IPEBS

Energizing Engineering - Empowering Engineers

ISO 9001 : 2008

Institute of Piping Engineering & Building Services

CERTIFICATE ONLINE TRAINING COURSE

PROCESS PIPING DESIGN & ARRANGEMENT

Course Speaker:

Mr. M. A. Shams Tabrez

Piping / Pipeline Design & Engineering Specialist
B. E. Mechanical Engineering
PGDPE (Piping Engineering)
International Trainer & Course Speaker.

ABOUT TRAINING PROGRAM

This course aims to transfer useful and essential knowledge related to design and layout of piping system which can help the participant broaden the existing knowledge he holds.

The program gives a comprehensive knowledge of piping fundamentals which includes the various piping components, their international standards, materials, drawings involved from start to end of a piping project, drawings terminology and the concept involved in their creation. The program focus on the real time work related concepts and issues, which is enhanced by the inputs of the instructor's practical experience.

The **Online Training Course** is developed by the faculty of **IPEBS**, who are International Course Speakers and have more than 20 years work & training experience individually.

COURSE OBJECTIVE

Upon the successful completion of the course, participants will be able to:

- Perform various tasks in his piping works, which can be related to Layout & Design, installation, in a Design Office, EPC Companies, & Plant Owner Companies.
- Create & Understand Piping Layouts and Isometrics.
- Create MTO (Material Take off)
- Establish Pressure Ratings for Piping Components, Valves / Flanges.
- Understand & Use ASME B 16 Component Standards.
- Interpret Pipe Properties
- Understand Equipment Vendor Drawings.
- Create Equipment Layouts
- Understand PFD's & P& ID's
- Select Flange, Gaskets, Valves etc.

PROGRAM FEATURES

- ✓ In-depth course content for easy understanding.
- ✓ Blended Learning: Online contact with faculty.
- ✓ Accessibility to Course Faculty & Counseling Services.
- ✓ Job oriented training program.
- ✓ Student will be job ready, after the course.
- ✓ Student will acquire skills and knowledge similar to working professional.

WHO SHOULD ATTEND

- **Graduating College Students in the following disciplines**

✓ Mechanical Engineers
✓ Chemical Engineers
✓ Petroleum Engineers
✓ Production / Industrial Engineers
✓ Diploma / ITI

- **Working Professionals**

✓ Piping Design / Layout Engineers
✓ Pipeline Engineers
✓ Pipe Stress Engineers
✓ Pipeline Contractor
✓ Mechanical Engineers
✓ Pipeline Operators
✓ Senior Draftsman
✓ Government Regulators
✓ Inspection Engineers
✓ Piping QA / QC Engineers
✓ Piping Supervisors

- **Corporate / Organizations**

  - ✓ EPC Companies
  - ✓ Piping Equipment Manufacturing Companies
  - ✓ Piping Consultants
  - ✓ Piping Contractors
  - ✓ Thermal Power Plants Industry
  - ✓ Ship Building / Marine Industry

COURSE MODULES

- ✓ **Piping Fundamentals**
- ✓ **Pipe Data**
- ✓ **Pipe Fittings**
- ✓ **Flanges**
- ✓ **Valves**
- ✓ **Pipe Materials**
- ✓ **Piping Component Standards**
- ✓ **Piping Special Elements**
- ✓ **Mechanical Equipments**
- ✓ **Flow Diagrams**
- ✓ **Instruments**
- ✓ **Plot Plan, Equipment Layout**
- ✓ **Piping Layout**
- ✓ **Piping Isometrics**
- ✓ **Pipe Supports**
- ✓ **Miscellaneous Topics**

Detailed Course Modules

Piping Fundamentals

- Process Plants
- Pipe & Tube Piping Scope in Projects
- Piping & Pipelines
- Codes & Standards

