WEB-BASED TRAINING

eLearning Solutions for Marine and Offshore Professionals

ABS Academy

PROFESSIONAL MARITIME TRAINING

ABS Academy® training courses are used by many of the industry's leading shipowners to enhance the operational safety and performance of their assets.

ABS Academy is committed to being your training partner. This commitment means providing courses that extend beyond the traditional curriculum and present you with training solutions to address your needs.

Designed to meet the technical and management needs of shipowners, managers, and operators of marine and offshore assets, ABS Academy's targeted training features best practice applications for design and operations.

TECHNICALLY TRAINED EMPLOYEES ARE MORE LIKELY TO HAVE THE CONFIDENCE AND NECESSARY SKILLS TO PERFORM THEIR WORK AT A HIGH LEVEL.

ABS MISSION

The mission of ABS is to serve the public interest as well as the needs of our members and clients by promoting the security of life and property and preserving the natural environment.

TRAINING AT-A-GLANCE

With a rich history of marine and offshore technical expertise spanning more than 160 years, ABS offers an extensive portfolio of web-based learning solutions.

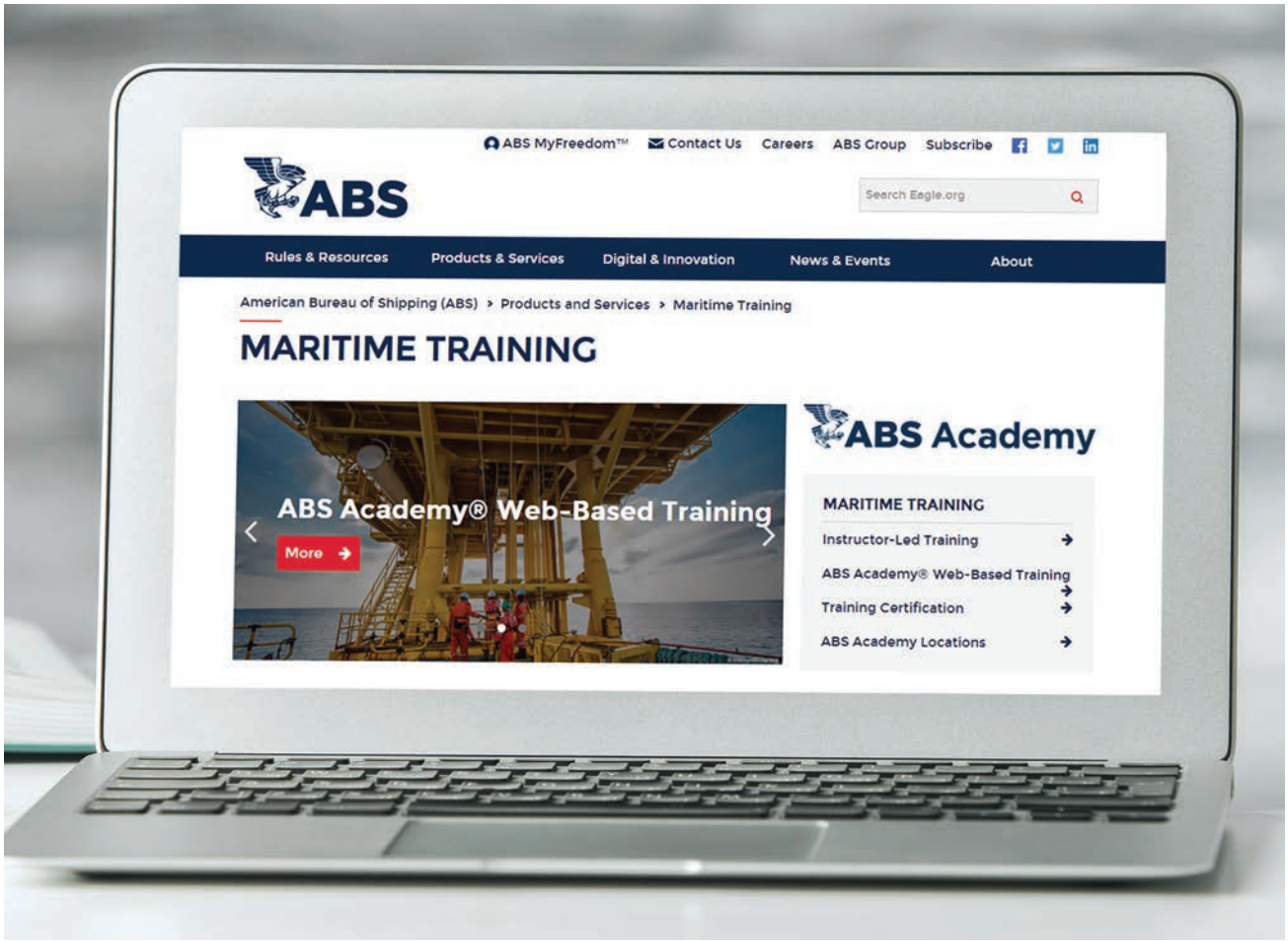
The purpose of employee learning and development is a new and higher level of performance that supports an organization's mission objectives and improves business outcomes.

