

Detailed Engineering of Process Piping Systems



Course Date & Venue: 08<sup>th</sup> May – 12<sup>th</sup> May 2018 – Hyderabad, India.  
26<sup>th</sup> Sep – 30<sup>th</sup> Sep 2018 – Hyderabad, India.



## PROGRAM DESCRIPTION

### Detailed Engineering of Process Piping Systems

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, issues, which is enhanced by the inputs of the instructor's practical experience.

### WHO WILL ATTEND

People related to piping engineering field who work for Design, Analysis and operation of Oil and Gas refineries, Petrochemical plants, Pharmaceutical plants, food plants, Chemical plants or other Process plants or Power plants, can be Piping engineers, Piping design engineers, Piping layout engineers, Piping draftsmen, Piping site engineers, piping supervisors, piping QA/QC engineers, Piping stress engineers, Piping designers, Piping fabricators, Project managers, Piping contractors, Piping material suppliers, Process engineers who are at the entry level or junior level or senior level, who wish to streamline or enhance their existing knowledge and people of other fields who aspire to make a career in piping.

### WHAT YOU WILL LEARN

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

" Gain complete understanding of Piping System Components, ASME Standards, Piping Drawings – General Arrangement & Isometrics"

" Understand the Layout & Routing Considerations for Plant Piping"

" Attend this knowledge – packed workshop & become a Piping Specialist"

## WHY TRAIN WITH US

IPEBS team develops the training programs based on the practical consulting and site construction expertise that has been built up over the years in various specialist areas.

We set out to teach top-quality engineering skills training courses and we have achieved this - we constantly strive to make them as good as it's possible to – but over the years we have also refined our methods, adding several enhancements to the construction stages of course description, design of the courses and assessment.

We believe that these are important to our training participants; it's easy to see what the courses consist of, what value they will gain from attending them and how they can apply their new knowledge and skills in their workplace in a structured, evidence-rich way.

**" POWER YOUR CAREER FORWARD WITH IPEBS SPECIALIZED TRAINING COURSES"**



## WORKSHOP OVERVIEW

### Module 1- Piping Fundamentals

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

### Module 2- Pipe Data

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

Exercise: Interpreting Pipe Data

### Module 3- Pipe Fittings

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

Exercise: Fittings Representation on drawings

### Module 4- 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.

## WORKSHOP OVERVIEW (cont'd)

### Module 5- Valves

#### Valve Parts/Trim/Ratings/Data Sheets

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

Exercise: Valve Type, Material, Pressure Class selection

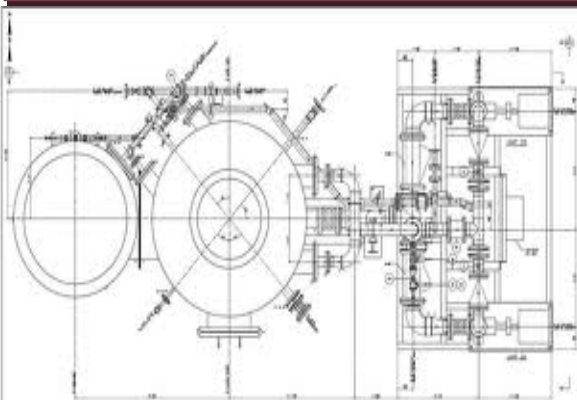
### Module 6- Pipe Materials

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

### Module 7- 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: Dimensions & Pressure Class of Piping Components





## WORKSHOP OVERVIEW (cont'd)

### Module 8- Piping Special Elements

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

### Module 9- Mechanical Equipments

- Static & Rotary equipments
- Static Equipments
  - Horizontal vessels
  - Distillation Columns
  - Heat exchangers
  - Reboilers
  - Reactors
  - Fired Heaters
  - Cooling Towers
- Rotary Equipments
  - Pumps
  - Compressors

