Diesel Engine Maintenance & Repair Training

Course Overview

This training program is designed to equip commercial truck technicians and diesel mechanics with advanced knowledge and practical skills in diesel engine maintenance, diagnostics, and repair.

Participants will learn how to use electronic diagnostic tools to identify real-time and stored faults, improve troubleshooting accuracy, reduce downtime, and enhance overall repair efficiency.

The course combines theoretical understanding with hands-on practical sessions to ensure participants can confidently apply diagnostic and maintenance techniques in real working environments.

Course Objectives

Upon completion of this training, participants will be able to:

- Understand diesel engine systems and operating principles
- Identify key engine components and their functions
- Use electronic diagnostic tools effectively
- Interpret fault codes and real-time data
- Troubleshoot common diesel engine malfunctions
- Apply preventive maintenance practices
- Reduce guesswork and repair time
- Improve workshop productivity and service quality

Training Benefits

Participants and organizations will benefit from:

- Improved diagnostic accuracy
- Reduced vehicle downtime
- Faster fault identification and repair
- Enhanced preventive maintenance practices

- Better utilization of electronic diagnostic tools
- Increased technician confidence and competency
- Improved operational efficiency and cost savings

Target Audience

- Diesel Mechanics
- Commercial Truck Technicians
- Workshop Supervisors
- Fleet Maintenance Personnel
- Automotive Technicians
- Service Advisors involved in technical troubleshooting

Training Methods

- Interactive lectures
- Technical demonstrations
- Hands-on practical sessions
- Diagnostic tool application
- Case studies and troubleshooting exercises
- Group discussions
- Knowledge assessment

Course Modules

Module 1: Diesel Engine Fundamentals

- Diesel engine operating principles
- Combustion process
- Engine components and functions

Module 2: Fuel & Injection Systems

- Common rail system

- Fuel pump and injector operation
- Electronic fuel management
- Fuel-related troubleshooting

Module 3: Electronic Diagnostics

- Diagnostic scanner operation
- Reading fault codes
- Real-time data interpretation
- Sensor and ECU analysis

Module 4: Preventive Maintenance

- Lubrication system
- Cooling system
- Air intake and turbocharger system
- Maintenance scheduling

Module 5: Advanced Troubleshooting

- Electrical faults
- Sensor failures
- Emission system issues
- Performance diagnostics

Module 6: Practical Workshop

- Live fault detection
- Diagnostic workflow practice
- Repair strategy application
- Root cause analysis

Training Timeline (2 Days | 9:00 AM – 5:00 PM)

Day 1 – Fundamentals & Diagnostics

9:00 – 9:15 Registration & Introduction

9:15 – 10:30 Diesel Engine Fundamentals

10:30 – 10:45 Break

10:45 – 12:00 Fuel & Injection Systems

12:00 – 1:00 Lunch

1:00 – 2:15 Electronic Diagnostics

2:15 – 2:30 Break

2:30 – 3:45 Practical Diagnostic Session

3:45 – 5:00 Workshop & Discussion

Day 2 – Troubleshooting & Repair

9:00 – 9:15 Recap

9:15 – 10:30 Preventive Maintenance

10:30 – 10:45 Break

10:45 – 12:00 Advanced Troubleshooting

12:00 – 1:00 Lunch

1:00 – 2:30 Practical Troubleshooting

2:30 – 2:45 Break

2:45 – 4:15 Repair Strategies & Efficiency

4:15 – 4:45 Assessment

4:45 – 5:00 Closing & Certificate Briefing