ABS has developed a library of web-based training curricula that cover technical concepts, operational issues, and classification and regulatory requirements for marine and offshore organizations, including principles related to marine engineering and naval architecture.

ABS offers subscription-based pricing for web-based training tracks specifically geared to marine or offshore new construction. Clients can also select curricula from our web-based training library to suit their specific learning needs.

For more information, contact your nearest ABS Academy®.

AN ORGANIZATION'S ABILITY TO LEARN AND TRANSLATE LEARNING INTO ACTION IS THE ULTIMATE COMPETITIVE ADVANTAGE.



WEB-BASED TRAINING

ABS Academy® web-based training curricula that cover technical concepts, operational issues, and classification and regulatory requirements for marine and offshore organizations, including principles related to marine engineering and naval architecture.

With web-based training, geographic boundaries don't exist. Training material can be accessed at any time and completed or referenced from nearly any location.

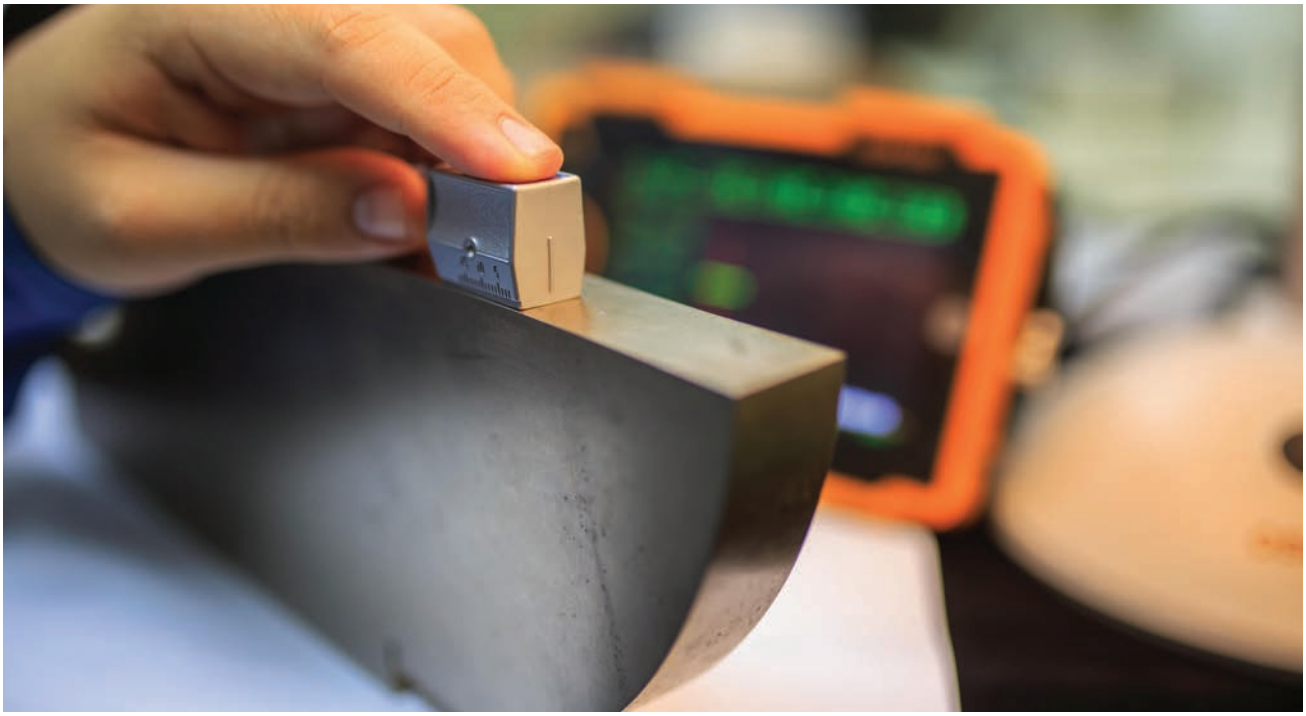
Web-based training is more cost-effective than classroom training. Fewer training days are required to complete the same content, as the same material in a classroom could take weeks rather than hours. The material is more consistent with web-based training, as users receive exactly the same information.

