Pumps & Compressors Operation Maintenance & Troubleshooting

Course general description and who should attend:

This course is intended for both mechanical and maintenance engineers. It discusses the main principles of pumps and compressors operation and maintenance. Different failure modes, troubleshooting techniques, and case studies will also be included.

Course objectives:

Participants will have the ability to select the proper type and size of pumps and compressors according to application and to judge their performance characteristics. They will be familiar with their operation and maintenance. They will also become able to identify common failure modes and their causes. Process control and instrumentation for compressors will also be discussed with emphasis on safe and economic operational modes.

Course duration:

Five days

Course location:

Abu Dhabi

Course contents:

Day-1

- Introduction to pumps
- Centrifugal pumps theory of operation
- Positive displacement pumps theory of operation
- Pumps codes and standards
- Pumps selection and sizing

Day-2

- Centrifugal pumps main components (including mechanical seals, and bearings)
- Assembly and Disassembly of centrifugal pumps main components
- Positive displacement (PD) pumps main components
- Assembly and Disassembly of main PD pumps components
- Operation and maintenance of different pump types
- Case studies

Day-3

- Introduction to compressors
- Centrifugal compressors theory of operation
- Positive displacement compressors theory of operation
- Compressors codes and standards
- Compressors selection and sizing

Day-4

- Centrifugal compressors main components (including dry gas seals, and bearings)
- Assembly and Disassembly of centrifugal compressors main components
- Positive displacement (PD) compressors main components
- Assembly and Disassembly of main PD compressors components
- Operation and maintenance of different compressor types
- Case studies

Day-5

- Practical case of centrifugal pump selection, basic calculations, motor selection & shaft sizing
- Course recap
- Open discussion
- Posttest

Methodology:

- 50% lectures & concepts
- 10% Videos
- 10% Case studies
- 10% Exercises
- 10% Discussions
- 10% Software (if applicable or examples)

Course code: (TEME002)