

Inspection, Repair and Rehabilitation of Marine Structures

INTRODUCTION

- This training course examines methods of inspection, rehabilitation, and repair of a wide range of marine structures and waterfront facilities. It also discusses the inspection, risk-based inspection of offshore structures and subsea equipment. The contents of marine structures in this training course include timber structures, concrete structures, steel structures and structures comprising synthetic material.

This training course will highlight:

- Types of port facilities, offshore and marine structures, and subsea equipment
- Inspection and maintenance of marine structures
- Maintenance and rehabilitation of waterfront structure
- Inspection and integrity of offshore structures
- Inspection and maintenance of subsea equipment

OBJECTIVES

By the end of this training course, participants will learn:

- Different types of port facilities, waterfront structures, offshore structures
- Overview of subsea engineering and subsea equipment
- Repair and rehabilitation Techniques of different waterfront structures such as piers, jetties and quay walls
- Risk based maintenance and inspection (RBI) for offshore structures and subsea equipment
- challenges in inspection of offshore and subsea structures

TRAINING METHODOLOGY

- Participants to this training course will receive a thorough training on the subjects covered by the seminar outline with the Tutor utilising a variety of proven adult learning teaching and facilitation techniques. Seminar methodology includes case studies, exercises, group discussions etc.
- The training course will include a comprehensive manual, PowerPoint presentations, videos, practical examples, and competency assurance tests.

ORGANISATIONAL IMPACT

The organization will benefit as the following:

- Improve the quality of operation of different types of marine structures in the infrastructure and oil & gas industries
- Improve organization investment by training people to be decision makers in marine and offshore structures
- Improve project investment by defining how to modify the quality control of ports, marine structures and offshore construction or maintenance
- Increase cost savings by encouraging the organization to focus on repair and rehabilitation techniques of wide ranges of waterfront structures
- Increase the efficiency of projects by strengthening the competencies of human resources

PERSONAL IMPACT

The delegates will benefit as the following:

- Increase awareness of different types of marine structures and the material comprising these structures
- Enhancing the knowledge about different methods of repair of marine structures
- Increase understanding of the importance of repair and rehabilitation of marine structures
- Enhance problem-solving abilities for maintaining marine structures
- Improving the delegates' operational skills

WHO SHOULD ATTEND?

This training course is suitable to a wide range of professionals but will greatly benefit:

- Project managers and project engineers
- Marine structures engineers
- Offshore structures engineers
- Subsea engineers
- Structural engineers
- Designer engineer (civil engineer)
- Site Engineer (civil Engineer)
- Mechanical engineers
- QA/QC engineers
- Inspectors
- Operation engineers

Course Outline

Introduction to Berthing Facilities, Offshore Structures and Subsea Engineering

- Typical beach profile (Onshore, near shore, offshore, etc.)
- Ports berthing facilities (Quay walls, jetties)
- Types of offshore structures (Fixed platforms, floating structures, subsea system)
- Overview of subsea engineering

Inspection of Marine Structures

- Factors affecting inspection performance
- Issues in quantifying performance
- Materials for ocean structures
- Maintenance planning and types of facilities
- Materials and preventive maintenance
- Safety and environmental compliance
- Levels of inspection

Maintenance and Rehabilitation of Waterfront Facilities

- Repair of wood and timber structures
- Repair of concrete structures
- Repair of steel structures
- Repair of synthetic material
- Repair of bulkheads and quay walls

Inspection & Maintenance of Offshore Structures

- Risk and reliability evaluation
- Risk based maintenance and inspection (RBI)
- Offshore structure integrity
- Introduction of cathodic protection

Subsea Equipment, Inspection and Maintenance

- Subsea equipment (PLEM, connections and jumbars)
- Next generation subsea inspection, maintenance, and repair
- Challenges of subsea inspection
- Safety in operation and maintenance
- Emergency shutdown