MERCURY

Vessel Handling & Controlling

13 – 17 September 2027
Madrid (Spain)



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Ref: 121484_1034598 **Date:** 13 – 17 September 2027 **Location:** Madrid (Spain) **Fees:** 6200 Euro

Introduction

The Vessel Handling & Controlling course develops a strong theoretical foundation in ship handling and operational control. It provides essential knowledge of vessel maneuvering techniques used in different sea conditions and port environments. The course focuses on improving understanding of navigation safety, ship response behavior, and bridge coordination principles. Participants will explore how environmental factors influence vessel movement and operational decision-making. The program also emphasizes structured maritime operations aligned with global safety standards and efficient port management practices. Learners will understand and analyze vessel control systems that are critical to safe and efficient maritime operations.

Targeted Groups

This Vessel Handling & Controlling training targets professionals seeking knowledge and skills:

- Marine officers are aiming to improve their understanding of ship handling.
- Deck cadets preparing for maritime operational roles.
- Port operations staff are involved in coordinating vessel movements.
- Maritime safety supervisors focus on navigation safety.
- Shipping company personnel managing vessel logistics.
- Naval architecture students exploring ship behavior principles.
- Offshore operations teams working with vessel positioning systems.
- Maritime consultants enhancing operational expertise.

Course Objectives

Participants will achieve the following objectives by completing the Vessel Handling & Controlling course:

- Understand core principles of vessel handling and maneuvering operations.
- Analyze ship movement behavior under different sea and weather conditions.
- Identify safe navigation practices for port entry and exit procedures.
- Evaluate bridge communication and decision-making processes in ship control.
- Understand anchoring, mooring, docking, and undocking operations.
- Develop awareness of maritime safety regulations and operational compliance.
- Recognize environmental impacts on vessel performance and stability.
- Strengthen theoretical knowledge of ship response and control systems.
- Interpret operational risks in maritime navigation and port environments.
- Build a foundational understanding of modern vessel handling systems and techniques.

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Targeted Competencies

Participants will gain the following competencies during the Vessel Handling & Controlling program:

- Theoretical understanding of ship handling and vessel maneuvering principles.
- Ability to interpret navigation safety requirements in maritime operations.
- Knowledge of port entry, docking, and undocking procedures.
- Understanding of bridge coordination and communication structures.
- Awareness of mooring, anchoring, and vessel stability concepts.
- Analytical skills in evaluating the environmental impact on ship movement.
- Familiarity with maritime safety management frameworks.
- Competence in identifying operational risks in vessel control scenarios.
- Insight into modern ship navigation systems and operational decision factors.

Studying Scenarios

In this Vessel Handling & Controlling training, participants develop skills through the following scenarios:

- Simulated ship docking and undocking in busy port conditions.
- Navigation through restricted waterways and congested maritime routes.
- Responding to sudden weather changes affecting vessel stability.
- Coordinating bridge team decisions during complex maneuvering operations.
- Managing anchoring and mooring in high-risk operational environments.

Course Content

Unit 1: Fundamentals of Vessel Handling and Maritime Operations

- Introduction to vessel handling training and core maritime concepts.
- Overview of ship handling principles and vessel response behavior.
- Understanding maritime operations and navigation safety fundamentals.
- Study of vessel types and their maneuvering characteristics at sea.
- Basic hydrodynamic forces affecting ship movement and control.
- Introduction to bridge systems and operational communication flow.
- Role of ship handling in safe maritime transportation and logistics.
- Overview of vessel control systems in modern shipping operations.

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Unit 2: Ship Maneuvering Techniques and Operational Control

- Principles of ship maneuvering in open sea and restricted waters.
- Docking procedures and vessel alignment techniques in port areas.
- Undocking operations and safe departure maneuver strategies.
- Turning circles, stopping distances, and ship response behavior.
- Use of propulsion systems in vessel handling and directional control.
- Influence of wind, current, and tide on maneuvering decisions.
- Emergency maneuvering techniques during navigation challenges.
- Coordination between the pilot, the captain, and the bridge team operations.

Unit 3: Navigation Safety and Bridge Resource Management

- Fundamentals of navigation safety in maritime vessel operations.
- Bridge resource management and team coordination principles.
- Communication protocols for safe vessel control and monitoring.
- Use of navigational instruments for accurate ship positioning.
- Risk assessment techniques in maritime navigation environments.
- Collision avoidance strategies and international maritime rules.
- Situational awareness development for ship handling operations.
- Decision-making processes during high-pressure navigation scenarios.

Unit 4: Port Operations, Mooring, and Anchoring Systems

- Overview of port operations and vessel traffic management systems.
- Mooring techniques and equipment used in ship securing processes.
- Anchoring procedures and seabed interaction considerations.
- Port entry and exit coordination with harbor control authorities.
- Tug assistance operations for vessel maneuvering support.
- Safety measures during loading and unloading operations at ports.
- Environmental considerations in port handling activities.
- Coordination between shore teams and vessel bridge operations.

Unit 5: Advanced Vessel Control and Emergency Handling

- Advanced vessel control systems in modern maritime operations.
- Emergency response procedures during ship handling incidents.
- Heavy weather navigation and storm avoidance strategies.
- Equipment failure response in vessel maneuvering situations.
- Crisis management in maritime navigation environments.
- Human factors influencing vessel control and operational safety.
- Environmental protection measures during maritime emergencies.
- Integration of safety management systems in ship handling operations.

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Final Insights & Key Takeaways

Vessel Handling & Controlling builds a strong theoretical foundation in safe and efficient ship maneuvering across diverse maritime environments. It equips learners with essential knowledge to understand vessel behavior, operational safety, and coordinated maritime decision-making.