### Module 10- Flow Diagrams

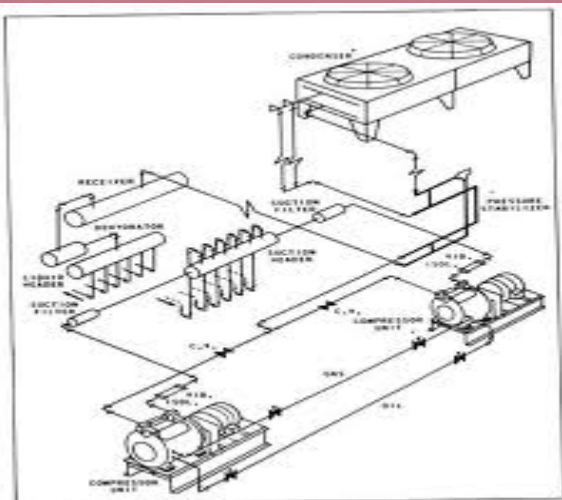
- BFD
- PFD
- PID
- UFD
- Line Numbering on PID
- Equipment Vendor Data/PDS,
- Nozzle Schedule
- Nozzle Orientation

Exercise: Print Reading of P& ID's

### Module 11- Instruments

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

Exercise: Identifying the Instrument Location



## WORKSHOP OVERVIEW (cont'd)

### Module 12- Plot Plan, Equipment Layout

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

Exercise: Locating the Equipment in the Plant Area.

### Module 13- 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

### Module 14- Piping Isometrics

- Drawing Isometrics
- Isometric Dimensions
- Isometric Offset
- Piping Spools

Exercise: Print Reading & Create Piping Isometrics

### Module 15- Pipe Supports

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

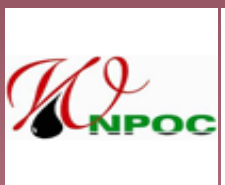
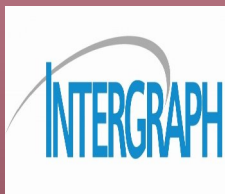
Exercise: Locating the supports / Identifying the Supports

### Module 16- MISCELLANEOUS TOPICS

- Line tracing
- Jacket Piping
- Steam Piping
- Thermal insulation
- MTO (Material Take Off)
- Corrosion and Material Selection
- Pipe color coding.

Summing Up

## SELECTED CLIENTS



## GENERAL INFORMATION:

- Workshop begins at 09:00 AM and ends at 05:30 PM. Participants are expected to be present each day and during all training periods. Participants who do not fulfill the attendance requirement will not be certified. Please remember this when making your travel arrangements.
- Exact venue of the workshop will be notified 2 weeks prior to the course start date.
- Participant fee includes printed course material (containing all slides and presentation handouts), participation certificate, Coffee/Tea/Snacks on arrival, morning & afternoon and buffet luncheon.
- Accommodation can be arranged for the participants at the workshop venue (accommodation is not included in the participants fee).
- The workshop is restricted to registered participants only, Visitors are not permitted.
- Workshop attendance certificate will be issued to all participants.
- Use of mobile phones, Personal Data Assistants (PDA, Blackberry) and pagers is not permitted during workshop training periods. Same applies for use of laptop, tablet, and computer for any purpose (E-mail, games etc.) other than workshop training.
- The recommended attire is business casual.
- Participants are expected to maintain a professional standard of appearance and behavior. Any participant wearing inappropriate attire or behaving in an unprofessional manner will be given a verbal warning. Further incidents may result in the participant being asked to leave the class without refunding their fee.
- Failure to meet or comply with these requirements will result in non-certification.

## ABOUT IPEBS

“ Energizing Engineering – Empowering Engineers”

IPEBS is a premium professional training service provider based in Hyderabad, India.

IPEBS has expertise in providing knowledge packed training courses related to Plant Engineering with specialized training programs in Mechanical, Electrical, Instrumentation & Control, Civil/Structural, Process Engineering & Projects Management.

IPEBS core team comprises of Internationally renowned course speakers and domain specialists.

People behind IPEBS have trained thousands of engineers/draftman from all over the Globe.

IPEBS trainers are Subject Matter Experts with real time Consulting & Construction experience.

