

# 2022

## EXPANDING KNOWLEDGE TO EXCEL BETTER

### Customer Training Schedule

Training Center PT Trakindo Utama



**ADVANCING YOU FORWARD** >>>®

Call Center 1500 228 Whatsapp Trakindo 0811 5500 228

info@trakindo.co.id    

**Trakindo** 

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Pelanggan setia Trakindo,

Semoga kita semua tetap dalam keadaan sehat.

Brosur Customer Training Schedule 2022 ini kami persiapkan untuk memudahkan Anda dalam menyusun pelatihan yang dapat disesuaikan dengan kebutuhan Anda dan tim. Pelaksanaan pelatihan ini dapat dilakukan secara regular (in-class training), dan ada beberapa materi yang dapat dipelajari secara self study (e-learning) dari modul yang langsung disiapkan oleh Caterpillar.

Anda dapat menentukan pelatihan yang akan diikuti dari daftar modul yang sudah kami persiapkan, dengan pilihan beberapa metode pembelajaran yang mudah. Selain itu materi pelatihan tentunya juga dapat menyesuaikan dengan permintaan khusus (customized). Learning Consultant kami dengan senang hati akan berdiskusi dengan Anda untuk pelatihan yang dibutuhkan. Brosur ini juga dilengkapi dengan informasi mengenai harga pelatihan sehingga memudahkan dalam penentuan rencana dan biaya pelatihan yang akan diikuti.

Brosur Customer Training Schedule ini bersifat dinamis, sehingga akan diperbarui secara berkala. Untuk mengetahui info terkini, brosur ini juga dimuat dalam bentuk soft file yang dapat diakses melalui link berikut:

<https://www.trakindo.co.id/en/training/customer-training>.

Semoga brosur Customer Training Schedule 2022 dapat menjadi bagian yang penting dalam upaya mewujudkan keberhasilan dalam hal pengembangan karyawan serta ikut membantu kemajuan bangsa Indonesia.

Salam hangat,  
PT Trakindo Utama

Sheila H. Kansil  
Learning & Development Manager

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► SUBJECT:

## APPLIED FAILURE ANALYSIS I (ENGINE COMPONENTS)

### Objective:

This course provides an in-depth study and hands-on activity to have underpinning knowledge to perform failure analysis procedure to engine component.

### Target Audience:

Person who has responsibility to analyze engine Components Failure, such as: Technical (Machine, Engine), electrician (Machine Electrical, Generator Set), Service Analyst, Service Foreman, Customer Service Analyst.

### Topic:

1. Introduction to Failure Analysis.
2. Failure Analyst Management.
3. Metallurgy.
4. Principle of Fractures.
5. Principle of Wear.
6. Visual Examination.
7. Application of Basic Principle to Engine Components (Engine Bearing, Crankshaft, Connecting Rod, Piston, Ring and Liner, Valves, Turbocharger, Threaded Fastener).

► SUBJECT:

## APPLIED FAILURE ANALYSIS II (POWER TRAIN & HYDRAULIC COMPONENTS)

### Objective:

This course provides an in-depth study and hands-on activity to have underpinning knowledge to perform failure analysis procedure to powertrain and hydraulic component.

### Target Audience:

Person who has responsibility to analyze Power Train & Hydraulic Components Failure such as: Technical (Machine), Service Analyst, Service Foreman, Customer Service Analyst.

### Topic:

1. Introduction to Failure Analysis
2. Failure Analysis Management
3. Metallurgy
4. Principle of Fractures
5. Principle of Wear
6. Visual Examination
7. Application of Basic Principle to Power Train & Hydarulic Component (Gear Failure Analysis, Anti Friction Bearing, Hydraulic Pump and Motor, Shaft Failure Analysis)



► SUBJECT:

# CAT PRODUCTS, TECHNOLOGY & VALUE

## Objective:

This course provides CAT Product knowledge and Technology, Trakindo Support in order to maintain understanding Customer product and service of Trakindo

## Target Audience:

Person who has authority as Procurement, Operation and Maintenance Engineer, Plant.

