Training Title

PIPING SYSTEM & PROCESS EQUIPMENT

Training Duration

5 days

Training Venue and Dates

REF PE030	Piping System & Process Equipment	5	12 – 16 May 2025	$6,500	London, UK

In any of the 4 or 5-star hotels. The exact venue will be informed once finalized.

Training Fees

$6,500 per participant. Fees Include Course Materials/Handouts, Tea/ Coffee, refreshments, and Lunch.

Training Certificate

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

TRAINING OVERVIEW

COURSE DESCRIPTION

Process plants, such as refineries and petrochemical plants, are complex facilities consisting of equipment, piping systems, instruments, electrical systems, electronics, computers, and control systems. The design, engineering, and construction of process plants involve a multidisciplinary team effort. Plant layout and design of piping systems constitute a major part of the design and engineering effort. The goal is to design safe and dependable processing facilities cost-effectively. Process Plant Layout covers the terminology and concepts needed for equipment layout within the process plant. This includes equipment placement, spacing, and orientation. It also includes pipe routing to key equipment nozzles considering operations and maintenance. The objective of this course is to cover the fundamental principles and concepts used in process plant layout and piping design. Upon completion of this course, the delegates will have a clear understanding of the design and engineering principles used in plant layout and piping design.

OBJECTIVE

- **Efficiency Improvement**: Enhance the efficiency of fluid flow through the piping system to minimize energy consumption and operational costs.
- **Reliability Enhancement**: Ensure the reliability and durability of process equipment to reduce downtime and maintenance costs.
- **Safety Optimization**: Implement safety measures to mitigate risks associated with handling hazardous materials and operating high-pressure systems.
- **Compliance with Standards**: Ensure that all components of the piping system and process equipment comply with relevant industry standards and regulations.
- **Environmental Impact**: Minimize the environmental impact of operations by optimizing processes and reducing emissions and waste.
- **Cost Reduction**: Identify opportunities for cost reduction through improved design, material selection, and operational efficiency.

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

- **Capacity Expansion**: Plan and implement expansions or modifications to increase the capacity of the piping system and process equipment to meet growing demand.
- **Quality Control**: Implement quality control measures to maintain consistent product quality and performance.
- **Technology Integration**: Integrate new technologies such as IoT, automation, or predictive maintenance to improve monitoring and control of the piping system and equipment.
- **Training and Development**: Provide training programs to ensure that personnel are well-equipped to operate, maintain, and troubleshoot the piping system and process equipment effectively.

WHO SHOULD ATTEND?

Managers, engineers, operators, supervisors, inspectors, equipment suppliers, or those who wish to be familiar with plant systems.

TRAINING METHODOLOGY:

A highly interactive combination of lectures and discussion sessions will be managed to maximize the amount and quality of information and knowledge transfer. The sessions will start by raising the most relevant questions and motivating everybody to find the right answers. You will also be encouraged to raise your own questions and share in developing the right answers using your own analysis and experiences. Tests of multiple-choice type will be made available daily to examine the effectiveness of delivering the course.

Very useful Course Materials will be given.

- **30% Lectures**
- **30% Workshops and work presentation**
- **20% Group Work& Practical Exercises**
- **20% Videos& General Discussions**

COURSE CONTENTS

▪ Considerations of Plant Design & Layout

- **Feasibility Study**
- **Hazardous and Toxic Areas**
- **Safety Considerations**
- **Aesthetic Considerations**
- **Process flow diagrams (PFDs)**
- **Economic Evaluation**
- **Site Considerations**
- **External Influences**

▪ Layout Specifications

- **Site Selection Considerations**
  - *** Future Extensions**
  - *** Contour of the Ground**
  - *** Prevailing Wind**

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

* External Factors

- Plant Layout Considerations
  * Access Arrangements
  * Hazardous Area Classification
  * Operability
  * Elevations
  * Clearances
  * Paving
  * Insulation

- Layout Review

▪ Layout of Static Equipment in Process Plants
- Columns and Drums (Vertical/Horizontal)
- Exchangers
- Furnaces and Fired Equipment
- Storage Tanks
- Access to Valves and Instruments
- Relief Valve Systems
- Maintenance and Equipment Handling

▪ Piping Layout
- General
- Information Required
- Evaluation of Information
- Line Identification
- Piperack Width
- Piperack Elevation
- Line Location in Piperack's
- Piping Economy in Piperack and its Influence on Plant Layout
- Piperack General Arrangement Checklist
- Pipe tracks
- Trenched Piping
- Underground Piping

▪ Pump Layout
- General
- Centrifugal Pumps
- Reciprocating Pumps
- Rotary Pumps
- Pump Drivers
- Pump Harness Piping

▪ Compressor Layout

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com

- **Introduction**
- **Reciprocating Compressors**
- **Centrifugal Compressors**
- **Drives**

NOTE:

Pre-& Post Tests will be conducted

Case Studies, Group Exercises, Group Discussions, Last Day Reviews, and assessments will be carried out.

.....

P.O BOX 45304
ABU DHABI, U.A.E
T +971 2 6264455
F +971 2 6275344
www.definetraining.com