

# API 570 Certification Preparation



## INTRODUCTION

This course gives a broad knowledge about “In-Service Piping Systems” and prepares students for the API 570 exam. The course is an intensive one-week course with a special emphasis on the use of the related codes and calculations.

This course content includes:

- ◆ Using B31.3
- ◆ Piping Calculations
- ◆ Section IX Welding
- ◆ API 570
- ◆ B16.5 & other
- ◆ Exam

## SPEAKER'S BACKGROUND

Mark Smith has worked in the petrochemical industry for 25 years and in the pressure equipment discipline for 16 years. He has been instructing inspection classes since 1992. Certifications obtained include: API 510/570/653.

Currently about 150 students per year attend one of his API courses. He is committed to helping each student achieve success.

## OBJECTIVES

The course provides participants with the knowledge necessary to:

- ◆ Successfully pass the API 570 piping inspector certification exam
- ◆ Effectively use major codes: ASME B16.5 & B31.3; ASME B&PV Sections V & IX
- ◆ Perform all basic piping calculations needed for the API exam (e.g. t<sub>min</sub>, test pressure, MAWP, MDMT, corrosion rates, remaining life, etc.)
- ◆ Use API's requirements during inspection, repairs, and alterations of piping
- ◆ Review welding procedures (WPS/PQR) and welder performance qualifications (WPQ)

## BRING TO CLASS

Students should bring to class: a calculator, a straight edge (or triangle), pencils, highlighters, lots of questions, and a “CAN-DO” attitude. **Also, participants must bring the appropriate codes required for the API exam.**

## ABOUT MSTs

MSTs is a company specializing in providing the needed practical training for petrochemical pressure equipment inspectors and engineers.

Currently, MSTs provides eleven courses specifically designed to help pressure equipment personnel improve their technical knowledge and skills.

MSTs instructors are selected for their technical and “wake-ability” skills. (“Wake-ability” – the ability to minimize snores during long, boring technical training.)

## API TRAINING

MSTs most popular courses are the API certification classes. MSTs offer classes prior to each API exam.

These classes and exams are not easy, so only individuals who are serious about their pressure equipment career should participate.

**MSTs students generally have a 90% passing rate.**

## WHO SHOULD JOIN

This class is designed for pressure equipment inspectors and engineers working in refineries, chemical & industrial plants, gas plants, pipeline terminals, and oil fields.

## CLASS PARTICIPANTS

Students who wish to apply for the API Exam should have at least 3 years of experience at a petro-, chemical- or industrial facility and have at least 1 year of inspection experience.

However, participants who do not meet this requirement are also welcomed to attend this Training to further their knowledge in the related areas.

## NOTES

This is an intense course with daily homework and a final exam (similar to the API 570 exam). A study guide is issued to direct participant's pre-class study. “Download pre-class Study Guide from [www.msts-training.com](http://www.msts-training.com)”

## CLASS SIZE

Enrollment is limited to 24 students.

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## FEEDBACK FROM PAST PARTICIPANTS

My API training with MSTs made me confident to know now that I am doing my job the right way. Mark not only explains the standards but also shares his own experiences as he teaches the class. My training also allowed me to meet and interact with my own peers and thus now have my own network worldwide. I would only complete my API trainings and reviews with MSTs.

*Malou M. Baluyut  
Senior Engineer  
Shell Guam, Inc.*



Have attended 2 API classes taught by Mark Smith. As advertised, Mark is one instructor from MSTs that has a very good technical and "wake ability" skills. He blends his unique humor well in the class and is successful in keeping everyone from snoring away in a week-long boring and yet intensive session.

I like Mark's training slides, they contain summaries of easy to understand and digestible notes which is important for the exam. Mark is very well verse with codes and standards. Backed by his past working experience and hands-on in the field, he is able to impart the requirement knowledge to all the course participants. There are lots of examples and stories relevant to the topics given which allow knowledge level individual to understand easily.

My success in API examination attributed much to the quality of his teaching and dedication in ensuring we are prepared in the exam hall.

*Lim Chon  
Senior Inspector  
Shell Refining Company  
Port Dickson, Malaysia*

I have attended numerous classes taught by Mark Smith (MSTs). I have always found the classes to be very interesting and extremely informative. Mark has a gift when come to teaching that makes everyone feel comfortable with the material and he can teach at any level.