## TOPIC:

1. Cat Product features & benefit.
2. Maintenance Management.
3. Caterpillar commodity Product line.
4. Repair Option.
5. Product Link.





► SUBJECT:

## DIESEL ENGINE ELECTRIC SET OPERATION & MAINTENANCE

### Objective:

This course provides an in-depth study and hands-on activity in operating, maintaining and simply troubleshooting Caterpillar Diesel Generator Set.

### Target Audience:

Person who maintain Caterpillar Diesel Generator Set, such as: maintenance mechanic, generator set operator, foreman and supervisor.

### Topic:

1. Basic Diesel Engine.
  - a. Principle of 4 - Stroke Diesel Engine
  - b. Diesel Engine Classification
  - c. Caterpillar Engine Product Line
  - d. Diesel Engine Component
2. Diesel Engine System.
  - a. Fuel System & Governor
  - b. Air Induction & Exhaust System
  - c. Lubrication System
  - d. Cooling System
3. Basic Power Generation.
  - a. CAT® Generator Principle
  - b. Main components of Generator
  - c. Excitation Concept
  - d. Automatic Voltage Regulator
  - e. Electronic Modular Control Panel
4. Safety Procedure.
5. Single and Parallel Operating Procedure
6. Maintenance and Operating Practices
7. Caterpillar Literature:
  - a. Using Operation & Maintenance Manual
  - b. Using Parts book
8. Basic Diesel Genset Troubleshooting.

► SUBJECT:

## DIESEL ENGINE MAINTENANCE

### Objective:

This course provides an in-depth study and in operating, maintaining and simply troubleshooting Caterpillar Diesel Engine.

### Target Audience:

Person who maintain Caterpillar Diesel Engine, such as: maintenance mechanic, generator set operator, foreman and supervisor.

### Topic:

1. Basic Diesel Engine.
  - a. Principle of 4 - Stroke Diesel Engine
  - b. Diesel Engine Classification
  - c. Caterpillar Engine Product Line
  - d. Diesel Engine Component.
2. Diesel Engine System.
  - a. Fuel System & Governor
  - b. Air Induction & Exhaust System
  - c. Lubrication System
  - d. Cooling System
  - e. Starting System
  - f. Charging system
3. Safety Procedure.
4. Maintenance Practices.
5. Caterpillar Literature:
  - a. Using Operation & Maintenance Manual
  - b. Using Partsbook
6. Basic Engine Troubleshooting.



# GAS ENGINE ELECTRIC SET OPERATION & MAINTENANCE

## Objective:

This course provides an in-depth study and hands-on activity in operating, maintaining and simply troubleshooting Caterpillar Gas Generator Set.

## Target Audience:

Person who maintain Caterpillar Gas Generator Set, such as: maintenance mechanic, generator set operator, foreman and supervisor.

## Topic:

1. CAT Gas Engine Classification.
2. Operating Principles & Terminology of CAT gas engine.
3. Fuel Gas Properties Consideration Related with Application in The Gas Engine.
  - a. Calculating LHV
  - b. Calculating HHV
  - c. Using Methane Number Software
4. Major Components & Operation Air Intake & Exhaust System.
  - a. Regulator Adjustment
  - b. Wastegate Adjustment
5. Major Components & Operation Fuel System.
  - a. Using Fuel Usage Guide
  - b. Carburetor Adjustment
  - c. Using Emission Tester
6. Major Components & Operation Ignition System.
  - a. Ignition Timing Adjustment
  - b. Magnet test
7. Basic Operation of Safety Device.
8. CAT Generator Introduction.
  - a. Generator Concept
  - b. Generator Main Components
  - c. Excitation Concept
  - d. Automatic Voltage Regulator
  - e. Electronic Modular Control Panel
9. Operation & Maintenance
  - a. Start-up Gas Engine G333
  - b. Genset Single Operation
  - c. Using Related CAT Service Literature
10. Basic Gas Genset Troubleshooting.



