



PERTECNCA'S

CAR ENGINE DIAGNOSTICS REPAIR TRAINING BROCHURE



Practical training



Post training assistance

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CAR ENGINE DIAGNOSTICS & REPAIR TRAINING

The Car Engine Diagnostics & Repair Training is designed to equip trainees with the technical skills necessary to diagnose and repair common issues in car engines. This hands-on course covers a wide range of topics from basic engine components to advanced diagnostic techniques, ensuring that participants gain both theoretical and practical expertise. Whether you are new to automotive repair or looking to enhance your existing skills, this course will provide the knowledge required to maintain and repair car engines efficiently.

What you'll learn?

- Basic components and operation of car engines.
- Diagnosing engine performance problems using advanced tools.
- Repair techniques for common engine issues (misfires, stalling).
- Maintenance of cooling, lubrication, and fuel systems.
- Using OBD (On-Board Diagnostics) systems for fault detection.
- Engine disassembly, inspection, and reassembly.
- How to repair and replace critical engine components (gaskets, belts).
- Regular engine maintenance to improve longevity and performance.

Course summary:

This comprehensive course delves deep into engine diagnostics, focusing on understanding the root causes of engine malfunctions and performing repairs to restore optimal engine function. Participants will gain hands-on experience with both mechanical and electronic diagnostic tools, ensuring a practical learning experience that is directly applicable in the automotive repair field.

Key takeaways include:

- **Thorough Diagnostics:** Learn how to identify and troubleshoot various engine issues using modern diagnostic equipment.
- **Hands-On Experience:** Real-world repair scenarios to prepare you for engine disassembly and rebuilding.
- **Comprehensive Repair Skills:** Understand all critical engine components and their maintenance needs.

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Course syllabus:

Module 1: Introduction to Engine Systems

- Overview of internal combustion engines and types (gasoline, diesel).
- Components of car engines and their functions.
- Safety measures and best practices for working with engines.

Module 2: Engine Diagnostics Tools & Techniques

- Introduction to OBD (On-Board Diagnostics) systems.
- Using scan tools and diagnostic software.
- Interpreting diagnostic codes and identifying engine faults.

Module 3: Troubleshooting Engine Components

- Identifying problems in pistons, crankshafts, and valves.
- Diagnosing fuel system-related issues.
- Testing engine compression and vacuum levels.

Module 4: Ignition System Diagnostics & Repair

- Understanding spark plugs, ignition coils, and distributors.
- Troubleshooting ignition system failures.
- Practical: Replacing and servicing ignition components.

Module 5: Fuel System Diagnostics & Repair

- Diagnosing issues with fuel injectors and carburetors.
- Fuel pump testing and repair.
- Practical: Fuel system repair and cleaning.

Module 6: Cooling System Diagnostics & Repair

- Diagnosing radiator, thermostat, and water pump issues.
- Troubleshooting overheating problems.
- Practical: Cooling system flush and maintenance.

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Module 7: Lubrication System & Engine Wear

- Understanding oil circulation and lubrication systems.
- Diagnosing engine wear and oil-related problems.
- Practical: Oil change and lubrication system repair.

Module 8: Emission Control Systems

- Diagnosing issues with catalytic converters and oxygen sensors.
- Emission-related diagnostics and repair techniques.
- Practical: Testing and repairing emission control components.

Module 9: Engine Overhaul & Component Replacement

- Disassembling the engine for a complete overhaul.
- Replacing damaged engine components (pistons, valves, etc.).
- Practical: Engine reassembly and testing after overhaul.

Module 10: Performance Tuning & Optimization

- Advanced tuning for enhanced engine performance.
- Diagnosing and improving fuel efficiency and power output.
- Practical: Tuning engine components for performance.

Module 11: Evaluation & Certification

- Comprehensive assessment of theoretical and practical knowledge.
- Written exams covering electric bike repair and maintenance.
- Practical exams involving diagnostic and repair tasks.
- Certification awarded upon successful course completion.
- Career guidance and industry opportunities.

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Practical training:

- Engine inspection: Diagnosing internal and external engine damage.
- Cooling system maintenance: Detecting and repairing coolant leaks and overheating issues.
- Engine tune-ups: Timing belt, spark plugs, and filter replacements.
- Using diagnostic scanners: Reading OBD error codes and troubleshooting.
- Fuel system diagnostics: Injectors, pumps, and fuel line inspection and repair.
- Engine disassembly and assembly: Practical session on full engine rebuild.
- Identifying abnormal engine sounds: Locating and repairing issues related to abnormal sounds.
- Regular engine servicing: Performing complete engine service to ensure longevity.

Career scope:

Upon completing the Car engine diagnostics & repair training course, graduates can explore career opportunities in various sectors, including:

- Engine Diagnostics Specialist
- Automotive Engine Repair Technician
- Workshop Technician
- Freelance Mechanic
- Performance Tuning Expert
- Vehicle Inspection and Testing Expert
- Fleet Maintenance Technician
- Automotive Technical Consultant
- Workshop Manager
- Automotive Trainer