In many classes I have attended, he has had a wide variety of skill levels and knowledge in his students and he has the ability to make sure that everyone can follow along and he keeps everyone participating in the class material. He can sense when a student may be falling behind or not fully understanding the material and makes it a point to bring them back up to speed.

I would highly recommend to anyone interested in succeeding in the inspection field to put their faith in Mark Smith. I personally attribute much of my success in this industry to Mark and his ability to teach!

*James Moore  
Senior Inspector  
Motiva Enterprises  
Convent, Louisiana*

I have sent my employees to other training classes and have had little positive feed back from the employees. This was reflected on their test scores. I then sent three other employees and I myself attended a MSTs class and was very pleased with the manner in which the subject matter was presented. All of my employees left with a real understanding of the subject matter, and confidence that they would pass their API exams!

*Robert G. Maddox  
Vice President of Operations  
Materials Technology Group L.L.C*

As I go along with MSTs, I found that it is really a worth investment for your future career. The more you listen to Mr Mark Smith, the more eager you want to be certified for API Certification. He is really a good teacher with a very wide knowledge and experience and for me, I can say **he's the No. 1 Lecturer** so far. I really appreciate IDC for its good service and support that has been given to me.

*CM Yahya  
Plant Inspector  
Ethylene Malaysia Sdn Bhd*

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## DAY 1

- 1) Welcome & Introduction
- 2) ASME B16.5 – Flange Code  
Learn how to determine:
  - ◆ Maximum Flange Pressure
  - ◆ Maximum Flange Temperature
  - ◆ Appropriate Flange Class
  - ◆ Maximum Hydrotest Pressure
  - ◆ Flange Dimensions
  - ◆ Maximum allowed Flaw Size on Flange Face
- 3) API 570 Sections 1-4, 6
  - ◆ Purpose of API 570
  - ◆ Scope of API 570
  - ◆ Responsibilities defined in API 570
  - ◆ Inspection Types & Intervals
  - ◆ Tips on how to memorize information in API Codes

Evening Session: ASME B16.5 & API 570 Homework  
Practice all Calculations covered in Class.

## DAY 3

- 1) ASME B31.3 - Piping Code  
Includes understanding:
  - ◆ Basic concepts of Piping Flexibility
  - ◆ Selection of Piping Materials
  - ◆ Fabrication Requirements
- 2) ASME B31.3 – Calculations & Charts  
Learn how to determine:
  - ◆ Thermal Pipe Growth
  - ◆ Minimum Design Temperatures
  - ◆ Welding Preheat Requirements
  - ◆ PWHT Requirements
- 3) API 570 – Section 8-9
  - ◆ Repairs, Alterations & Rerating
  - ◆ Underground Piping

Evening Session: ASME B31.3 & API 570 Homework  
Practice all Calculations covered in Class. Also, complete the Corrosion Rate/Remaining Life Self-Study Module

## DAY 5

- 1) ASME B&PV Section IX - Welding Code  
Understand the following key concepts
  - ◆ Weld Procedure Qualification Process and Restrictions
- 2) WPS/PQR Review (Weld Procedure)
  - ◆ Evaluate a WPS with the associated PQR

## DAY 2

- 1) ASME B31.3 - Piping Code  
Includes understanding:
  - ◆ Purpose & Scope of the Code
  - ◆ Organization of the Code
  - ◆ Piping Classes specified by the Code
  - ◆ Roles specified by the Code
  - ◆ Tips on how to find information in the Code
- 2) ASME B31.3 – Calculations & Charts  
Learn how to determine:
  - ◆ Quality Factor – “E”
  - ◆ Allowable Stress – “S”
  - ◆ Minimum Thickness for a Pipe
  - ◆ Appropriate Pipe Schedule for new Pipe
  - ◆ Minimum Thickness for a Blank (Blind)
- 3) API 570 – Section 7
  - ◆ Inspection Data Evaluation
  - ◆ Calculate MAWP of a Piping System

Evening Session: ASME B31.3 & API 570 Homework  
Practice all Calculations covered in Class.

