

Training & Certification Program in Mechanical Design Engineering

Overview:

- Overview of Industry and role of Equipment Designer in various Fields.
- Basic Design requirement based on the type of Plant/Project.
- Overview of PFD, P&ID and Process Data Sheets.
- Mechanical design of Process Equipments. (Vessels, Reactors, Heat Exchangers, Distillation Columns, Chimney, etc.)
- Preparation of G.A. Drawings and Fabrication drawings of Equipments.
- Overview of Rotary Equipments.
- Overview of Piping/Nozzle Orientation/Isometric etc.
- Basic Information about Welding, Inspection & Testing.
- Inputs required and use of the inputs.
- Relevant Codes & Standards used in Industry.
- Material Inspection.
- Use of vendor data while designing of equipments.
- Checking of Vendor data.
- Interview Preparation and Mock Interviews.

Module Details

Basic Engineering Package

- Overview of Industry and role of Mechanical Design Engineer in various Fields.
- Basic Design requirement based on the type of Plant/Project.
- Overview of PFD, P&ID and Mechanical Datasheet.
- Relevant Codes and Standards used in Industry.
- Preparation of mechanical equipment specification.
- Basic Information about Welding, Inspection & Testing.

Material Engineering:

- Introduction of metallurgy, review of engineering properties, stress-strain diagrams.
- Factors governing choice of materials, criteria for material selection for process equipment.
- Commonly used carbon steels / stainless steels / alloy steels
- Choice of materials for low temperatures / high temperatures, corrosive service.
- Gasket materials, non metallic material etc.
- Painting and coating for corrosion protection, surface preparation, pickling & passivation.

Static Equipments Design:

- Selection
- Sizing
- detailed engineering of Static equipments

Heat Exchanger

- Heat exchanger types, classification, categories and nomenclatures in TEMA standards, physical phenomena in condenser / reboiler / regular shell & tube type.
- Mechanical design adhering to ASME and TEMA, design of Tubesheet as per TEMA for bending and shear loadings, sizing of non-pressure parts such as baffles, spacers, tie-rods, PP plates, etc.

Pressure Vessels

- Design principles from strength of materials, code philosophy understanding requirements of codes.
- Pressure vessel categories & classification, code rules for design of cylindrical vessels, spherical vessels, dished heads, flat heads, nozzle reinforcements, welded joints, etc.
- Design considerations for jacketed vessels, tall towers, horizontal bullets with saddle supports. (wind loads / seismic load considerations)

Storage Tanks

- Classification of storage tanks – bulk storage and day storage, sizing & optimization, Design of tank components as per codes & standards, bottom plate layout & testing.
- Shell design by one foot-method, conical roof & dome roofs, basic considerations in design of floating roofs, design for wind girders / stiffness, nozzles and accessories.
- Inspection & testing.

Rotating Equipment Design:

- Introduction of Rotary Equipments.
- Selection

- Sizing
- Detailed engineering of rotating equipment such as-Turbines, Compressors, Pumps and Fans.

Application Procedure

Submit Dully filled attached Admission Query Form, along with your updated CV at our office or mail it to "**info@smartbrains.in**".

Admission would be given only to shortlisted candidates. Please confirm your admission on allotted dates.

Documents Required

- 2 PP Size Photograph.
- 1Photo ID Proof, 1 Address Proof.
- 1 Photo stat of qualifying exam certificate
- 1 hard copy of your CV.

For further Information and Admissions Contact:

SmartBrains Engineers & Technologist Pvt. Ltd.

12 - A, 2nd Floor
Ahinsa Khand - II
Indirapuram, Ghaziabad-201010

Off. +91-120-4104994

Mob: +91- 9891108700/9810554003

Email: info@smartbrains.in

Website: www.smartbrains.in