



# Fundamental Of Pipeline Design, Inspection, Testing & Hydraulic Modeling



## Introduction:

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The intent and objective of this course is to provide the participants with the information relative to the basic concepts and principals involved with the design, inspection and testing of pipeline, Guidelines and notes, Piping arrangement, Stress on piping, Valves in piping design, Make maintenance simple, P & ID, Design points, Graphic method for finding loads on support, Pumps, Compressors, Fundamentals of fluid flow, Computer applications, Piping inspection code, Inspection of buried piping, Risk based inspection

## Who Should Attend?

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Technicians, Mechanics , Machine Operators, Building Owners, Plant Engineers, Facility Managers, Any Person involved in Cross-training, or Multi-craft Skills programs. Any Person involved in Cross-training, or Multi-craft Skills programs.

## Course Objectives:

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### After attending this course you will be able to:

- Know about design concepts of pipeline.

- Preparing for inspection and testing procedures.
- Preparing for pressure and flow rate balancing procedures.
- How to make a maintenance plan for pipeline.
- How to evaluate the equipment life Maintenance

## Course Outline:

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### Day 1

- Guidelines and notes
- Arranging piping
- Piping arrangement
- Removing equipment and cleaning lines
- Stress on piping
- Resistance of piping to flow
- Valves in piping design

### Day 2

- Make maintenance simple
- P & ID
- Piping safety and relief valves
- Control stations
- Design points
- Arranging supports for piping
- Graphic method for finding loads on supports

## Day 3

- Thermal movements
- Welding pipe support and platform brackets to vessels
- Pumps
- Suction and Discharge line
- Cavitations problem
- Water hammer
- Compressors
- Suction piping for air compressors

## Day 4

- Fundamentals of fluid flow
- Fluid flow in pipes
- Head loss in pipeline
- Computer applications
- Piping inspection code

## Day 5

- Inspection and testing practices
- Frequency and extent of inspection
- Inspection data evaluation, analysis, and recording
- Repairs, alterations, and relating of piping systems
- Inspection of buried piping
- Risk based inspection