

# Material Selection in Oil and Gas Upstream Training

*COURSE CONTENT*

## GET IN TOUCH



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## About Multisoft

Train yourself with the best and develop valuable in-demand skills with Multisoft Systems. A leading certification training provider, Multisoft collaborates with top technologies to bring world-class one-on-one and certification trainings. With the goal to empower professionals and business across the globe, we offer more than 1500 training courses, which are delivered by Multisoft's global subject matter experts. We offer tailored corporate training; project Based Training, comprehensive learning solution with lifetime e-learning access, after training support and globally recognized training certificates.

## About Course

The Material Selection in Oil and Gas Upstream training course offered by Multisoft Systems is designed to equip industry professionals with critical skills and knowledge for selecting appropriate materials in the upstream sector of the oil and gas industry.

## **Module 1: Review of Completion Components and Well Assemblies**

- ✓ Downhole elements
- ✓ Casing components
- ✓ Completion accessories
- ✓ Wellhead and X-mass tree
- ✓ API temperature class
- ✓ API material class
- ✓ Product Specification Level (PSL)

## **Module 2: An Introduction to Well Integrity Management System (WIMS)**

- ✓ What is well integrity?
- ✓ Well Integrity Management System (WIMS)
- ✓ Well integrity failures
- ✓ Well barriers

## **Module 3: Basic Metallurgy and Mechanical Properties of Steels**

- ✓ Engineering materials
- ✓ International standards
- ✓ Mechanical properties
- ✓ Downhole steels and alloys

## **Module 4: Fundamentals of Corrosion & Material Degradation**

- ✓ Corrosion basics
- ✓ Cost of corrosion

- ✓ Typical corrosion types

## **Module 5: Downhole Corrosion Mechanisms and Failure Case Studies**

- ✓ Downhole corrosion mechanisms
- ✓ Corrosion prediction
- ✓ Standards and tests
- ✓ Corrosion failures case studies

## **Module 6: Casing and Tubing Standards, Grades & Manufacturing**

- ✓ API Standards
- ✓ API 5CT Grades
- ✓ API 5CT/ISO 11960
- ✓ API 5CRA/ISO 13680
- ✓ Manufacturing process
- ✓ Basics of API & premium connections
- ✓ Connection Assessment Levels (CAL)

## **Module 7: Material Selection Strategy**

- ✓ The main criteria for material selection
- ✓ Factors affecting materials selection
- ✓ Material selection required information
- ✓ Material selection examples
- ✓ Non-metallic material functional requirements
- ✓ Thermoplastic materials
- ✓ Elastomers in downhole completion

## **Module 8: Material Selection Case Studies**

- ✓ Casing string material selection
- ✓ Production string & completion equipment material selection
- ✓ Material class selection of wellhead and X-mas tree

## **Module 9: Software Simulation**

- ✓ Evaluation and determination of corrosion in steels using PREDICT®
- ✓ CRA material selection for corrosive oil and gas applications using SOCRATES®