.
Course Outline	A. Principles of air conditioning B. System Components C. HVAC Tooling D. Service Procedures E. Troubleshooting mobile HVAC systems
Objectives	Upon completion of this training, the learner will be able to: <ul style="list-style-type: none">Describe the principles of operations of air conditioning systemsUnderstand all applicable safety precautionsKnowledgeable in the laws and regulations regarding service of mobile HVAC systemsBe capable of safely recovering refrigerant using the required tooling and proceduresRecharge an HVAC system on Caterpillar machines using the required method and tooling to meet the Caterpillar specificationsUnderstand how to troubleshoot and repair HVAC systems on Caterpillar machines
Tooling Required	Usual pressure gauges, tool box and ET-software + comm adapter.
Additional Information	This class also includes the test for EPA609 Certification required for mobile equipment.
PRICING: Subscription to CarterU online curriculum (optional): \$325 per user/per year Class: \$1,275 per technician	





Course Name	SIS/ET Diagnostics (CAT Service Information System and Electronic Technician)
Course Type	Instructor Lead Training
Course Length	2 Days
Participants (min. / max.)	4 / 8
Course Overview	80% Theory, 20% Practical Labs
Pre-course work	None required
Suggested Pre-requisite	DPC – Web Based Training <ul style="list-style-type: none">Caterpillar Electronic Technician Overview 40258 Cat Electronic Technician
Tooling Required	<ul style="list-style-type: none">Computer with ET, SIS Web,An Internet connectionAll students need Caterpillar Corporate Web Security (CWS) login
Description	This instructor-led class is intended for Service Technicians who have a current subscription to Caterpillar Electronic Technician (ET) and Service Information System (SIS). The course will provide the necessary knowledge to be able to use the Caterpillar web information services and software tools (ET). The student will learn how to use each of these tools to find performance specifications, troubleshooting and repair procedures, and parts related information. They will also learn how to use ET to perform diagnostics and troubleshooting for Caterpillar engines/machines.
Course Outline	<ul style="list-style-type: none">Introduction to SIS WebLesson 1 - Main MenuLesson 2 - Parts SearchLesson 3 (Access Methods – Product ID Required)Lesson 4 (Access Methods – Product ID Not Required)Introduction to Cat Electronic Technician (ET)Component based troubleshooting
Objectives	Upon successful completion of this course, , the technician will be able to demonstrate their ability to: <ul style="list-style-type: none">Use SIS Web to find parts, performance specs, and diagnostic/repair procedures.Use Component Based Troubleshooting to find testing and troubleshooting procedures based on diagnostic codes or symptoms.Use ET to diagnose/troubleshoot engine/machine problems and create datalogs.Identify which Caterpillar web based tool to use to find requested information.

PRICING: Subscription to CarterU online curriculum (optional): \$325 per user/per year
Class: \$575 per technician



TIER 4 FINAL PASSIVE SYSTEMS

Course Name	ESD310 - Tier 4 Final Passive Systems
Course Type	Instructor-Led
Course Length	2 Days
Participants (min. / max.)	4 / 8
Course Overview	60% Theory, 40% Practical Labs
Suggested Pre-requisites:	Caterpillar University (DPC) – Web Based Training <ul style="list-style-type: none">• Tier 4 Final C1.5 and C2.2 Systems overview 40805• Tier 4 Final C4.4 and C7.1 Engine overview 42255• Tier 4 Final C7.1 to C18 Engine Systems Overview 40223• Tier 4 Final Operator Interface Warnings and Inducements 40917• Tier 4 Final Overview – Communications and Resources 53786• Tier 4 Final Overview – General Overview 41493• Tier 4 Final Overview – Operator Interface 41495• Tier 4 Final Technology Overview 41494
Description	This training provides a customer-focused overview of Tier 4 emissions Caterpillar engine products and the basic technical learning requisite to properly operate, maintain and service Tier 4 emissions-related systems. A fundamental technical overview of each emissions reduction/control system is provided. Ample opportunity for questions and discussion is provided and encouraged.
Course Outline	A. Tier 4 Interim Machine Engines B. Interim Emissions Maintenance C. LAB - Component ID & Systems Walkthrough <ol style="list-style-type: none">1. Emissions Component ID Exercise2. EGR, Aftertreatment and Fuel System Flow Paths3. ET Service Software Walkthrough D. Tier 4 Final Machine Engines with SCR E. LAB - DEF Quality, Delayed Engine Shutdown & Wait-to-Disconnect <ol style="list-style-type: none">1. DEF Quality Exercise, Tools & Safe Handling2. Avoiding Damage from Hot Aftertreatment Shutdown3. Avoiding Problems from Interrupted DEF Purge Sequence
Objectives	Upon completion of this training, the Learner will be able to: <ul style="list-style-type: none">• Describe Tier 4 diesel engine emission regulations, emission limits and treatment technologies• Identify emission related acronyms and generally define these terms• Identify emission and aftertreatment components on-engine during lab activities• Explain basic emission systems operation for each technology• Follow and understand programmed maintenance intervals and tasks found in the Operation & Maintenance Manuals (OMM) for Tier 4 engines• Describe the operation of Tier 4 Final Selective Catalytic Reduction (SCR) systems and identify the components in the system• Recognize SCR “Operator Inducement” warnings and take the appropriate response to this set of operating conditions when they occur• Explain Diesel Exhaust Fluid (DEF) safety, storage and handling requirements and perform the Caterpillar DEF Quality Test when needed• Explain the requirements for proper Hot Aftertreatment Safe Shutdown and DEF Purge Sequence to avoid potential engine or aftertreatment damage or reduced life
Tooling Recommended (Not Required)	<ul style="list-style-type: none">• PC with Caterpillar Customer Electronic Technician (ET) installed and licensed• Ability to connect PC to the Internet and SISWeb (CMCo Guest Connection)• Students will benefit from having a Caterpillar Corporate Web Security (CWS) login with which to connect and practice utilizing these tools.