Pipe Data

- NPS / IPS
- Wall Thickness
- Pipe Joints
- Pipe Manufacturing
- Pipe Symbols

Exercise: Interpreting Pipe Data

Pipe Fittings

- Elbows
- Branch Connections
- Reducers
- Couplings
- Cap
- Plug
- Union Swage
- Stub Ends
- Fitting Ratings
- Drafting Symbols

Exercise: Fittings Representation on drawings

Flanges

Types/Ratings/Faces/Bolts & Nuts/Gaskets

- Slip on
- Weld Neck
- Socket Weld
- Screwed
- Loose/Lap Joints
- Reducing
- Blind

Exercise: Flange Type, Facing, P-T rating, Material Selection

Valves

Valve Parts/Trim/Ratings/Data Sheets

- Gate
- Globe
- Angle
- Check
- Needle
- Diaphragm
- Butterfly
- Special Purpose Valves
  - ✓ Flush Bottom Valves
  - ✓ Foot Valves
  - ✓ Float Valves
  - ✓ Three/Four Way Valves
- Piston
- Knife Gate
- Safety/Relief Valves
- Control Valves
- Ball
- Plug

Exercise: Valve Type, Material, Pressure Class selection

Pipe Materials

- Metallic Pipe Materials
- Non Metallic Pipe Materials
- ASTM Pipe/component Specifications

Piping Component Standards

Scope/Dimensions/Pressure Classes

- ASME B 36.10
- ASME B36.19
- ASME B 16.11
- ASME B 16.9
- ASME B 16.28
- ASME B 16.34
- ASME B 16.10
- ASME B 16.47
- ASME B 18.2.1
- ASME B 18.2.2
- ASME B 16.20
- ASME B 16.21

Exercise: Interpreting Standards to find Dimensions & Pressure Class of Components

Piping Special Elements

- Strainers
- Rupture Disc
- Steam Trap
- Flame Arrestor
- Vortex Breaker
- Blanks
- Spacers
- Expansion Joints

Mechanical Equipments

- Static & Rotary Equipments
- Static Equipments
  - ✓ Horizontal vessels
  - ✓ Distillation Columns
  - ✓ Heat Exchangers
  - ✓ Reboilers
  - ✓ Reactors

Flow Diagrams

- BFD
- PFD
- PID
- UFD
- Line Numbering on PID
- Equipment Vendor Data/PDS,
- Nozzle Schedule
- Nozzle Orientation

Exercise: Print Reading of P& ID's.

Instruments

- Flow
- Pressure
- Temperature
- Level
- Hook-up Drawings

Exercise: Identifying the Instrument Location

Plot Plan, Equipment Layout

- Development
- Equipment Layout Types
- Control Point/Bench Mark
- Layout Terminology

Exercise: Locating the Equipment in the Plant Area

Piping Layout

- PMS
- Pipe Routing
- Piping Study Drawings for Equipments (Pipe Rack, Column, Storage Tank, Heat Exchanger, Pump, Compressor etc)

Exercise: Print Reading of GA. & Create Piping Layouts

Piping Isometrics

- Drawing Isometrics
- Isometric Dimensions
- Isometric Offset
- Piping Spool

Exercise: Print Reading & Create Piping Isometrics

Pipe Supports

- Primary Supports
- Secondary Supports
- Standard Supports
- Special Supports
- Pipe Rack

Exercise: Locating the Supports/Identifying the Supports

Miscellaneous Topics

- Line tracing
- Jacket Piping
- MTO (Material Take Off)
- Corrosion and Material Selection
- Pipe Colour Coding

Course Fee Details:

Course Title	Fee for Indian Participants	Fee for International Participants
Process Piping Design & Arrangement	**INR 25,000/-**	**USD 500/-**

For making e – payment for the course fee please find **IPEBS** Bank account details below.

