

(ME#23) DETAILS ENGINEERING OF PIPING SYSTEMS

Turning GOOD Engineers into GREAT Engineers!

COURSE OVERVIEW

This course will be of interest to people employed in any area that piping is present, be it Refinery, Chemical, Power, Pulp and Paper, Utility etc. It shall introduce engineers, designers & construction personnel to the various procedures involved in the development & engineering of Piping & Instrumentation Diagrams (P&IDs), Equipment Plot Plans, Piping Arrangements & Fabrication Drawings. This will include pipe sizing, pressure drop calculations, pump and equipment sizing & selection, preparation of equipment specifications & drawings, piping specifications, instrumentation & process control as well as piping component familiarization. Traditionally there has been little formal training in this area & design decisions often have to be made based on practical considerations without formulae or code reinforcement. Completing piping drawings take up the majority of man-hours in the design of a process plant .

WHO SHOULD ATTEND

- Piping engineer & design personnel wishing to expand their knowledge of piping & instrumentation.
- Engineers, designers, CAD operators & draftspersons in the piping field.
- Piping fabricators, contractors & suppliers wishing to understand the relationship of manufacture and fabrication to the design, layout and construction of piping systems.
- Practicing engineers & designers who may have experience in related disciplines & wish to expand their knowledge of the piping area.

LEARNING APPROACH

This comprehensive course that will give attendees the background required to design, engineer and complete piping assignments. Workshop consisting of a series of projects where attendees will have an opportunity to produce specifications, develop a P&ID and perform the calculations involved, including line sizing, pump sizing and selection. Each session will be conducted in lectures, discussion & problem solving format

INTERESTING TOPICS COVERED DURING THE COURSE

- Piping Terminology
- Process Flow Diagram
- Development of Piping and Instrumentation Diagram (P&ID)
- Piping and Instrumentation Functions
- Equipment Function, Sizing and selection of pumps, exchangers, pressure vessels
- Pipe Sizing
- Isometric and Orthographic Drawings
- Bills of Material for piping drawings
- Valve and Piping Fitting function
- Dimensioning of piping fittings and valves
- Piping Documentation, Specifications
- Instrumentation Specs
- Instrumentation - Pressure, Level, Temperature and Flow, Process Control
- Process and Utility Piping
- Pipe Supports and Hangers, Selection and Location, Anchors, Guides, Restraints
- Steam and Condensate Piping, Steam Traps, Condensate Collection Systems, Drip Legs
- Interpreting Plot Plans and Equipment Layouts
- Preliminary Stress Analysis. Applicable Codes and standards