



PERTECNCA'S

PUMP MECHANIC

TRAINING

BROCHURE



Practical training



Post training assistance

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PUMP MECHANIC TRAINING

Boost your technical skills with our Pump Mechanic training program. This course is designed to provide you with the essential knowledge and hands-on experience required to install, repair, and maintain various types of pumps. As a Pump Mechanic, you will learn about the different pump systems, their components, and the techniques necessary to ensure efficient operation and longevity.

What you'll learn?

- Basics of pump systems and types of pumps
- Installation procedures for different pumps
- Maintenance techniques for optimal pump performance
- Troubleshooting and repair of common pump issues
- Understanding pump components and their functions
- Safety practices for working with pump systems
- Reading and interpreting technical diagrams and manuals
- Use of tools and equipment for pump maintenance
- Hydraulic principles related to pump operation
- Energy efficiency in pump systems

Course summary:

Upon completing the Pump Mechanic training course, graduates can explore career opportunities in various sectors, including:

- Water treatment plants
- Industrial manufacturing units
- Oil and gas industries
- HVAC companies
- Municipal water supply and sewage treatment facilities
- Agricultural irrigation systems
- Construction companies
- Marine and shipping industries
- Chemical and pharmaceutical plants
- Pump manufacturing and servicing companies

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Course syllabus:

Module 1: Introduction to Pump Systems

- Overview of Pump Systems and Applications
- Roles and Responsibilities of a Pump Mechanic
- Types of Pumps (Centrifugal, Positive Displacement, Submersible)
- Basic Pump Operating Principles

Module 2: Pump Components and Terminology

- Identification and Function of Pump Components
- Types of Pump Impellers and Casings
- Pump Seals and Bearings
- Understanding Pump Curves and Performance Characteristics

Module 3: Pump Installation and Alignment

- Site Preparation and Safety Considerations
- Pump Foundation Design and Installation
- Shaft Alignment Techniques (Alignment Tools and Methods)
- Coupling Installation and Alignment

Module 4: Pump Operation and Control Systems

- Starting and Stopping Procedures
- Pump Control Methods (Manual, Automatic)
- Variable Frequency Drives (VFDs) and Pump Control Panels
- Monitoring Pump Performance (Flow, Pressure, Temperature)

Module 5: Pump Maintenance Practices

- Routine Maintenance Tasks (Lubrication, Greasing)
- Inspecting and Replacing Pump Seals and Bearings
- Preventive Maintenance Scheduling
- Condition Monitoring Techniques (Vibration Analysis, Thermography)

Module 6: Pump Troubleshooting and Diagnostics

- Common Pump Problems and Faults
- Troubleshooting Techniques (Systematic Approach)
- Root Cause Analysis Methods
- Corrective Actions and Repair Strategies

Module 7: Pump Overhaul and Repair

- Disassembly and Assembly Procedures
- Inspection of Pump Components (Impeller, Shaft, Casing)
- Clearances and Tolerances
- Repair Techniques for Pump Components

Module 8: Pump Testing and Performance Evaluation

- Pump Efficiency and Performance Testing
- Flow Measurement Techniques (Pitot Tubes, Flow Meters)
- Pressure Testing and Leakage Detection
- Efficiency Improvement Strategies

Module 9: Safety Practices in Pump Maintenance

- Personal Protective Equipment (PPE)
- Lockout/Tagout (LOTO) Procedures
- Safe Handling of Chemicals and Hazardous Materials
- Emergency Response and First Aid

Module 10: Environmental and Regulatory Compliance

- Environmental Regulations and Standards
- Waste Management and Disposal Practices
- Compliance with Occupational Health and Safety Regulations
- Record Keeping and Documentation Requirements

Module 11: Advanced Pump Technologies

- Emerging Pump Technologies (Smart Pumps, IoT Integration)
- Energy Efficiency in Pump Systems
- Retrofitting and Upgrading Pump Systems
- Application of Renewable Energy in Pumping

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Module 12: Customer Service and Professionalism

- Effective Communication with Clients and Team Members
- Estimating Costs and Providing Quotations
- Managing Client Expectations and Satisfaction
- Professional Ethics and Conduct

Module 13: Practical Training and Hands-On Experience

- Hands-On Pump Maintenance and Repair Exercises
- Simulation of Pump Failure Scenarios
- Field Visits to Pumping Stations and Facilities
- Application of Maintenance Techniques in Lab Settings

Module 14: Field Visits and Case Studies

- Visits to Operational Pump Systems
- Case Studies of Complex Pump Maintenance Projects
- Interaction with Industry Experts and Professionals
- Real-World Applications and Innovations

Evaluation and Certification

- Written and Practical Examinations
- Continuous Assessment through Assignments and Projects
- Certification upon Successful Completion

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Practical training:

- Hands-on experience in installing different types of pumps
- Practical training in diagnosing and repairing pump issues
- Real-time projects on maintenance procedures for optimal performance
- Workshops on reading and interpreting technical diagrams
- Case studies on successful pump installations and repairs
- Field visits to industries using various pump systems
- Training in the use of specialized tools and equipment
- Projects on ensuring energy efficiency in pump operations

Career scope:

Upon completing the Pump Mechanic training course, graduates can explore career opportunities in various sectors, including:

- Water treatment plants
- Industrial manufacturing units
- Oil and gas industries
- HVAC companies
- Municipal water supply and sewage treatment facilities
- Agricultural irrigation systems
- Construction companies
- Marine and shipping industries
- Chemical and pharmaceutical plants
- Pump manufacturing and servicing companies



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