informatech

CONSTRUCTION MANAGEMENT | COURSE

# Metallurgy, Corrosion & Prevention of Failures Material

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# Course content

## Why Attend

### Course Introduction

Metallurgy, material selection, and corrosion management are crucial areas of expertise across various industries, especially in sectors like oil and gas production where materials face extreme operating conditions.

Mastery of metallurgy principles, choosing the right materials, and applying effective corrosion prevention techniques are vital for maintaining the integrity and durability of equipment and infrastructure.

This Metallurgy, Corrosion & Prevention of Failures Material training course will equip participants with the knowledge and skills to identify suitable materials for use in oil and gas production and processing systems.

## Course Methodology

This training course will utilise a variety of proven adult learning techniques to ensure maximum understanding, comprehension and retention of the information presented.

This includes presentations and interactive practical exercises, supported by videos, activities and case studies.

### Who should Attend?

This training program is designed for professionals and practitioners working in industries where metallurgy, material selection, and corrosion play a crucial role in asset integrity and performance.

The course is suitable for:

• Engineers involved in the design, construction, and maintenance of oil and gas production facilities.

• Materials specialists responsible for selecting and specifying materials for various applications.

• Inspection and quality control personnel involved in assessing material integrity and conducting non-destructive examinations.

• Anyone seeking to deepen their understanding of metallurgical principles and corrosion prevention strategies in industrial settings.

# Course content

## Course Objectives

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

• Provide participants with a comprehensive understanding of metallurgical principles and their applications in material selection.

• Equip participants with the knowledge and skills to identify suitable materials for use in oil and gas production and processing systems.

• Familiarize participants with common corrosion phenomena encountered in industrial environments and strategies for corrosion prevention.

• Enhance participants' understanding of welding metallurgy and its implications for material integrity.

• Introduce participants to non-destructive examination techniques for assessing material integrity and quality control.

## Course outline

### Day One: Introduction to Metallurgy and Material Selection

• Introduction to Metallurgy

• Classification of Steels and Heat Treatment

• Crystal Structure and Phase Diagrams

• Mechanical Metallurgy

• Destructive Testing

### Day Two: Materials and Metallurgy in Oil & Gas Industry

• Mechanical Properties and Characteristics of Metals

• Design Basis for Hydrocarbon Systems

• Selection of Materials for Oil & Gas Production

• Substitute Materials

# Course content

## Course outline

### Day Three: Welding Metallurgy and Corrosion

- Fundamentals of Welding Metallurgy
- Weld Solidification and Microstructure
- Welding Processes and Techniques
- Weld Overlay and Corrosion Prevention

### Day Four: Corrosion Phenomena and Prevention

- Connection of Dissimilar Materials
- Sealing Materials
- Forms of Corrosion
- Common Corrosion Phenomena in Oil & Gas Industries
- Case Studies of Corrosion Failures

### Day Five: Non-Destructive Examinations and Conclusion

- Glossary and Quality Control in NDT
- Standards for NDT and Welding Inspections
- Non-Destructive Examination Techniques
- Course Conclusion and Feedback

# Seminar dates

## Available seminar dates

Live dates and pricing for Metallurgy, Corrosion & Prevention of Failures Material generated from the course details page.

| Date | Location | Format | Fee |
|---|---|---|---|
| 20 - 24 July 2026 | London - U.K | Classroom | **€4,200.-** |
| 3 - 7 August 2026 | Rome - Italy | Classroom | **€4,250.-** |
| 7 - 11 September 2026 | Munich - Germany | Classroom | **€3,450.-** |
| 12 - 16 October 2026 | Amsterdam - Netherlands | Classroom | **€4,250.-** |
| 9 - 13 November 2026 | London - U.K | Classroom | **€4,200.-** |
| 14 - 18 December 2026 | Istanbul - Turkey | Classroom | **€2,850.-** |

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| **Live online option** | Online delivery is available at €1,850.-. |