

# ASME VII Division 1 & 2 Pressure Vessel Series

Discover the latest updates on ASME codes and practical session from the ASME guru

**13<sup>th</sup> - 17<sup>th</sup> April 2026 at Bandung, Indonesia | 18<sup>th</sup> - 22<sup>nd</sup> May 2026 at Kuala Lumpur, Malaysia**  
**10<sup>th</sup> - 14<sup>th</sup> August 2026 at Bandung, Indonesia | 14<sup>th</sup> - 18<sup>th</sup> December 2026 at Kuala Lumpur, Malaysia**



## Petrosync Distinguished Instructor Mandar Mulay

- ▶ 20 years hands on experience in design and integrity assessment of Piping Systems, Reactors & Storage Tanks, and Pressure Vessels Codes, 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

Case Studies,  
Discussion, and many  
Practical exercises!

## 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 excellent 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](mailto:general@petrosync.com)

## ASME VIII DIVISION 1 & 2 - PRESSURE VESSEL SERIES

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### Masterclass Overview

This Five-day program offers detailed insight and thorough understanding of the most common ASME codes, pertaining to design/ engineering and testing of the pressure vessels namely Section VIII Div. 1 and Section VIII Div. 2. This course emphasizes understanding of 'stated' and 'implied' requirements (i.e. content and intent) of the codes. The participants would be explained in detail the mechanics of adopting and applying the code rules and design formulas for different Design conditions and Services.

ASME VIII Div. 1 is the most commonly adopted code which is simple and used friendly, where as, ASME VIII Div 2 is an alternative code which provides a better engineered vessel with detailed stresses calculations and more rigorous testing, and allows for savings in material costs (thinner parts may be used).

This course is designed to give the participants the confidence and practice for carrying out design and Fabrication and testing for new vessels and also carrying out strength calculations and assessment of integrity of existing vessels.

How to adopt code rules for different types of vessels and with various service conditions will be illustrated with numerous case studies

Important code stipulation will be reviewed and discussed collectively with participants so as to address the difficulties and ambiguities they might have encountered during their working.

### Masterclass Objectives

- ▶ Familiarize participants with the concepts and technical terms of the codes
- ▶ Know the basic concepts of the codes and their design fundamentals
- ▶ Understand salient features and differences between Div 1 and Div 2
- ▶ Know the design of Shell, Heads, and other pressure parts
- ▶ Learn design of nozzles and nozzle reinforcements
- ▶ Design for external pressure and Jacketed vessels
- ▶ Design requirements for low temperature operation
- ▶ Discover the fabrication requirements, assembly and welding requirements.
- ▶ NDT and Inspection procedures
- ▶ How to carry out pressure testing, certification and stamping of Pressure Vessels.
- ▶ Introduction to Integrity assessment of in-service vessels.

### Specially Designed for

The course is designed for, but not limited to, mechanical, maintenance, and inspection / QAQC professionals who are involved in pressure vessel equipment.

- |                                    |                                    |
|------------------------------------|------------------------------------|
| ▶ Design Engineers / Managers      | ▶ QAQC Engineers / Managers        |
| ▶ Mechanical Engineers / Managers  | ▶ Inspection Engineers / Managers  |
| ▶ Maintenance Engineers / Managers | ▶ Reliability Engineers / Managers |

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

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## Course Agenda

### Day 1

- Introduction to ASME codes
- Structure of ASME Sec. VIII Div. 1
- ASME Code system : Code revisions, Editions and addenda
- Pressure vessels included in ASME Codes
- Pressure vessels excluding from ASME codes
- Design principles adopted in ASME codes,
- Design rules, How these were derived and arrived at
- Concept of working pressure, design pressure, MAWP
- Allowable stress in ASME design
- Weld joint categories
- Weld joint types
- Concept of weld joint efficiency
- Design of cylindrical and spherical shells under internal pressure
- Static head calculations
- MAWP calculations
- Types of dished heads.
- Selection of dished heads based on pressure / Diameter
- Design of Ellipsoidal heads.
- Design of Torispherical heads
- Design of Hemispherical heads
- Design of conical heads
- **Case Studies and examples**