# HEAVY EQUIPMENT MAINTENANCE

## Objective:

This course provides an in-depth study and hands-on activity in maintaining and repairing (basic) Caterpillar Heavy Equipment, including how to use Operation & Maintenance Manual and Parts Book and introducing basic troubleshooting procedure

## Target Audience:

People who has direct access to daily heavy equipment maintenance activity

## TOPIC:

1. Literature and resource identification.
2. Caterpillar Product Line.
3. Basic Engine Component.
4. Engine System.
5. Basic Hydraulic System.
6. Hydraulic System Operation.
7. Power Train Hydraulic System.
8. Power Train Electronic System.
9. Monitoring System.
10. Using Operation & Maintenance Manual and Parts Book.
11. Basic Troubleshooting.





# HEAVY EQUIPMENT MAINTENANCE MANAGEMENT

## Objective:

This course provides an identifies the competency required to understand maintenance management concept & able to perform maintenance planning & scheduling on Caterpillar Heavy Equipment.

## Target Audience:

Person who has authority to design, manage, supervise or evaluate maintenance aspect of heavy equipment, such as: maintenance planner, maintenance supervisor and maintenance manager.

## Topic:

1. Heavy Equipment Management.
  - a. Basic Concept & Implementation
  - b. The 5 Stages of Equipment Management
  - c. 8 Element of Equipment Management
2. Heavy Equipment Maintenance Management.
  - a. Preventive Maintenance
  - b. Contamination Control
  - c. SOS Service
  - d. Condition Monitoring
  - e. Training
  - f. Scheduling
  - g. Repair Management
  - h. Recording
3. Evaluating Maintenance Effectiveness.
  - a. Mechanical Availability (MA)
  - b. Mean Time Between Shutdown (MTBS)
  - c. Mean Time To Repair (MTTR)
4. Case Study:  
Maintenance Planning & Scheduling.



► SUBJECT:

## S•O•S INTERPRETATION FOR CUSTOMER

### Objective:

This course identify the competence required for understanding S•O•S Services, taking sample, S•O•S reports, follow up abnormal reports, and Oil Commander System.

### Target Audience:

Persons who has access to maintain, service and perform condition monitoring on Caterpillar/ Non-Caterpillar equipment, such as Mechanic, Technician, Planner, Analyst, Service Supervisor.

### Topic:

1. S•O•S Products and Services
2. Taking Sample
3. How to Read S•O•S Report
4. Follow-up Abnormal Reports
5. Case Study
6. CAT S•O•S Service Manager System

► SUBJECT:

## TRAKINDO CONDITION MONITORING BOOTCAMP

### Objective:

This course to give a student a head-start on being a CMA and understanding what is involved in the process and the ability to write a recommendation using a combination of the five elements of condition monitoring.

### Target Audience:

Persons who has to maintain, machine health and perform condition monitoring on Caterpillar/ Non-Caterpillar equipment and five elements of CM and how they interrelate in identifying proactive product support recommendations and solutions.

### Topic:

1. The TU CMAs
2. Five Elements of Condition Monitoring
3. Implementation of CM Data into Day to Day Activities



# CUSTOMIZED TRAINING - SAMPLE 1

## 16 M MOTOR GRADER PRODUCT TRAINING

### Objective:

This course provides an in-depth study and hands-on activity to identify component, explain system operation and able to perform testing & adjusting on engine, hydraulic, electronic control & monitoring system at Caterpillar 16M Motor Grader.

### Target Audience:

Person who has an access for maintaining, operating and servicing of Caterpillar 16M Motor Grader, such as: mechanic and technician.

