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| **FROM** |
| Company Name | **Advanced Step for Tech Training** | Tel | **+971 4 2829212** |
| Address | P.O.Box : 22650, Dubai - UAE. | Fax | **+971 4 2829213** |
| From | **Malak Mohammed** | Job Title | **Training Operation Manager** |
| Mob | **0097150 2601172** **Mr Tareq**0097156 6939199  **Mrs. Malak** | E-mail | **malak@astdubai.net** |

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| **Course Details** |
| **Course Title:** | PUMPS TECHNOLOGY |
| **Language:** | English |
| **Course Type:** | Public |
| **Location** | Dubai  |
| **Date:** | 06-10 November 2016 |
| **Duration:** | **5 Days** |
| **Fees:** | **$ 4,000** |
| **Discount:** | **10%**discount if your nomination for **3** Participants**15%**discount if your nomination for **4** Participants |
| **URL** | **http://www.astdubai.co/programs/details/10186\_PUMPS\_TECHNOLOGY** |

PUMPS TECHNOLOGY

Introduction

The seminar will introduce delegates to the different types of pumps and valves and their associated terminology. Centrifugal and positive-displacement pumps, packing, mechanical seals and sealing systems, bearings and couplings will all be discussed. Valves for isolation and valves for control will be addressed.

The application of the different types of pumps and valves will be discussed along with their suitability for different operational duties. Operation, troubleshooting and maintenance will be dealt with in depth.

The knowledge gained in this seminar will:

Enable the delegate to optimise the operation and maintenance of different types of pumps

Give the delegate confidence to carry out failure analyses on pumps thereby avoiding repetitive failures

Allow tighter control of maintenance budgets by the avoidance of unplanned equipment failures in service

Objectives

At the end of this seminar, participants will:

Have an understanding of the different types of pumps and their associated terminology

Have an understanding of Centrifugal and positive displacement pumps, packing, mechanical seals and sealing systems, bearings and couplings

Have an understanding of different parameters affecting the operation of valves

Have the ability to select the right valve for the particular application and to perform the necessary calculation for valve sizing

Have the ability to perform troubleshooting of systems involving valves

Have the ability to decide on the right maintenance plan concerning different types of valves

Training Methodology

The seminar will be conducted along workshop principles with formal lectures, case studies and interactive worked examples. Relevant case studies will be provided to illustrate the application of each tool in an operations environment. Each learning point will be re-enforced with practical exercises. There will be ample opportunities for discussion and sharing experiences.

SEMINAR OUTLINE

DAY 1

Pumping Systems

Introduction

Pump Types and Terminology

Pump Performance (Centrifugal and Positive Displacement)

Understanding Head

Types of Head: Friction, Pressure, Static & Velocity

Friction in Valves, Piping & Fittings

Calculating Actual Head in a System

Cavitation in pumps and valves

Net Positive Suction Head (NPSH)

Vapour and Gas Cavitation

Flashing versus Cavitation

DAY 2

Pump Types

Positive Displacement Pumps

Reciprocating Pumps

Reciprocating Pump Valves

Rotary Pumps – scroll and gear types

Failure Mechanisms – identification and monitoring

Centrifugal Pumps

Centrifugal Pump Theory

Pump Components

Matching Pumps with Drivers

Performance Analysis

Failure Mechanisms – identification and monitoring

DAY 3

Achieving Pump Reliability

Sealing Systems

Conventional Packing Glands, Mechanical Seals & Flush Plans

Seal Failure Mechanisms

Maintenance and Repair of Mechanical Seals

Bearings – failure modes and how to extend life

Lubrication

Plain Bearings

Anti-Friction Bearings

Couplings & Alignment

Couplings

Alignment & Balancing

Foundations & Bedplates

DAY 4

Valves Technology

Types of Valves (globe, gate, ball, plug, check)

Flow characteristics

Flow through valves

Valve flow characteristics

Linear, quick opening & equal %

Valve Sizing

Calculating the correct Cv value

Selecting Valve Size Using Valve Coefficient

Calculations for Correct Valve Selection

Sealing performance

Leakage Classifications

Sealing Mechanisms

Valve stem seals

DAY 5

Valves Troubleshooting & Maintenance

High Pressure Drop

Pressure Recovery Characteristics

Flow Choking

High Velocities

Water Hammer

What causes water hammer?

Solutions for water hammer

Troubleshooting the Control & Isolation Valves

Review of common faults

Developing a Preventive Maintenance Plan

Review of the Week & Wrap-Up

# Training Methodology:

* Lecture
* Exercises
* Case Studies
* Video Presentation
* Question and Answer Session
* Live Audit

We trust the above price meets your requirements and we look forward to hear from you soon. Please do not hesitate to contact us should you require any further information.