PETROSYNC
Synchronize Your Skill and Knowledge

PetroSync Global Pte Ltd | PetroSync | PetroSync

ASME B31.3
Process Piping Code Design Requirements

Improve Your Piping Knowledge and Skill by Learning Practical Things From The Expert !

09th - 13th February 2026 at Kuala Lumpur, Malaysia | 16th - 20th November 2026 at Bandung, Indonesia
23rd - 27th November 2026 at Kuala Lumpur, Malaysia

A lot of Practical Things, Case Studies and Exercises !

Petrosync Distinguished Instructor
Mandar Mulay

- 20 years hands on experience in design and integrity assessment of Piping Systems, Reactors & Storage Tanks, and Pressure Vessels, Power Boilers, Heat Exchanger.
- Well conversant with the major industry codes & standards such as ASME PCC-2, ASME Sec. I, ASME B 31.1, B31.3 , B31.4 and B31.8, ASME Sec VIII, BS-5500, TEMA, API -650, IS 803, API 579 etc.
- He has conducted Training Courses (ASME Sec. I, ASME B 31.3 Piping Codes, ASME Sec. VIII, API 579, ASME PCC-2 Repair practices, and Heat Exchanger Design Operations & Maintenance) in Saudi Arabia, Qatar, Bahrain and UAE for engineers from companies like Saudi Aramco, SABIC group of Companies, Qatar Petroleum, ADNOC, BAPCO, Gulf Petrochemicals

Course Objectives

- Familiarize participants with the organization and intent of the B 31.3 code
- Know how to read the code, and interpret its stated and implied requirements
- What issues to take into consideration when designing process piping
- Pressure design of piping and piping components
- How to analyze piping flexibility and gauge the limitations of piping and piping components
- Provide participants step-by step approach to piping design, including the design optimization techniques.
- Introduce participants with various material selection, fabrication, erection and testing of piping systems.
- Be able to understand the mandatory requirements, specific prohibitions and optional stipulations given in the code and other service restrictions on piping systems.
- How to conduct and certify the pressure testing.
- Understand principles of piping integrity assessments as per API 570 and to make run-repair-replace decisions.
- Know how to calculate Remaining life, and MAWP of piping system

Specially Designed for

Ideally suited for Piping engineers and designers, Plant engineers who need an understanding of the requirements for compliance to the Code for piping design and analysis, and testing. Managers, Engineers, Supervisors, and Plant operation personnel who work in the Refineries, Petrochemical plants, and other process industries will find this course immensely useful.

Each attendee must bring a Laptop computer with Microsoft operating system and Scientific Calculator

Supported by

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Course Overview

This intensive five-day course is designed to give the participants a thorough understanding of Process Piping Code, ASME B 31.3. and its practical use for all aspects right from Piping Design to testing and certification. It offers detailed insight of code requirements pertaining to design of Piping components, branch connections, selection of flanges, fittings, flexibility considerations, materials requirements, fabrication, welding, NDT examination and Pressure testing. The course will cover the Piping systems typically used in Petroleum Industries, Refineries, Petrochemical plants etc. The course emphasizes understanding of 'stated' and 'implied' requirements (i.e. content and intent) of the code

Important code requirements will be explained in a simple, straight forward manner, including the short-cut methods in designing of Pipes, Pipe fitting and Flanges. The participants would be explained in detail the mechanics of adopting and applying the code rules for day-to-day use in their professional work.. Lessons are enhanced by actual in-class problem solving, directly applying the rules and equations of the B31.3 Code for various design and operating conditions. This training course is the complete answer to the demands of piping engineers to know the ASME B31.3 Pressure Piping Code and Upon completion of the training course the participant shall be a complete ASME Code Professional.

The course further provides concepts and methods for assuring the mechanical integrity of existing piping systems. It presents a overview of how the methodology of API 570 can be applied for assessing the present structural integrity of the piping system, and deciding its fitness for continued service as well as the projected remaining life.

Petrosync Quality

Limited Attendees
The course has limited seats to ensure maximum learning and experience for all delegates.

Certificate of Attendance
You will receive a Certificate of Attendance bearing the signatures of the Trainer upon successful completion of the course. This certificate is proof of your continuing professional development.

Interactive Training
You will be attending training designed to share both the latest knowledge and practical experience through interactive sessions. This will provide you with a deeper and more long-term understanding of your current issues.

High Quality Course Materials
Printed course manual will provide you with working materials throughout the course and will be an invaluable source of reference for you and your colleagues afterward. You can follow course progress on your laptop with soft copies provided.