### Topic:

1. Operator's Station.
2. Messenger.
3. C13 ACERT™ Engine.
  - a. Air intake & Exhaust System
  - b. Fuel System
  - c. Cooling System
  - d. Lubrication System
4. Power Train.
  - a. Transmission/Chassis Electrical System
  - b. Power Train Hydraulic System
5. Implement And Steering System.
  - a. Implement Electrical System
  - b. Implement Hydraulic System
6. Brake And Fan System.
  - a. Service Brake System
  - b. Parking Brake System
  - c. Fan System
7. Practical on Machine.



► SUBJECT:

## **CUSTOMIZED TRAINING - SAMPLE 2**

### **C32 ACERT MARINE ELECTRONIC ENGINE**

#### **Objective:**

This course provides an in-depth study and hands-on activity to have underpinning knowledge system operation, service task and diagnostic procedures on C32 Caterpillar Marine Diesel Engine.

#### **Target Audience:**

Person who has an access for maintaining, operating and servicing of Caterpillar C32 ACERT Marine Engine, such as: mechanic, chief engineer, port engineer and technical advisor.

#### **Topic:**

1. Identify major engine components.
2. Explain diesel engine four stroke concept.
3. Explain fuel system, air intake & exhaust system, lubrication system and cooling system.
4. Explain basic concept of electronic engine.
5. Explain Electronic Unit Injector (EUI) Fuel System.
6. Explain diagnostic tools needed and diagnostic procedure on Caterpillar electronic engine.
7. Perform diagnostic and calibration test on Caterpillar electronic engine



# CUSTOMIZED TRAINING - SAMPLE 3

## GAS ENGINE ADVANCE

### Objective:

This course provides an in-depth study and hands-on activity to have the underpinning knowledge required to perform service and repair on electronic gas engine in term of doing service and perform testing and adjusting

### Target Audience:

Person who has an access for maintaining, operating and servicing of Caterpillar Gas Engine, such as: mechanic and technician.

### Topic:

1. Explain system operation & technical consideration of electronic gas engines
2. Explain factors affect to HP in the gas engine.
3. Explain E.I.S system operation, diagnostic, harness wire identification, electrical connection description identification, electronic system logic diagram, and E.I.S component identification and location.
4. Explain ADEM 3 system operation, diagnostic, electronic system troubleshooting, and component identification and location.
5. Explain procedure using DDT or ET for accessing E.I.S and ADEM 3 module due to access and parameters programming.
6. Identify Caterpillar literature required to find performance data
7. Perform using DDT or ET for accessing E.I.S and ADEM 3 module due to access and parameters programming.
8. Perform programming E.I.S and ADEM 3 parameters.
9. Perform Interpreting electronic code due to solve the problem.
10. Perform electronic system functional test.
11. Perform accessing Caterpillar literatures to find performance data.
12. Perform witness test and performance analyzing data





▶ SUBJECT:

## DEALER CUSTOMER CAMPUS

### **Description:**

Caterpillar customer campus is an online learning platform with hundreds of Web Based Training for all machine, marine, oil & gas and electric power technicians and equipment management

Dealer Customer Campus includes:

- Service package
- Safety package
- Fundamentals of Equipment Economics

Target Audience:

Person who has an access for maintaining Caterpillar equipment.