In addition, web-based training is easily scalable, allowing a large number of people to complete courses in a matter of hours.

WEB-BASED TRAINING ALLOWS USERS TO LEARN AT THEIR OWN PACE, AT A TIME THAT IS CONVENIENT.

ABS Academy offers subscription-based pricing for web-based training tracks specifically geared to marine or offshore new construction. Clients can also select curricula from our web-based training library to suit their specific learning needs.

Company-wide access to the courses is available for one calendar year.



MAIN ELECTRIC POWER
(Duration: 8 hours)

- Electrical System Overview
- Power Distribution 1
- Power Distribution 2
- Transformers, Converters, and Shore Connection
- Typical Failures, Procedures, and Ship Requirements

ABS-CLASSED VESSELS: OIL TANKERS
(Duration: 2 hours)

- Oil Tankers: Overview
- Types, Classification, and Regulatory Aspects
- Structural Characteristics, Cargo Handling, and Safety Hazards
- Propulsion, Steering, Equipment, and Systems

COMMON ENGINEERING PRINCIPLES AND PRACTICES
(Duration: 11.5 hours)

- Naval Architecture 1
- Naval Architecture 2
- Marine Engineering 1
- Marine Engineering 2

HAZARDOUS AREAS
(Duration: 8 hours)

- Hazardous Areas 1
- Hazardous Areas 2
- Hazardous Areas 3

NONDESTRUCTIVE EVALUATION
(Duration: 7 hours)

- Nondestructive Test Certification
- Liquid Penetrant Testing
- Magnetic Particle Inspection Testing
- Ultrasonic Inspection Testing
- Radiography

BLUEPRINT READING AND INTERPRETATION
(Duration: 18.5 hours)

- Drawing Nomenclature
- Vessel Structures
- Hull Design Drawings
- Machinery Drawings
- Electrical Drawings
- Piping Drawings
- Outfitting Drawings

WEB-BASED TRAINING LISTING

METALLURGY OF STEEL
(Duration: 3.5 hours)

- Crystalline Structures and Chemistry
- Microstructures
- Heat Treatment
- Mechanical Properties

MATERIALS TESTING
(Duration: 4 hours)

- Tension Testing
- Impact and CTOD Testing
- Fatigue and Bend Testing
- Hardness Testing
- Other Tests

CARBON STEELS
(Duration: 5 hours)

- Chemistry and Categorization
- Manufacturing Process
- Ordinary and Higher Strength Steel
- ABS Special Grade Steels
- Non-ABS Grade Steels
- Pipes, Tubes, and Tubular Structures

STEEL CASTINGS
(Duration: 2.5 hours)

- Steel Hull and Machinery Castings
- Examination, Repairs, and Marking
- Ductile and Gray Iron Castings

STEEL FORGINGS
(Duration: 3.5 hours)