Account Name	**IPEBS**
Account Number	**03182020005287**
Bank Name	**HDFC**
Branch	**ABIDS**
RTGS / NEFT / IFSC Code	**HDFC0004125**
SWIFT Code	**HDFCINBB**

IPEBS Corporate Training Clients:

Company Name	Location	Company Name	Location
Intergraph Consultants	India	SPPC	Sudan
Port of Sohar	Oman	CFPE Technology Solutions	Malaysia
Uhambiso Consultant	South Africa	Qatar Petroleum Technical Center	Qatar
Newtech Consulting Group	Sudan	Petro Vietnam Marine Shipyard	Vietnam
Yashada Consultant	India	Locus Technologies	India
Telstar Life Science Pvt Ltd	India	RasGas	Qatar
BHEL	India	ICB Technimont	India & Italy
IDC Training House SDN BHD	Malaysia	LG-Digitech	Sudan
Sakhlain Energy	Russia	Infotech Enterprises	India
Aveon Offshore	Nigeria	Petroleum Operating Company	Sudan
BPCL	Bhutan	Dr. Reddy's Labs	India
Saitech Engineers	India	Vasavi Power Services	India
Riyan Architects	Maldives	Siddhi Consulting	India
Oryx GTL	Qatar	Qatar Petroleum	Qatar
WNPOC	Sudan	Centroid Technical Services	Sudan
GNPOC	Sudan	MG – Vowgas Group	Nigeria
Fleming gulf	UAE	DAL Group	Sudan

Terms & conditions:

CANCELLATIONS: IPEBS does not provide refunds for Cancellations done after registration & fee payment. However, credit maybe granted to a later program. This credit will be available for up to one year from the date of issuance.

COURSE MATERIAL AGREEMENT: It is the intention of **IPEBS** that the course text and materials supplied to participants at **IPEBS** courses are prepared and issued for the participants' sole use. Codes and standards constantly change and interpretations are issued by the publishing societies. Information contained in **IPEBS** course materials is based on the best available data obtained by **IPEBS** at the time of publication. **IPEBS** is in no way responsible for subsequent use regardless of intention.

PROGRAM CHANGE POLICY: Please note that instructors and topics were confirmed at the time of publishing this document; however, circumstances beyond the control of the training organizers may necessitate substitutions, alterations or cancellations of the instructors and/or topics. As such, **IPEBS** reserves the right to alter or modify the instructors and/or topics if necessary. Any substitutions or alterations will be updated on our web site.

COURSE CANCELLATION BY IPEBS: IPEBS reserves the right to cancel any course due to circumstances beyond our control. All tuition fees will be refunded in the event of cancellation. **IPEBS** liability is limited to only those tuition fees paid in advance.

FORCE MAJEURE: Except for the obligations to make money payments as outlined hereunder, neither party shall be responsible to the other for delay or failure to perform any of the terms and conditions, or other activities, of this agreement if such delay or failure is caused by strike, war, act of God, or force majeure.

Frequently Asked Questions – FAQ's

Duration of the Course?

Ans: Course Duration is 05 Days.

Daily Class Duration?

Ans: Morning 09:00am to 05:30pm with appropriate Lunch & Tea breaks.

Requirement for the Course?

Ans: Computer / Laptop with good internet connection, Camera and Mic.

Support from IPEBS?

Ans: Faculty assigned to all registered participant of the course. Faculty not only helps to clear the participant's queries while doing the course but also monitors the progress of the participant to help in successful completion of the course.

Mode of Payment?

Ans: You can make the payment through electronic transfer or at **IPEBS** office.

Issue of Certificate?

E - Certificate will be issued by **IPEBS** only on successful completion of the course & will be sent via email to the participant.

Training Methodology?

Ans: Online streaming of lectures, contact with faculty by email or chat groups.

Training Material?

Ans: Printed Material – Course / Class handouts will be provided in printed format and shipped (within India) to the participants.

Soft Copy Material - Data tables, charts, Nomographs, drawings, concept theory, design calculations and practice exercise's will be provided in soft copy.

Demonstration software's and excel spread sheets will be provided.

** International Shipping charges of printed material - course / class handouts to be borne by participants.