PIPING DIPLOMA TRAINING SYLLABUS

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Piping Basics

- Introduction of piping engineering-role of piping engineers in EPC & various Industries
- Introduction to Process Plant engineering, Piping in Process Plant
- Classifications of Pipes -Process pipe, Line Pipe, Structural Pipe - Manufacturing methods
- Piping engineers' interaction with various departments
- Engineering flow diagrams- BFD, PFD, PUD, etc.
- Piping Instrumentation diagram
- Piping codes and standards (ASME, IS, ANSI, DIN, BS)
- Pipe fittings
- Pipe class components
- Statutory Regulations in piping
- Pipeline Sizing
- Pumps and Compressors (All Types Included)
- Process Instrumentation from Piping
- Perspective

Piping Materials

- Piping Material and selection procedure
- Valve selection and specification (fluids and hydraulic]
- Pipe Supports and span calculations
- Pipe fittings Selection procedure
- Piping Design Codes
  ASME B 31.3
  ASME B 31.1
  ASME B 31.4
  ASME B 31.8

Reinforcement Pad Calculation

- Reinforcement Pad & Requirements.
  R.Pad Calculations Formula As per ASME B 31.3 Stress & strain Diagram.
  Calculations for Various Cases.

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Piping System Design & Layout

- Equipment Layout
- Plot Plan Design & Requirement as per OISD
- Dyke Wall/Tank from layout
- Piping G.A
- Isometric Drawings
- Bill of Material, Costing.
- Column Piping /Tower Piping Layout
- Condenser / Exchanger Piping Layout
- Tank Piping & Pump Piping
- Plot plan /Plant Layout/Legends P& ID/Equipment Layout/Piping Plan & Elevation
- General Arrangement of Pipe Racks
- Piping Plot Plan Calculations.

Pipe Stress Analysis

- Material Specifications and Commonly used CS & SS materials for Piping components
- Fundamentals of SOM relevant to Pipe stress analysis
- Preliminary Load calculations based on pressure and pipe/fluid weights
- Primary and Secondary Loads. Concept of principal stresses
- Combined pipe stress analysis including weight analysis, Thermal analysis, Flexibility analysis.
- Introduction to wind and seismic analysis
- Expansion Joints & Expansion bellows including simple loop calculations (Detailed Hands-On Calculations)

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SOFTWARE PROGRAM

CAESAR - II

- Basic Inputting
- Modeling of Piping & Equipment
- Wind, Snow and Seismic Factors
- Supports and their Considerations in CAESAR
- Different Load cases
- Qualifying the System for Stresses
- Reading Output
- Standard Thumb Rule for Analysis
- Report generation & Documentation
- Final Document for IFC
- Small Projects and Exercises

E3D OR SP3D Software

- Equipment
- Piping
- Structure
- Electrical
- HVAC6
- Hangers Supports
- Report (MTO)
- Spooler & ISO Draft
- Draft
- Commands

Duration: 120 Hours

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