PRICING: Subscription to CarterU online curriculum (optional): \$325 per user/per year
Class: \$575 per technician





PARTICIPATION

- Steel toe shoes, safety glasses, and mechanic gloves are required to attend all classes.
- Attendees must comply with all Carter safety policies while on site.
- Tests and exams are incorporated into some classes. In order to receive a certificate of completion, participants must receive a minimum average score of 80% on assessments - NO EXCEPTIONS.
- Snacks, drinks, and lunches are provided for registered course participants.

PAYMENT

- A purchase order or credit card is required at the time of enrollment. The cost will be invoiced at the end of the class.
- Cancellations within 30 days of the class will be invoiced at full price. Substitutions are allowed up to 24-hours before the start of class.
- Travel arrangements are the responsibility of the attendee. The cost per class DOES NOT include any travel or hotel expenses. *See a list of suggested hotel locations on page 14.*

PRICING

- Annual Subscription to Carter University Online (per user/per year) – \$325
- Cost for 2-day class – \$ 575
- Cost for 4-day class – \$1,275

CONTACT INFORMATION

DPC Subscription and Class Enrollment

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Debbie_squires@cartermachinery.com

SIS/ET Subscriptions

technology@cartermachinery.com



SUGGESTED HOTEL LOCATIONS



PRINCETON, WV

Country Inn and Suites, Princeton
111 Halls Ridge Rd.
Princeton, WV 24740
304.425.2200

Approx. 8 miles to Princeton Carter

BLUEFIELD, VA

Comfort Inn
38769 Governor G C Peery Hwy
Bluefield, VA 24605
480.719.7982

Approx. 15 miles to Princeton Carter

CHESAPEAKE, VA

Courtyard by Marriott Chesapeake
1562 Crossways Blvd.
Chesapeake, VA 23320
757.420.1700

Approx. 2 miles to Chesapeake Power

**SpringHill Suites by Marriott
Chesapeake Greenbrier**
1446 Crossways Blvd.
Chesapeake, VA 23320
757.410-9406

Approx. 2 miles to Chesapeake Power

RICHMOND, VA

**Hampton Inn and Suites
Virginia Center Commons**
1101 Technology Park Dr
Glen Allen, VA 23059
804.261.2266

*Approx. 4 miles to Richmond Power
Approx. 6 miles to Richmond Construction*

**Courtyard by Marriott
Virginia Center Commons**
10077 Brook Rd
Glen Allen, VA 23059
804.266.6900

*Approx. 4 miles to Richmond Power
Approx. 6 miles to Richmond Construction*

SALEM, VA

**Fairfield Inn & Suites by
Marriott- Roanoke/Salem**
121 Sheraton Drive
Salem, VA 24153
540.302.4005

Approx. 3 miles to Carter Corporate in Salem

Hampton Inn Roanoke/Salem
1886 Electric Road
Salem, VA 24153
540.776.6500

Approx. 4 miles to Carter Corporate in Salem





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