



MU035K: Advanced Mechanical Codes, Standards & Specifications

Training Description:

This intensive training course is designed to give a detailed insight to the participants for understanding of Codes and Standards with emphasis on the right approach and methodology for using the codes. It helps the participants to understand the Code objectives, Code intents, stated and implied requirements (i.e. letter and spirit of the code). It also helps the participants to know the mandatory, recommended and optional stipulations of the code.

The course also covers an overview of various codes and standards used in Process Industries for design, inspection, construction and in-service inspection. This course will be delivered in such a way that most of the code concepts will be clarified by both the code statements and the relevant examples. The course also deals in: What is Code and what is standard (difference between codes and standards), Selection of appropriate code and standard for intended application, where one can take deviations from code etc. The course is further designed such that participants with previous background of using the codes will understand the most effective and scientific use of codes for their purpose while the freshers will understand the correct approach and right use of the codes.

The course will highpoint:

- The main concepts and technical terms of Engineering Code
- The difference between code and standard
- The technical and scientific knowledge of Codes and standards
- An overview of commonly adopted codes and standards in the process Industries with specific emphasis on Oil & Gas, and Petrochemical Industries
- **Advanced Mechanical Codes, Standards & Specifications**
- **Latest update on standards**
- **TEMA Standard for heat exchangers and its latest update as part of lectures**
- **Latest update for design software used for mechanical design (PV Elite and Tanks)**
- **Mechanical design software as part on workshop (Software for Pressure Vessels and Heat Exchangers)**
- How to select appropriate code for design, material selection, inspection and construction

Training Objectives:

By the end of the training, participants will be able to:

- ✓ Appreciate the meanings of different technical terms and concepts used in engineering Codes and Standards
- ✓ Choose the right engineering code for an intended application and carry out certain types of engineering calculations
- ✓ Understand limitations imposed by various codes on material for construction for pressure components
- ✓ Understand Key Concepts of mechanical design, construction, Inspection and testing of pressure components
- ✓ Select the appropriate standard components

Training Designed for:

This course is intended for Design Engineers, Mechanical Engineers, Plant Managers with or without experience in application of codes & standards, Inspection Professionals, Maintenance Engineers & Technicians, and all Professionals involved in inspection and troubleshooting of operating plants.

Training Requirement:

“Hand’s on practical sessions, equipment and software will be applied during the course if required and as per the client’s request.”

Contents can be adapted to your specific wishes. It is therefore possible to focus on specific modules of the training course as per client’s learning needs and objectives. Further, it should be forwarded to us a month prior to the course dates.

Training Program:

FIVE DAYS:

- ❖ PRE-TEST
- ❖ Introduction
- ❖ **Concept of Codes and Standards**
 - What is code?
 - What is standard?
 - What is good engineering practice?
 - Why adopt codes?
 - Introduction to various normally used engineering codes
- ❖ **Objectives of Codes and Standards**
 - What is code philosophy?
 - Assumptions in codes and standards
 - Information provided by codes and standard
 - Information not provided by codes and standards
 - Role of engineering judgment
 - Code requirements, recommendations and options/alternatives
 - Code grammar, what means by SHALL, SHOULD & MAY
 - Codes singulars and plurals
 - Code contents, stated & implied stipulations in the codes
- ❖ **Various Design and Construction Codes Internationally Adopted**
 - Codes for pressure vessels
 - Codes for piping installations
 - Codes for tanks
 - Other engineering codes/miscellaneous codes
- ❖ **Various in-service Inspection Codes**
 - Codes for inspection of pressure vessels
 - Codes for inspection of piping installations
 - Codes for inspection of tanks
 - Difference between the construction codes and in-service inspection codes
- ❖ **Understanding of Various Codes**
 - Brief overview of codes for pressure vessels

- Brief overview of codes for piping installations
- Brief overview of codes for tanks
- Brief overview of codes for inspection, welding qualification and materials
- ❖ **Understanding of Various In-service Inspection Codes**
 - Brief overview of codes for inspection of pressure vessels (API510)
 - Brief overview of codes for inspection of piping installations (API570)
 - Brief overview of codes for inspection of tanks (API 653)
- ❖ **What is Standardization?**
 - Why adopt standards?
 - Concept of standardization,
 - Principles behind usability of standards
 - Introduction to various normally used standards
- ❖ **Introduction to Various Standards**
 - Introduction to ASME B 16.5
 - Introduction to ASME B 16.34
 - Introduction to ASME B 36.10, 36.19
 - Introduction to API 600 & 610
 - ASTM material standards
- ❖ **Advanced Mechanical Codes, Standards & Specifications**
- ❖ **Latest update on standards (Such as for Standards for Pressure Vessel ASME VIII Div I, Tanks, Heat exchangers / TEMA)**
- ❖ **TEMA Standard for heat exchangers and its latest update as part of lectures**
- ❖ **Latest update for design software used for mechanical design (PV Elite and Tanks)**
- ❖ **Mechanical design software as part on workshop (Software for Pressure Vessels and Heat Exchangers)**
- ❖ **Course Conclusion**
- ❖ **POST-TEST and EVALUATION**

Training Methodology:

This interactive training course includes the following training methodologies as a percentage of the total tuition hours:

- 30% Lectures, Concepts, Role Play
- 70% Workshops & Work Presentations, Techniques, Based on Case Studies & Practical Exercises, Gamification, Software & General Discussions
- Pre and Post Test

Training Certificate(s):

CMCT Internationally recognized certificate(s) will be issued to each participant who completed the course.

Training Fees:

TBA as per the course location - This rate includes participant's manual, hand-outs, buffet lunch, coffee/tea on arrival, morning & afternoon of each day.

Note: The 5% VAT (Value Added Tax), will be effective starting 01st of January 2018 as per the new regulation from the UAE Government. The VAT applies for all quotation both for local and abroad.

Training Timings:

Daily Timings:

07:45 - 08:00	Morning Coffee / Tea
08:00 - 10:00	First Session
10:00 - 10:20	Recess (Coffee/Tea/Snacks)
10:20 - 12:20	Second Session
12:20 - 13:00	Recess (Prayer Break & Lunch)
13:00 - 14:00	Last Session

For training registrations or in-house enquiries, please contact:

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Training & Career Development Department