- Carbon Steel Forgings
- Forging Defects
- Material Characteristics of Forgings

NONMETALLIC MATERIALS
(Duration: 4.5 hours)

- Introduction to Nonmetallic Materials
- Laminate Composites From Fiber-Reinforced Plastics
- Laminate Components
- Laminate Properties and Tests
- Glass for Marine Applications

QUALIFIED WELDING INSPECTOR

(Duration: 16 hours)

- Material Types and Casting Discontinuities
- Material Properties, Characteristics, and Tests
- Basic Welding Metallurgy
- Weld Joint Geometry and Welding Terminology
- Weld Symbol Types and Test Symbol Types
- Welding Processes
- Welding Discontinuities and Repairs
- Welding Procedure Specification
- Welding Procedure Qualification
- Welder Performance Qualification
- Welding Stress Control

ELECTRICAL SYSTEMS

(Duration: 14 hours)

- Basic Electrical Theory and Principles
- Applied Electrical Concepts
- Load Analysis
- Loads, Rating, and Earthing
- Short Circuits
- Protective Devices
- Transformers
- Rotating Machines: Installation, Testing, and Protection
- Rotating Machines: Factory Tests
- Rotating Machines: Certification
- Switchboards and Shore Connections
- Motor Control Centers and Motor Controllers
- Electrical Cable Testing and Certification Requirements
- Electrical Cable Construction
- Cable Installations I
- Cable Installations II
- Emergency Generator and Lighting
- Battery System

SOLAS ELECTRICAL SYSTEMS
(Duration: 1.5 hours)

- Navigation System
- Fire Detection and Alarm Systems

AUTOMATION SYSTEMS
(Duration: 2.75 hours)

- Monitoring and Alarm, Slowdown, and Shutdown Systems
- Communication Systems
- Computer-Based Systems I
- Computer-Based Systems II

PIPING SYSTEMS: GENERAL
(Duration: 13.5 hours)

- General Piping
- Piping System Components
- Basic Piping Design Requirements
- Piping Installation Requirements
- Specific Piping Material

PORT STATE CONTROL
(Duration: 6.5 hours)

- Introduction to Port State Control
- External Hull and Statutory Document Deficiencies
- Navigation Bridge and Hull Deficiencies
- Machinery Space Deficiencies
- Lifesaving Appliances, Ventilation Systems, and Firefighting Deficiencies
- Post-Detention

THICKNESS MEASUREMENTS FOR VESSELS
(Duration: 6.5 hours)

- Thickness Measurement Concepts and Tools
- General Thickness Measurement Process
- Substantial Corrosion
- Vessel Thickness Measurements

MODU OVERVIEW

(Duration: 3 hours)

- Introduction to MODUs
- Self-Elevating Drilling Units
- Surface-Type Drilling Units
- Column-Stabilized Drilling Units

BASIC DRILLING AND WELL CONTROL

(Duration: 5.25 hours)

- Basic Petroleum Geology and Exploration
- Basic Offshore Drilling
- Basic Offshore Well Construction
- Basic Offshore Well Completion
- Basic Offshore Well Pressure Control
- Onboard Mud Circulation Systems
- Secondary Well Control

THICKNESS MEASUREMENTS FOR OFFSHORE UNITS

(Duration: 6.5 hours)

- Thickness Measurement Concepts and Tools
- General Thickness Measurement Process
- Substantial Corrosion
- Offshore Unit Thickness Measurements

MODU ELECTRICAL SYSTEMS

(Duration: 4 hours)

- MODU Electrical Systems 1
- MODU Electrical Systems 2

MODU PIPING SYSTEMS

(Duration: 6 hours)

- MODU Piping Systems 1
- MODU Piping Systems 2
- MODU Piping Systems 3

OFFSHORE EMERGENCY SHUTDOWN (ESD) SYSTEMS

(Duration: 3 hours)