## INSTRUCTOR PROFILE

M. A. Shams Tabraz.  
Plant Piping Specialist.

### Summary

Shams Tabraz has over 16 years of experience including plant operations & maintenance, process engineering, Plant piping & pipeline layout, design, analysis & Construction experience.

Tabraz, served in GSWS Kingdom of Saudi Arabia as Plant Piping Engineer responsible for construction, operations & maintenance of Power Piping for a Power Plant having capacity of 1200 MW.

Tabraz also served as a Piping Design Engineer with CADSOFT, Pune, India responsible to develop piping layouts for various oil & gas projects, successively. Tabraz joined as a Lead Piping Design Engineer with Sconce Solutions India Pvt. Ltd, and major responsibilities include pipe support design, flexibility analysis, piping & equipment layouts, developing 3d models, piping & pipeline systems design reviews for the next 4 years.

Tabraz holds a Bachelor's in Mechanical Engineering from JNTU, Hyderabad with an additional Post Graduate in Piping Engineering. Currently Tabraz is a Lead Piping Engineer with IPEBS and is responsible for training, consulting, developing course material etc.

Tabraz has successfully trained more than 1000 piping engineers from different nationalities for piping courses organized by IPEBS.

Mr. Tabraz has offered several corporate training programs for piping design & engineering for major engineering corporate like Petrodar Operating Co. Sudan, Intergraph Consulting India, PetroVietnam Shipyard, Vietnam, Aveon Offshore Nigeria etc. to list a few.



## PARTICIPANT FEES:

Detailed Engineering of Process Piping Systems 5- Day Workshop	Early Registration	*Registration Fee	Group Discounts
	At least 45 Days Prior to start of class	Less than 45 days prior to start of class	
Indian Participant	25200/- INR	28000/- INR	2 or more at 10% off 5 or more at 15% off 8 or more at 20% off
International Participant	1170 US \$	1300 US \$	
Account Name: IPEBS Branch Name : Abids Swift Code: HDFCINBB All bank charges to be borne by payer. Please ensure that IPEBS receives the full invoiced amount.			Account No : 03182020005287 Bank Name : HDFC Group discounts are provided based on the *Registration Fee.
Interested in Onsite training - save over 40% off in total fees, for further information on Onsite training please contact, E-mail : <a href="mailto:corptrain@ipebs.in">corptrain@ipebs.in</a> Phone- +91-40- 30623249 Mobile- +91- 9885946711			

## Terms & conditions:

**CANCELLATIONS & SUBSTITUTIONS:** Cancellations done 2 weeks prior to the course start date a full refund will be promptly made after a written cancellation is received. Cancellations done 1 week prior to the course start date a minimum charge of 50% of the total fee will be charged. No cancellations are accepted 6 Days before the course start date. However, credit maybe granted to a later workshop or you could send a substitute participant. After registration you may substitute a participant anytime.

**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 workshop 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 WORKSHOP/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.

## REGISTRATION

Please print or type clearly & use separate form for each Participant.

**Please visit [www.ipebs.in](http://www.ipebs.in) for details on courses we offer and more updated information. You can also Register online.**

**For applications by E-mail, please fill the form below and send to [register@ipebs.in](mailto:register@ipebs.in)**

Course Title: Detailed Engineering of Process Piping Systems

COURSE DATE: \_\_\_\_\_ COURSE LOCATION: \_\_\_\_\_

NAME: \_\_\_\_\_

QUALIFICATION: \_\_\_\_\_ WORK EXPERIENCE (if any): \_\_\_\_\_

JOB TITLE: \_\_\_\_\_ COMPANY: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ POSTAL CODE: \_\_\_\_\_ COUNTRY: \_\_\_\_\_

PHONE: \_\_\_\_\_ FAX: \_\_\_\_\_ EMAIL: \_\_\_\_\_

In case of Emergency, contact

NAME: \_\_\_\_\_ PHONE: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

EMAIL: \_\_\_\_\_

NOTE: Registrations are not confirmed until full payment is received, course confirmation will be sent via Email.

I, acknowledge to the terms & conditions of the organizer.

Date: \_\_\_\_\_

Signature: \_\_\_\_\_

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