

## Pipelines & Piping Inspection

*Barcelona (Spain)*

*18 - 22 November 2024*

UK Traininig

# PARTNER



## Pipelines & Piping Inspection

Code: OG28 From: 18 - 22 November 2024 City: Barcelona (Spain) Fees: 4700 Pound

### Introduction

The course covers pipelines and piping systems design, inspection and maintenance. Upon completion of this course, delegates will be able to evaluate the mechanical design of pipelines and piping systems in accordance. They will also be able to develop a pipelines and piping systems maintenance program based on other industry practices, and then apply these requirements to typical pipelines and piping systems maintenance situations.

This course will provide an overview of pipelines and piping systems maintenance, including inspection, evaluation of various defects, and repair/alteration rules of various Codes and Standards. Simple evaluation methods for several types of defects will be described, and their use demonstrated using sample problems.

### Course objective

- Develop an in-depth understanding of the ASME B31 design, construction, inspection and testing rules; as well as their application to integrity assessment of operating systems
- Gain an in-depth knowledge of pipe and fitting material specifications, fabrication process and influence on mechanical properties of strength and toughness, to help in inspections and failure analysis
- Understand the technical background to the design equations, and their application to the design of piping systems and pipelines.
- Address rules of good practice in layout of piping systems for reliable operation.
- Gain a practical understanding of piping and pipeline corrosion mechanisms, how to recognize them, classify them and resolve them
- Be introduced to the latest techniques and research in piping

### Course outlines

#### DAY 1

##### INTRODUCTION

- ASME & API Codes and Standards
- Fundamentals of Maintenance and Integrity
- Pipe Dimensions and Schedule number
- Understanding System Design Pressure
- Pipe and Pipeline Sizing Formula with Applications

#### DAY 2

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## LEAK DETECTION

- On Line Leak Detection
- Periodic Inspections

## REPAIR TECHNIQUES

- Patch & Weld Repairs
- Clamps
- Flanges
- Overview of Pipe and Pipeline Welding Practice
- Welded Repairs
- Heat Treatment

## DAY 3 --PIPELINE & PIPING INSPECTIONS

### PRESSURE & LEAK TESTING

- Hydrotest
- System Testing

### PIGGING TECHNIQUES

- Types of Pigs
- Monitoring Internal Corrosion

### LAYOUT AND SUPPORT

- Pipeline Loadings
- Review of Pipe Supports and Their Application
- Lessons Learned from Poor Support Practices

## DAY 4

### CORROSION PROTECTION

- Cathodic & Anodic Protection Systems
- Impressed Current Systems

## DAY 5

### VIBRATION IN SERVICE & PRESSURE TRANSIENTS

- Mechanical and Hydraulic Induced Vibration in Piping
- How to Measure, Analyze and Resolve Vibration
- Recognizing and Solving Liquid Hammer
- Pulsation





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