# 2022 CUSTOMER TRAINING SCHEDULE

NO.	TRAINING TITTLE	MONTH	DATE	REMARKS	LOCATION	METHOD
1	Heavy Equipment Maintenance Management	March	7-11 March 2022	Regular (Batch 1)	TC Cileungsi	Inclass
2	Heavy Equipment Maintenance Management	March	20 -24 March 2022	Regular (Batch 2)	Virtual TC Cileungsi	Virtual
3	Heavy Equipment Maintenance Management	July	25-29 July 2022	Regular (Batch 3)	Virtual STC Banjarmasin	Virtual
4	Heavy Equipment Maintenance Management	August	1-5 August 2022	Regular (Batch 4)	TC Cileungsi	Inclass
5	Applied Failure Analysis 1	March	21-25 March 2022	Regular (Batch 1)	STC Balikpapan	Inclass
6	Applied Failure Analysis 1	June	06-10 June 2022	Regular (Batch 2)	STC Balikpapan	Inclass
7	Applied Failure Analysis 1	September	6-10 September 2022	Regular (Batch 3)	TC Cileungsi	Inclass
8	Applied Failure Analysis 1	November	7-11 November 2022	Regular (Batch 4)	TC Cileungsi	Inclass
9	Heavy Equipment Maintenance	April	11-13 April 2022	Regular (Batch 1)	Virtual TC Cileungsi	Virtual
10	Heavy Equipment Maintenance	June	6-8 June 2022	Regular (Batch 2)	Virtual TC Cileungsi	Virtual
11	Diesel Engine Maintenance	April	12-14 April 2022	Regular (Batch 3)	Virtual TC Cileungsi	Virtual
12	Diesel Engine Maintenance	May	17-19 May 2022	Regular (Batch 4)	Virtual TC Cileungsi	Virtual
13	Condition Monitoring and Bootcamp	April	25-29 April 2022	Regular (Batch 1)	TC Cileungsi	Inclass
14	Condition Monitoring and Bootcamp	October	17-21 October 2022	Regular (Batch 2)	TC Cileungsi	Inclass
15	Applied Failure Analysis 2	May	23-27 May 2022	Regular (Batch 1)	TC Cileungsi	Inclass
16	Applied Failure Analysis 2	August	8-12 August 2022	Regular (Batch 2)	TC Cileungsi	Inclass
17	Applied Failure Analysis 2	August	22-26 August 2022	Regular (Batch 3)	STC Balikpapan	Inclass
18	Applied Failure Analysis 2	October	17-21 October 2022	Regular (Batch4)	STC Balikpapan	Inclass
19	S.O.S Interpretation For Customer	June	14-17 June 2022	Regular	STC Balikpapan	Inclass
20	Gas Engine Electric Set Operation & Maintenance	July	11-15 July 2022	Regular (Batch 1)	TC Cileungsi	Inclass
21	Gas Engine Electric Set Operation & Maintenance	October	24-28 October 2022	Regular (Batch 2)	TC Cileungsi	Inclass
22	CAT Product, Technology & Value	July	18-22 July 2022	Regular	TC Cileungsi	Inclass
23	Diesel Engine Electric Set Operation & Maintenance	September	13-17 September 2022	Regular (Batch 1)	TC Cileungsi	Inclass
24	Diesel Engine Electric Set Operation & Maintenance	October	31 October -4 November 2022	Regular (Batch 2)	TC Cileungsi	Inclass
25	Dealer Customer Campus	-	January – December 2022	Regular	Web Based	Online

## NOTE

- In-class training method is the implementation of face-to-face training at PT Trakindo Utama Training Centre and will be applied if possible.
- Virtual training method conducted using internet connection. Each training participant should provide desktop/laptop equipped with Microsoft Teams program.
- Customized Training. Customer request training that is not mentioned on this brochure can be customized as required, where subject, schedule, pre-requisite and location are subject to prior discussion.
- Minimum participants applied.



TRAINING  
**REGISTRATION FORM**

To:  
PT Trakindo Utama - Cileungsi Training Center  
Jl. Narogong Raya Km.19 Cileungsi  
Bogor 16820  
Fax: 021 823 3380  
Phone: 021 823 3361  
Email: nanang.kurniawan@trakindo.co.id

Here with I would like to register:	Use Accommodation*
Name (s) 1. ....	Yes / No (circle one)
2. ....	Yes / No (circle one)
3. ....	Yes / No (circle one)
4. ....	Yes / No (circle one)
5. ....	Yes / No (circle one)
6. ....	Yes / No (circle one)
7. ....	Yes / No (circle one)
8. ....	Yes / No (circle one)
9. ....	Yes / No (circle one)
10. ....	Yes / No (circle one)

To attend the training  
Training Title : .....  
Date : .....  
Venue : Cileungsi / Balikpapan (circle one)

### Customer Information (Important)

Please send the invoice to (must be with accurate data)

Company	: .....
Name	: .....
Address	: .....
Accounting Contact	: .....
Phone	: .....
Email	: .....

