

MATERIALS OF CONSTRUCTION FOR PROCESS EQUIPMENT AND PIPING SYSTEMS

“Select, Evaluate, and Apply Materials for Safe and Efficient Process Equipment and Piping Systems.”

Schedule

Venue (In-house)	Fees
At Your Organization Premises	Ask For The Quotation

► **Available delivery methods:** In-House Training

Introduction

Selecting the right materials for process equipment and piping systems is critical for ensuring safety, reliability, and operational efficiency. Incorrect material choices can lead to corrosion, equipment failure, costly downtime, and safety hazards.

The Materials of Construction for Process Equipment and Piping Systems course provides participants with a comprehensive understanding of material properties, selection criteria, and best practices in process industries. Participants will learn how to evaluate metals, alloys, plastics, and composites, understand corrosion mechanisms, and apply industry standards to optimize equipment and piping performance.

Objectives

By the end of this course, participants will be able to:

- Understand the fundamentals of materials science relevant to process equipment and piping.
- Identify and evaluate material properties including mechanical, thermal, and chemical characteristics.
- Assess corrosion, erosion, and wear mechanisms affecting materials.
- Select appropriate materials for specific process conditions and applications.
- Apply standards and codes in material selection for process industries.
- Evaluate piping systems and process equipment for material compatibility.
- Implement strategies for material maintenance and longevity.
- Reduce risks of equipment failure and operational downtime through proper material choices.

Why Attend

Proper material selection is essential to maintain safety, optimize performance, and reduce costs in process industries. This course equips participants with practical tools, standards knowledge, and case-based insights to make informed decisions in selecting and applying construction materials for equipment and piping systems.

Target Audience

This course is suitable for:

- Mechanical, Process, and Chemical Engineers
- Piping and Equipment Designers
- Maintenance and Reliability Engineers
- Project Engineers and Managers in Process Industries
- Quality Assurance and Material Engineers
- Technical Professionals involved in equipment selection and maintenance

Individual Benefits

- Gain practical knowledge of material properties and their applications.
- Improve decision-making in selecting materials for process systems.
- Enhance understanding of corrosion and material degradation.
- Increase professional competence in design, maintenance, and reliability.
- Develop confidence in applying industry standards and best practices.

Organizational Benefits

- Ensure equipment and piping systems are safe, reliable, and durable.
- Reduce operational downtime and maintenance costs.
- Optimize material usage and investment in process systems.
- Improve compliance with industry standards and safety regulations.
- Enhance overall plant performance and longevity of assets.

Instructional Methodology

The training employs a practical and interactive approach:

- Instructor-led sessions on material properties and selection criteria
- Real-world examples from process industries
- Case studies on material failures and solutions
- Workshops on material selection for equipment and piping
- Hands-on exercises analyzing material compatibility and performance
- Continuous feedback, Q&A sessions, and applied learning exercises

Course Outline

- Module 1: Introduction to Materials of Construction
- Module 2: Mechanical, Thermal, and Chemical Properties of Materials
- Module 3: Metals, Alloys, and Their Applications
- Module 4: Corrosion Mechanisms and Prevention
- Module 5: Plastics, Composites, and Non-Metallic Materials
- Module 6: Piping Systems Material Selection and Standards
- Module 7: Process Equipment Material Evaluation
- Module 8: Failure Analysis and Case Studies
- Module 9: Maintenance and Longevity Strategies for Materials
- Module 10: Practical Exercises - Material Selection for Process Applications

Certification

Upon successful completion, participants will receive a Certificate in Materials of Construction for Process Equipment and Piping Systems, acknowledging their expertise in selecting, evaluating, and applying construction materials for safe, efficient, and reliable process operations.

Why Choose MAWA Events

- **Global Expertise:** More than 17 years of experience in professional training and consulting.
- **Industry-Leading Faculty:** Courses delivered by seasoned professionals with hands-on experience.
- **Practical Insights:** Learn to turn theory into actionable strategies for real-world business impact.
- **Client-Focused Solutions:** Customized programs designed to achieve your organisation's unique goals.

In-House / Customized Training

Interested in running this course for your team?

Please contact us:

TEL:

+601116373203

EMAIL:

info@mawaevents.net

© Material published by MAWA Events shown here is copyrighted. All rights reserved. Any unauthorized copying, distribution, use, dissemination, downloading, storing (in any medium), transmission, reproduction or reliance in whole or any part of this course outline is prohibited and will constitute an infringement of copyright.