



**Workshop on Pumps and Compressors:
Operation, Maintenance and Troubleshooting**
May 6 – 10, 2024, 1st Run: Lagos & Port Harcourt
November 4 – 8, 2024, 2nd Run: Lagos & Abuja
Tutor -Led Class: 9am – 4:30pm
Workshop fee: N300, 000 per Participant
For online: Delivery via Zoom
Online course fee: N250, 000 per Participant
Available for In-plant Training

**600 USD for foreign
Participants**

Program Overview:

This course covers the construction, design, operations and maintenance of compressors, and rotary/centrifugal/reciprocating pumps.

Topics discussed will include the different types of pumps and compressors, their potential problems, maintenance and testing concepts and troubleshooting techniques. The course will also cover the various methods of pump alignments such as visual, straight edge/feeler gauge, rim and face, reverse dial indication, cross dialing and laser alignment.

Participants will also learn how to diagnose soft foot conditions and perform correction techniques.

For Whom:

This course is designed for plant personnel responsible for the installation and maintenance of positive displacement/ centrifugal pumps and compressors, including plant maintenance technicians and mechanical maintenance technicians. It will also be beneficial for professionals managing and supervising personnel involved in the operation and maintenance of pumps and compressors

Learning Objectives:

At the end of the program, participants will be able to:

- describe the operation of centrifugal and positive displacement pumps including pump design aspects, laws, performance comparisons, characteristic curves and performance testing;
- test rotary pump performance and apply maintenance and troubleshooting techniques accordingly;
- identify reciprocating pump types and perform reciprocating pump maintenance and troubleshooting;
- determine centrifugal pump problems and perform centrifugal pump maintenance and troubleshooting;
- identify compressor types, how they operate, their common problems, and perform troubleshooting techniques;
- apply the various methods of pump alignments such as visual, straight edge and feeler gauge, rim and face, reverse dial indication, cross dialing and laser alignment; and
- diagnose soft foot conditions and apply measurement and correction techniques.

Course Outline:

Day 1: Pump operation and theory

- Centrifugal pumps
- Design aspects
- Pump laws
- Positive displacement pumps

- Performance comparisons
- Special purpose pumps
- Pump characteristic curves
- Performance testing
- Pump performance
- Pump tests
- Pump problems
- Pump maintenance
- Pump troubleshooting

Day 2: Pumps maintenance and troubleshooting

- pump types
- Reciprocating Pump problems
- Pump maintenance
- Pump troubleshooting
- Centrifugal pump maintenance and troubleshooting
- Pump problems
- Pump maintenance
- Pump troubleshooting
- Pump inspections

Day 3: Compressor maintenance and troubleshooting

- Rotary screw compressors
- Rotary vane compressors
- Lobe type compressors
- Reciprocating compressors
- Lubrication and cooling

Day 4: Pump alignment methods

- Straight edge and feeler gauge
- Rim and face
- Reverse dial indication
- Cross dialing
- Laser alignment
- Mathematical alignment formula calculations
- Graphical solutions

Day 5: Soft foot correction and tolerances

- Maintenance as a business process
- How scheduled maintenance can lock in waste and cost
- Drawing learning from recurring maintenance tasks
- Reviewing planned maintenance
- Dealing with the productivity challenge
- Refining maintenance policies
- Capturing learning from inspection work

LOCATIONS

1 - HCA Learning Centre. Acme House 2nd Floor, 23, Acme Road, Ogba, Industrial Scheme, Ikeja, Lagos, Nigeria

2 - Green-Minds Hotel, Plot 764, Cadastral Zone B05, E. Ekuinam Street, Utako District, Abuja

3 – Pakiri hotel Ltd., 4 Okwuruola Street, off Stadium Road, Rumuola, Port Harcourt, Rivers State.

Open Course Fee: N300, 000

In-plant Fee Negotiable

WORKSHOP FEE:

N300, 000 per participant, VAT –N22, 500

Note: this covers Workshop Fee, Tea/coffee break, Lunch, course materials and certificate of attendance.

Payment should be made into our Accounts:

Account Name: Human Capital Associates Global Consult Ltd.

Union Bank of Nig. PLC: Account No: 0097961537

First Bank of Nig. PLC: Account No: 2033683960

Keystone Bank Ltd.: Account No: 1007150325

For Booking / Enquiry, Call: 234-8051365946, 234-7087578814

24/7 Lines: 234-8068933608, 234-8029170491, 234-8145745664,

& 234-9112830607

Training Methodology

Lectures, discussions, exercises, case studies, audio-visual aids will be used to reinforce these teaching/learning methods.