\*) Accommodation will be provided (if available) when training conducted at Cileungsi Training Center

\_\_\_\_\_  
Name & Company Stamp

# TERMS & CONDITION

1. The participants for each class session are 4 (minimum) and 10 (maximum).
2. Course Fees:
  - a. Conducted at PT. Trakindo Utama:
    - 1 Days Training Duration: IDR 3.400.000,- per participant per session
    - 2 Days Training Duration: IDR 4.300.000,- per participant per session
    - 3 Days Training Duration: IDR 5.200.000,- per participant per session
    - 5 Days Training Duration: IDR 7.000.000,- per participant per session
    - 20 Days Training Duration: IDR 28.000.000,- per participant per sessionThe prices above are including full color handout, stationary, 2x coffee breaks, lunch and certificate of attendance. The prices above are excluding transportation & accommodation of participant.
  - b. Conducted at Customer's Site (In House):
    - 1 Days Training Duration: IDR 2.400.000,- per participant per session
    - 2 Days Training Duration: IDR 3.300.000,- per participant per session
    - 3 Days Training Duration: IDR 4.200.000,- per participant per session
    - 5 Days Training Duration: IDR 6.000.000,- per participant per session
    - 20 Days Training Duration: IDR 24.000.000,- per participant per sessionThe prices above are including full color handout, stationary and certificate of attendance. The prices above are excluding transportation, accommodation and meal of Instructors during training.
  - c. Conducted with virtual training method (online)
    - 1 Days Training Duration: IDR 1.700.000,- per participant per session
    - 2 Days Training Duration: IDR 2.150.000,- per participant per session
    - 3 Days Training Duration: IDR 2.600.000,- per participant per session
    - 4 Days Training Duration: IDR 3.050.000,- per participant per session
    - 5 Days Training Duration: IDR 3.500.000,- per participant per sessionThe prices above are including full color handout, stationary and certificate of attendance.
3. Dormitory Cileungsi Training Center IDR 430.000,- per day per participant (shared room, meals, laundry, cleaning service).
5. Training Registration should be submitted atleast 1 month before training commencement
6. Payment term 14 days after invoice is received
7. Payment should be made to :

PT TRAKINDO UTAMA BANK MANDIRI  
Jl. Cilandak KKO, Jakarta Selatan - INDONESIA  
Bank Account (IDR) No.: 127-00010216-31

Contact Person:  
Nanang Kurniawan  
Email : nanang.kurniawan@trakindo.co.id  
Phone : +62 21 8233361 Ext: 3675  
Fax : +62 21 8233360



## **SATELLITE TRAINING CENTER (BANJARMASIN)**

Jln. A Yani KM 16.4

Kec. Gambut, Kab. Banjar Kalimantan Selatan 70235

Phone: (62 - 511) 674 7991 Fax: (62 - 511) 674 7990

Contact Person: Fuad Rahman

Email: fuad.rahman@trakindo.co.id

Phone : (62 - 511) 674 7991

Fax: (62 - 511) 674 7990

Cell phone: +62 811 5110 436

## **SATELLITE TRAINING CENTER (BALIKPAPAN)**

Jl. Jend. Sudirman No. 848

14 Balikpapan 76114 - Kalimantan Timur

Phone: (62 - 542) 762 810 Fax: (62 - 542) 762 806

Contact Person: Agus Hermanto

Email: agus.hermanto@trakindo.co.id

Phone : (62 - 542) 762 810

Fax: (62 - 542) 762 806

Cell phone: +62 811 5933 256

## **CILEUNGI TRAINING CENTER**

Jl. Raya Narogong Km 19 Cileungsi, Bogor 16820

Phone: (62 - 21) 823 3361 (Hunting)

Fax: (62 - 21) 823 3360

Contact Person: Nanang Kurniawan

Email: nanang.kurniawan@trakindo.co.id

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