- Emergency Shutdown Systems: Purpose
- How Emergency Shutdown Systems Operate
- Emergency Shutdown Systems: Components
- Emergency Shutdown Systems: Trigger Conditions
- Systems and Equipment Affected by Emergency Shutdown System
- Verify Effective Operation of Emergency Shutdown Systems

OFFSHORE PRODUCTION INSTALLATIONS

(Duration: 6.25 hours)

- Offshore Production Installations: Introduction
- Classification and Statutory Regulations
- Mooring Systems
- Mooring Line Components and Foundations
- Mooring Equipment, Turrets, and Buoys
- Oil and Gas Production
- LNG Production
- Import and Export Systems
- Subsea Production Systems

MULTI-CABLE TRANSIT SYSTEMS

(Duration: 1.5 hours)

- Multi-Cable Transit Systems: System Types
- Multi-Cable Transit Systems: Installations, Repairs, and Maintenance
- Multi-Cable Transit Systems: Millionaire Challenge

SHAFT ALIGNMENT

(Duration: 20.5 hours)

- Fundamentals
- Survey Preparation
- Procedures
- Sighting Methods
- Pre-Sighting and Stern Tube Bore Sighting
- Final Sighting of the Stern Tube
- Tail Shaft Clearance Measurements
- Sag and Gap Measurements
- Bearing Reaction Measurements: Part 1
- Bearing Reaction Measurements: Part 2
- Bearing Reaction Measurements: Part 3
- Main Engine Installation and Gear Tooth Contact
- Sea Trials
- Sea Trials: Scenario 1
- Sea Trials: Scenario 2

CYBERSECURITY FOR AUDITORS

(Duration: 6 hours)

- Introduction to Cybersecurity
- Cybersecurity Basics
- Cyber Risk Management: Approach
- Cyber Risk Management: Threats
- Cyber Risk Management: Vulnerabilities
- Cyber Risk Management: Consequences
- Cyber Risk Management: Threats, Vulnerabilities, and Consequences Activity
- Cyber Risk Management: Control Measures
- Cyber Risk Management and the SMS

DATA NETWORKS AND CYBER RESILIENCE

(Duration: 3 hours)

- Network Basics
- Cyber Resilience for Ships
- Cyber Resilience for Onboard Equipment and Systems

DECARBONIZATION

(Duration: 3 hours)

- Maritime Decarbonization
- Decarbonization Solutions
- Sustainability at ABS

STEEL VESSEL STRUCTURES

(Duration: 10 hours)

- Steel Vessel Basic Requirements: Introduction
- Relevant Class Notation
- Main Dimensions
- Hull Structure Materials
- Welding and Coating Requirements
- Hull Girder Longitudinal Strength
- Section Modulus and Moment of Inertia
- Scantling Calculations
- Steel Vessel Basic Requirements: Closing
- Main Hull Structure Overview: Introduction
- Shell Plating
- Deck Plating: Types of Decks
- Deck Plating: Deck and Inner Bottom Requirements
- Bottom Structures
- Side Structures
- Deck Structures
- Bulkhead Types
- Bulkheads: Construction and Arrangements
- Main Hull Structure Overview: Closing
- Steel Vessel Specific and Miscellaneous Requirements: Introduction
- Openings and Penetrations
- Superstructures and Deckhouses
- Opening Protection and Safety Features
- Miscellaneous Structure Requirements
- Structural Design Review: Lessons Learned
- Steel Vessel Specific and Miscellaneous Requirements: Closing

MAIN ELECTRIC POWER

Learn the basic characteristics of main electrical power systems on marine vessels and offshore units, as well as ABS plan review requirements for the main electrical system arrangement.

ELECTRICAL SYSTEM OVERVIEW

This course covers the main electrical system arrangement and electrical symbols. A basic knowledge of electrical systems, associated major components, instrumentation, arrangements, and electrical symbols is required to interpret electrical drawings when evaluating electrical systems.

- Main electrical systems and their arrangement
- Principal electric symbols

POWER DISTRIBUTION 1

This course provides ABS requirements for generators, power distribution system arrangements, and power distribution system main components.

