

**Training Title**

**OFFSHORE RELIABILITY**

**Training Duration**

**5 days**

**Training Venue and Dates**

REF: OE205	Offshore Reliability	5	23-27 June 2025	\$5,500	Dubai, UAE
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Training will be held at any of the 4-5-star hotels. The exact venue will be informed later.

**Training Fees**

\$5,500 per participant for Public Training includes Materials/Handouts, tea/coffee breaks, refreshments & Lunch

**Training Certificate**

Define Management Consultancy & Training Certificate of course completion will be issued to all attendees.

**TRAINING DESCRIPTION**

The Offshore Reliability Engineering course is designed to equip professionals working in offshore industries—such as oil & gas, wind energy, and marine systems—with the knowledge and tools to enhance equipment reliability, improve asset integrity, and reduce operational risk. The course addresses the unique environmental, safety, and logistical challenges inherent in offshore operations and teaches proven methods for improving system performance and uptime.

Through a blend of theory, industry standards, case studies, and practical tools, participants will gain a deep understanding of how to design, implement, and manage a robust reliability program in offshore environments.

**TRAINING OBJECTIVES**

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

- Understand and apply reliability engineering concepts to offshore systems.
- Analyze failure modes and develop risk-based maintenance strategies.
- Collect and interpret failure data for continuous improvement.
- Apply standards such as ISO 14224, API RP 581, and IEC 61508 to offshore reliability.
- Optimize maintenance through techniques like RCM and CBM.
- Develop strategies for improving uptime, safety, and operational efficiency.

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## **TRAINING METHODOLOGY**

A highly interactive combination of lecture and discussion sessions will be managed to maximize the amount and quality of information, knowledge and experience transfer. The sessions will start by raising the most relevant questions, and motivate everybody finding the right answers. The attendants will also be encouraged to raise more of their own questions and to share developing the right answers using their own analysis and experience.

All attendees receive a course manual as a reference.

This interactive training workshop includes the following training methodologies

30% Lectures

30% Workshops and work presentation

20% Group Work & Practical Exercises

20% Videos & General Discussions

## **WHO SHOULD ATTEND**

This course is ideal for:

- Reliability Engineers
- Offshore Maintenance Engineers
- Asset Integrity Engineers
- Operations Managers
- Safety and Risk Analysts
- Project Engineers involved in offshore asset design or operation

## **COURSE OUTLINE**

### **Module 1: Introduction to Offshore Reliability Engineering**

- Overview of offshore operations (Oil & Gas, Wind, Marine)
- Importance of reliability in offshore environments
- Key challenges in offshore reliability
- Introduction to reliability engineering principles (RAM – Reliability, Availability, Maintainability)

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### **Module 2: Reliability Fundamentals**

- Definitions: MTBF, MTTF, MTTR, Availability
- Failure modes and effects (FMEA/FMECA)
- Reliability Block Diagrams (RBD)
- Fault Tree Analysis (FTA)
- Weibull analysis and life data modeling

### **Module 3: Offshore Asset Management Standards**

- ISO 55000 and ISO 14224 (Reliability data collection for equipment)
- API RP 581 / 580 (Risk-Based Inspection)

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- IEC 61508 / IEC 61511 (Functional safety for offshore systems)
- DNVGL standards (Asset integrity, marine systems)

#### Module 4: Data Collection and Analysis

- Offshore data acquisition challenges
- Failure data collection and analysis techniques
- Condition-based and predictive maintenance data
- Root Cause Analysis (RCA)

#### Module 5: Reliability-Centered Maintenance (RCM)

- Principles and process of RCM
- RCM vs. traditional maintenance strategies
- Implementing RCM in offshore operations
- Maintenance Optimization

#### Module 6: Risk and Reliability Modeling

- Quantitative Risk Assessment (QRA)
- Reliability modeling of offshore systems
- SIL assessment and LOPA in offshore operations
- Use of software tools (ReliaSoft, PHA-Pro, or RAM Commander)

#### Module 7: Case Studies and Applications

- Reliability improvements in offshore drilling platforms
- Floating production systems (FPSO) reliability
- Wind turbine reliability in harsh environments
- Subsea equipment reliability management

#### Module 8: Reliability Program Implementation

- Developing a reliability strategy for offshore assets
- KPIs and performance monitoring
- Cultural and organizational factors
- Digital transformation and Industry 4.0 in offshore reliability

#### NOTE:

**Pre & Post Tests will be conducted**

**Case Studies, Group Exercises, Group Discussions, Last Day Review & Assessments will be carried out.**

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