### Day 2

- Nozzles and openings, reinforcement of openings
- Adequacy of weld joints for shells and nozzles
- Methods of design optimization, economical compliance.
- Quality Assurance System as per ASME codes
- Materials for pressure parts
- Materials for non-pressure parts
- Requirement of low temperature service
- Deciding impact test requirement
- Impact test exemptions
- Impact test acceptance criteria
- Fabrication requirements
- Forming and ovality
- Weld fit-ups and mis-alignments
- Weld reinforcements
- Weld – metal build-up
- Weld joints in shells
- Weld joints for nozzle attachments

### Day 3

- Deciding PWHT requirement
- PWHT methods
- PWHT temperature, time
- Heating / cooling rates
- Deciding nozzle orientations
- Requirements of man-ways and inspection openings
- NDT of pressure vessels
- Selection of NDT methods
- Code requirement for radiography
- Acceptance criteria for elongated and rounded indications
- PT and MT requirements
- Acceptance criteria for PT and MT
- Hydrostatic and Pneumatic Tests
- Requirements for Pressure Gauges for pressure test
- Calculating test pressures, Inspection pressures, pressurization stages and safety relief valve settings
- Test temperatures, Temperature Corrections
- Vessel stamping and Name plate
- Introduction to Integrity assessment of in-service vessels

## PROGRAM SCHEDULE

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

*\*Schedule may vary for each training*

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### Course Agenda

#### Day 4

- Introduction to ASME Sec. VIII Div.2
- Salient features of ASME Sec. VIII Div.2
- Basic differences between ASME VIII Div. 1 and ASME VIII Div. 2.
- Allowable Stress Basis and Safety factors for design
- User's design specification (UDS)
- Materials Permitted For Construction of Vessel Parts
- Supplemental Requirements for Carbon and Alloy Steels
- Material Test Requirements
- Deciding impact test requirement
- Stress ratio calculations
- Impact test exemptions
- Impact test acceptance criteria
- "Design by Rule" requirements
- Minimum Thickness Requirements
- Weld Category
- Weld Joint Type
- Types of Joints Permitted
- Design Rules for Shells Under Pressure
- Shell Tolerances
- Cylindrical Shells
- Conical Shells
- Spherical Shells and Hemispherical Heads
- Torispherical Heads
- Ellipsoidal Heads

#### Day 5

- Fabrication Requirements
- Fitting and Alignment
- Preheating and Heat Treatment of Weldments
- PWHT methods
- PWHT temperature, time
- Heating / cooling rates
- Examination groups for pressure vessels
- Radiography and UT requirement-Volume NDT
- PT and MT requirements-Surface NDT
- Acceptance criteria for NDT
- Pressure Testing Requirements
- Hydrostatic and Pneumatic Tests
- Requirements for Pressure Gauges for pressure test
- Calculating test pressures, Inspection pressures, pressurization stages.
- Test temperatures, Temperature Corrections
- Vessel stamping and Name plate
- **Case studies on Div 1 and Div 2**
- Doubts and discussions

### ▶ 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.

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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 Sec VIII, ASME B 31.1, B31.3, B31.4 and B31.8, 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, Reactors & 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.

### 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](mailto:general@petrosync.com)

## INVESTMENT PACKAGES

Please checklist the package that you are attending!

	ASME Section VIII Division 1 & 2 - Pressure Vessel Series SCHEDULES	LOCATION	PRICE
<input type="checkbox"/>	13 <sup>th</sup> - 17 <sup>th</sup> April 2026	Bandung, Indonesia	USD 3,350
<input type="checkbox"/>	18 <sup>th</sup> - 22 <sup>nd</sup> May 2026	Kuala Lumpur, Malaysia	USD 3,350
<input type="checkbox"/>	10 <sup>th</sup> - 14 <sup>th</sup> August 2026	Bandung, Indonesia	USD 3,350
<input type="checkbox"/>	14 <sup>th</sup> - 18 <sup>th</sup> December 2026	Kuala Lumpur, Malaysia	USD 3,350

\*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 : DBSSSGSX • Branch code : 288

Account No : 0288-002682-01-6 (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.

### 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.

## PROGRAMME CONSULTANT

Contact : 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 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:

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## CHARGES & FEE(S)

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

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