## DAY 4

- 1) ASME B&PV Section IX - Welding Code  
Understand the following key concepts.
  - ◆ Purpose of the Code
  - ◆ Roles of the Welding Inspector
  - ◆ Organization of the Code
  - ◆ Welding Positions – Test and Field
  - ◆ Testing Requirements and Acceptance Criteria
  - ◆ Welder Qualification Process and Restrictions
  - ◆ Tips on how to find information in the Code
- 2) ASME B&PV Section IX Review and Evaluate a WPQ (Welder Qualification). Understand
  - ◆ Essential Variables for welder qualification
  - ◆ Testing required for welder qualification

Evening Session: Section IX Homework. Evaluate two WPQ's.

- 3) API 570 – Section 8 & 9
  - ◆ Repairs, Alterations & Rerating
  - ◆ Underground Piping
- 4) API 577 – Welding Inspection & Metallurgy

Evening Session: Section IX Homework. Evaluate one WPQ. API 570 Homework. Also, complete the API 578 Self-Study Module

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## DAY 6

- 1) **ASME B&PV Section V – NDE**  
Understand the following key concepts.
    - ◆ Purpose of the Code
    - ◆ Organization of the Code
    - ◆ RT Techniques
    - ◆ Purpose & Selection of IQI's
    - ◆ RT Film Density Requirements
    - ◆ Key terms discussed in the Code
    - ◆ Tips on how to find information in the Code
  - 2) **API 570 Section 5**
    - ◆ Inspection & Testing Practices
  - 3) **API 571 - Damage Mechanisms in the Refinery Industry**
- Evening Session: ASME Section V & API 570 Homework.**  
Plus the "Mega-Problem". This exercise includes most of the calculations & tables covered in the class.

## DAY 7

- 1) Course Review
- 2) Practice Exam – Exam is similar to the API 570 exam

## DAILY SCHEDULE

**8:30a.m. – 5:30p.m. (Workshop)**  
**7:00p.m. – 9:00p.m. (Evening sessions)**

**Registration on Day 1 at 8.00am**

## API APPLICATION INFO

The API Web-site at [www.api.org/icp](http://www.api.org/icp) offers some useful information (i.e. [Exam Application Form](#), sample test question and required code books).

## HOTEL ACCOMODATION INFORMATION

Statu s	Hotel	Single	Double	Walking Distances from Hotel to IDC / Amcorp Mall
2 stars	<b>SinggahSana Hotel</b> <a href="http://www.hspj.com.my">www.hspj.com.my</a> Tel:(603)-7956 2100 Fax:(603)-7954 2041	RM 125.00 Approximately USD35 with breakfast		About 15 mins walking distance (just across the road).
2 stars	<b>Shah Village Hotel</b> <a href="http://www.shahsresorts.com">www.shahsresorts.com</a> Tel:(603)-7956 9322 Fax:(603)-7955 7715	RM 138.00 Approximately USD 40 with breakfast	RM 195.50 Approximately USD 56 with breakfast	About 10 mins walking distance (just across the road).
4 stars	<b>Armada PJ Hotel</b> <a href="http://www.armada.com.my">www.armada.com.my</a> Tel :(603)-7954 6888 Fax:(603)-7956 8088	RM 253.00 Approximately USD 77 With breakfast	-	Has to go by train, only 1 station away *near Aeroline station in PJ
4 stars	<b>Crystal Crown Hotel</b> <a href="http://www.crystalcrown.com.my">www.crystalcrown.com.my</a> Tel :(603)-7958 4422 Fax:(603)-7958 8408	RM 184.00 Approximately USD 53 With breakfast	RM 207.00 Approximately USD 60 With breakfast	About 15 mins walking dis- tance. By taxi, about 8 mins.
5 stars	<b>Hilton PJ Hotel</b> <a href="http://www.hilton.com">www.hilton.com</a> Tel :(603)-7955 9122 Fax:(603)-7955 3909	RM 350.75 Approximately USD 100 with breakfast	RM 402.50 Approximately USD 115 with breakfast	About 15 mins walking dis- tance. By taxi, about 8 mins.

\* Room rate is subject to change if the needs arise from the hotel.

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