WHY YOU SHOULD ATTEND PETROSYNC'S EVENTS

- To ensure that all objectives of the course matches yours, all PetroSync programs are developed after intensive and extensive research within the industry
- PetroSync programs focus on your immediate working issues to ensure that you are able to apply and deliver immediate results in real work situations
- Application and implementation of industry knowledge and experience are the drivers for our course design, not theoretical academic lectures
- PetroSync training focuses on practical interactive learning tools and techniques including case studies, group discussions, scenarios, simulations, practical exercises and knowledge assessments during the course. Invest a small amount of your time to prepare before attending the course to ensure maximum learning
- PetroSync follows a rigorous selection process to ensure that all expert trainers have first-hand, up-to-date and practical knowledge and are leaders of their respective industrial discipline

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Course Agenda

Day 1

- Objectives and intent of ASME B 31.3 Code
- ASME B 31.3 Scope and applicability
- Understanding of the Codes, what means SHALL, SHOULD & MAY in Code
- Code contents, Stated & implied stipulations in the Code
- What are design conditions, design pressure & design temperature
- What are various fluid services generally encountered
- Definitions of Category D, M, U, Normal and High Pressure Services
- Concept of Weld Strength reduction factor
- Weld Quality factor
- Allowable stresses and the basis for its calculations
- Design of piping components for internal pressure

Day 2

- Design of piping components for External pressures.
- Design of branch connections –reinforcements
- Selection of Flanges
- Design of pipe fittings such as elbows, tees and blanks
- Service considerations in Design
- Flexibility considerations
- Case studies in flexibility calculations
- Methods to incorporate flexibility in Piping systems
- U - loops, Expansion Joints

Day 3

- Extensive case studies on Piping Design
- Piping Span Calculations
- Selection of Supports and Hangers
- Material Identification, Certification and Traceability
- Code accepted Materials and material testing
- Listed, unlisted materials
- General requirements to be checked before selection of Material
- Limitations imposed by code on materials
- Impact testing requirements
- Acceptance Criteria as per ASME B 31.3

Day 4

- Design interface with Fabrication, Assembly and Erection
- Code requirement for preheating and PWHT
- Design interface with Inspection, Examination and Testing
  How to Conduct and certify pressure testing.
- Hydrostatic testing of piping system
- Pneumatic testing of piping system
- Service leak test
- NDT in lieu of leak test
- Case studies

Day 5

- Additional Code requirements for special fluids services
- Specific Design Requirements for Toxic Fluid (M Category) services
- Design Requirements for High Pressure Fluid services
- Design Requirements for High Purity (U category) Fluid services
- Design Requirements for High Pressure (Category K) Fluid services
- Overview of flanges as per ASME B 16.5
- Piping integrity assessments as per API 570
- Making run-repair-replace decisions.
- Calculation of Remaining life and MAWP of piping system
- Real-world examples and case studies

PROGRAM SCHEDULE

08:00	Registration (Day1)
08:10 – 10:00	Session I
10:00 – 10:15	1st Tea Break
10:15 – 12:30	Session II
12:30 – 13:30	Lunch Break
13:30 – 15:00	Session III
15:00 – 15:15	2nd Tea Break
15:15 – 16:00	Session IV
16:00	End of Day

*Schedule may vary for each training

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Petrosync Distinguished Instructor

Mandar Mulay

Mandar Mulay has about 20 years hands on experience in design and integrity assessment of Piping Systems, Reactor & Storage Tanks, and Pressure Vessels, Power Boiler, and Heat Exchanger. He is well conversant with the major industry codes & standards such as ASME Sec. I, ASME B 31.1, B31.3 , B31.4 and B31.8, ASME Sec VIII, ASME PCC-2, BS-5500, TEMA, API -650, IS 803, API 579 etc.

Major projects closely associated with, in his professional career so far are, Qatar Chemicals, Shell, Castrol India, Reliance Industries, Cargill Foods USA, etc.

His proficiency in Piping Systems, Reactor & Storage Tanks, and Pressure Vessel Codes, Power Boiler, and Heat Exchanger enables him to trace the similarities and differences of these codes. He also actively involved as Instructor for programs on the subjects of API/ASME/TEMA codes, Integrity Assessment, Fitness for Service, etc.

Along with his career in Engineering and Design Department in a multinational company at a very senior post for the last 20 years, he is also visiting faculty to a well known Engineering College in India for their P.G. Courses in Piping Design and Engineering.

Apart from being visiting faculty, He has also conducted several Training Courses (ASME Sec. I, ASME Sec. VIII, ASME B 31.3 Piping Codes , API 579 FFS code, ASME PCC-2 Repair practices, and Heat Exchanger Design Operations & Maintenance) in Saudi Arabia, Qatar, Bahrain and UAE for engineers from companies like Saudi Aramco , SABIC group of Companies, Qatar Petroleum, ADNOC, BAPCO, DEWA, Gulf Petrochemicals etc. He has already conducted many times the training courses in API 579, where the participants rated him “Excellent” for these courses.

HYBRID TRAINING SOLUTIONS

FOCUS TRAINING • REDUCE COST • ENHANCED RESULTS

Over the years, there has been a growing demand for hybrid training programs. It is an excellant option to maximize your training dollar for your specific training needs. We make it possible to run a training program that is customized totally to your training needs at a fraction of an in-house budget!

If you like to know more about this excellent program, please contact us on +65 3159 0800 or email general@petrosync.com

IN-HOUSE SOLUTIONS

SAVE COST • IMPROVE PERFORMANCE • REDUCE RISK

PetroSync understands that in current economic climate, getting an excellent return on your training investment is critical for all our clients. This excellent training can be conducted exclusively for your organization. The training can be tailored to meet your specific needs at your preferred location and time. We will meet you anywhere around the globe.

