

SmartBrains Institute of Engineering Design & Research

Piping Detailed Engineering Program

Module Details

Module I

Piping Fundamentals

- Introduction to Process Plants
- Scope of Piping in Projects.

ASME Codes & Standards

- Introduction to ASME Pressure Piping Design Codes.
- ASME Standards for Common Piping Elements.
- ANSI Codes

Pipe and Fittings

- Classification of Pipes, Special Parts
- Pipe Fittings, Classification of Flanges Valves
- Valve Types

Plot Plan and Equipment Layout

- Plot Plan Development
- Equipment Layout

Piping Layout & Rack piping

- Piping Plan Development
- Preparing Piping Layout Drawings by placing instruments, valves etc
- Rack Piping

Line Sizing

- Pipe Sizing Procedures & thickness calculation

Piping Isometrics

- Definition
- Drawing Piping Isometrics
- Isometric Dimensions, Notes & Callouts.
- Isometric Offsets.
- Print Reading Exercises.
- Exercises on Creation of Isometrics form Piping Plans and Sections.

Piping Study

- Drum Piping, Pump Piping
- Compressor Piping, Heat Exchanger Piping
- Column Piping, Reactor Piping

Piping Spools

- Definition
- Types of Spool Drawings.
- Guidelines to Prepare Spool Drawings.
- Print Reading Exercises.
- Exercises on Creation of Piping Spool from Piping Isometrics.
- Preparation of BOQ.

Pipe Supports

- Classification of Supports
- Primary & Secondary
- Anchors
- Pipe Guides
- Limit Stops
- Pipe Shoe
- Dummy Leg / Trunion
- Field Support / Base Support
- Rigid Hangers – Rod & Clevis, Trapeze.
- Flexible Hangers – Variable & Constant.
- Pipe Rack Design – Types, Height & Width Calculations, Pipe Arrangements
- Control Station & Utility Station on Pipe Racks
- Numerous Examples are covered to illustrate application Piping Systems
- Detailed Engineering / Layout Engineering & Pipe Drafting.

INSULATION & HEAT TRACING

- Insulation
- Preparing an Insulation Specification
- Data required to prepare Insulation Specification
- Heat Tracing

MATERIAL TAKE OFF

Module II

Plant Design Management System (PDMS)

- PDMS overview
- Various Modules

Equipment Modeling

- Creating Equipment by using primitives
- Creating Equipments by using PDMS standards catalogue.
- Creating Obstructions
- Manipulation of primitives & equipments
- Nozzles placements & manipulations
- Understanding parameters & attributes
- DB Utility

Pipe Design

- Pipe & Branch creations
- Pipe Routing & Slope piping
- Manipulating Piping components & Assemblies
- Checking Data consistency
- Checking & rectifying classes.
- Locating Supports & deciding Supports span
- Generating text reports like Line & Supports Lists

Draft

- Preparing Layouts by using Draft modules
- Creating Views
- Amotion & Dimensioning

ISO Draft

- Extracting Isometrics

Preparing Isometrics for Fabrication & Erection