If you like to know more about this excellent program, please contact us on +65 3159 0800 or email general@petrosync.com

INVESTMENT PACKAGES

Please checklist the package that you are attending!

	ASME B31.3 – Process Piping Code Design Requirements SCHEDULES	LOCATION	PRICE
☐	09th – 13th February 2026	Kuala Lumpur, Malaysia	USD 3,450
☐	16th – 20th November 2026	Bandung, Indonesia	USD 3,450
☐	23rd – 27th November 2026	Kuala Lumpur, Malaysia	USD 3,450

** All prices are subject to change without notice and are not guaranteed, except that prices for an order that have been accepted by PetroSync is not subject to change after acceptance.*

** Price is nett excluding Withholding Tax if any and will be quoted separately. Please send us the withholding tax payment receipt.*

DELEGATE DETAILS

1st Delegate Name _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐ Others ☐

Direct Line Number: _____ Email: _____

Mobile Number: _____ Job Title: _____

Department: _____ Head of Department: _____

2nd Delegate Name _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐ Others ☐

Direct Line Number: _____ Email: _____

Mobile Number: _____ Job Title: _____

Department: _____ Head of Department: _____

3rd Delegate Name _____ Mr ☐ Mrs ☐ Ms ☐ Dr ☐ Others ☐

Direct Line Number: _____ Email: _____

Mobile Number: _____ Job Title: _____

Department: _____ Head of Department: _____

**Please fill all the details including mobile number. This help us to contact participant if they are late in class or if there is any urgent update (through whatsapp/call)*

INVOICE DETAILS

Attention Invoice to: _____

Direct Line Number: _____ Fax: _____

Company: _____ Industry : _____

Address: _____ Postcode: _____

Country: _____ Email: _____

Please note:
- Indicate if you have already registered by Phone ☐ Fax ☐ Email ☐ Web ☐
- If you have not received an acknowledgement before the training, please call us to confirm your booking.

PAYMENT METHODS

☐ **By Credit Card**

☐ **By Direct Transfer : Please quote invoice number(s) on remittance advice**

PetroSync Global Pte Ltd Bank details:
Account Name : PetroSync Global Pte Ltd
Bank Name : DBS Bank Ltd
Bank Code : 7171 • Bank Swift Code : DBSSSGSGXXX • Branch code : 288
Account No : 0288-002682-01-6-022 (USD)
Bank Address : 12 Marina Boulevard, Level 3. Marina Bay Financial Centre Tower 3. Singapore 018982

All bank charges to be borne by payer. Please ensure that PetroSync Global Pte Ltd receives the full invoiced amount.

PROGRAMME CONSULTANT

Name : Cay Aagen
Email : registration@petrosync.com
Phone : +65 3159 0800

TERMS AND CONDITIONS

DISCLAIMER

Please note that trainers and topics were confirmed at the time of publishing; however, PetroSync may necessitate substitutions, alterations or cancellations of the trainers or topics or location (classroom / Virtual). As such, PetroSync reserves the right to change or cancel any part of its published programme due to unforeseen circumstances. Any substitutions or alterations will be updated on our web page as soon as possible.

DATA PROTECTION

The information you provide will be safeguarded by PetroSync that may be used to keep you informed of relevant products and services. As an international group we may transfer your data on a global basis for the purpose indicated above. If you do not want us to share your information with other reputable companies, please tick this box ☐

CANCELLATION POLICY

Delegates who cancel after the training is officially confirmed run by email, are liable to pay the full course fee and no refunds will be granted. You may substitute delegates at any time as long as reasonable advance notice is given to Petrosync.

In the event that PetroSync cancels or postpones an In the event that PetroSync cancels or postpones or change the trainer or change the training location (classroom / virtual) of an event for any reason and that the delegate is unable or unwilling to attend in on the rescheduled date, you will receive a credit voucher for 100% of the contract fee paid. You may use this credit voucher for another PetroSync to be mutually agreed with PetroSync, which must occur within a year from the date of postponement.

PetroSync is not responsible for any loss or damage as a result of the cancellation policy. PetroSync will assume no liability whatsoever in the event this event is cancelled, rescheduled or postponed due to any Act of God, fire, act of government or state, war, civil commotion, insurrection, embargo, industrial action, or any other reason beyond management control.

CERTIFICATE OF ATTENDANCE

80% attendance is required for PetroSync's Certificate of Attendance.

DETAILS

Please accept our apologies for mail or email that is incorrectly addressed.
Please email us at registration@petrosync.com and inform us of any incorrect details. We will amend them accordingly.

Find us on Social Media:

PetroSync Global Pte Ltd
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CHARGES & FEE(s)

- For Payment by Direct TelegraphicTransfer, client has to bear both local and oversea bank charges.

- For credit card payment, there is additional 4% credit card processsing fee.

COURSE CONFIRMATION

I agree to PetroSync's payment terms and cancellation policy.

Signature : _____

Date : _____

PAYMENT TERMS : Payment is due in full at the time of registration. Full payment is mandatory for event attendance.