- Generators
- Power distribution system arrangements
- Power distribution system main components

POWER DISTRIBUTION 2

This course covers the requirements for cables and circuit protection systems.

- Electrical cables
- Circuit protection systems

CURRICULUM DURATION: 8 HOURS

TRANSFORMERS, CONVERTERS, AND SHORE CONNECTION

This course explains the requirements for the rating and duplication for main power transformers and converters and instrumentation for connecting to shore power.

- Main power transformers
- Main power converters
- Shore connection

TYPICAL FAILURES, PROCEDURES, AND REQUIREMENTS

This course explains typical failures, emergency shutdown procedures, requirements related to harmonics, and additional requirements related to different types of ships and offshore units.

- Typical failures related to main electrical systems
- Requirements related to general and specific emergency shutdown procedures
- Theory, effects, limits, and mitigation of harmonics
- Additional requirements related to different types of ships and offshore units

ABS-CLASSED VESSELS: OIL TANKERS

Recognize oil tankers and their operational characteristics, including typical structures, cargo handling, and safety hazards, propulsion, steering, other equipment and systems, as well as applicable classification and environmental regulations.

OIL TANKERS: OVERVIEW

This course provides an overview of oil tankers.

- Function and operations of oil tankers
- Evolution of oil tankers
- Characteristics of owners, operators, and charterers
- Major shipbuilding characteristics
- Oil trade routes

TYPES, CLASSIFICATION, AND REGULATORY ASPECTS

The course explains the main characteristics of the different types of oil tankers and the classification and basic regulatory environment specific to oil tankers.

- Compare and contrast the main characteristics of the different types of oil tankers
- Describe the classification and basic regulatory environment specific to oil tankers

STRUCTURAL CHARACTERISTICS, CARGO HANDLING, AND SAFETY HAZARDS

The course covers structural characteristics, cargo handling operations, and safety hazards for oil tankers.

- Main structural characteristics of oil tankers
- General arrangement of an oil tanker
- Typical features in the midship section
- Systems and equipment related to oil cargo handling and hazards

PROPULSION, STEERING, EQUIPMENT, AND SYSTEMS

The course explains propulsion, steering, and other typical equipment and systems used in oil tankers.

- Characteristics of propulsion and steering in oil tankers
- Typical equipment and systems for oil tankers

CURRICULUM DURATION: 2 HOURS

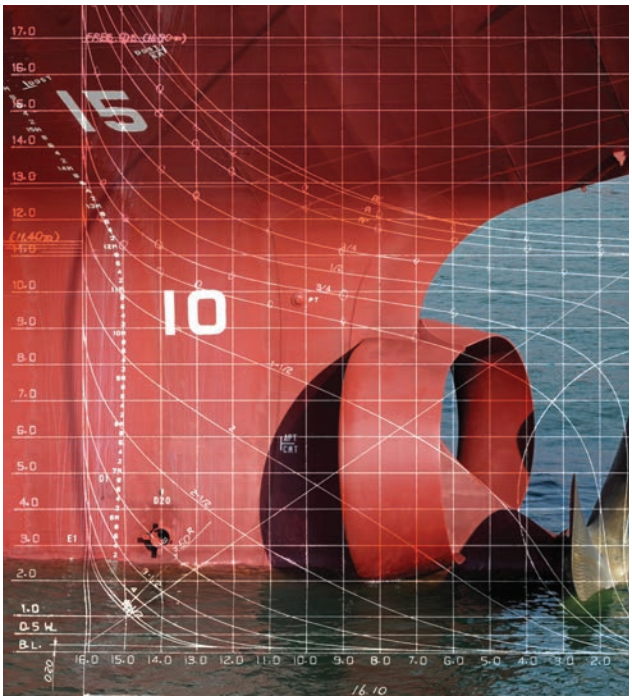
COMMON ENGINEERING PRINCIPLES AND PRACTICES

Recognize the basic principles and practices of naval architecture and marine engineering. The curriculum provides an overview of engineering activities, including plan approval for compliance with ABS classification requirements for marine vessels and offshore units.

NAVAL ARCHITECTURE 1

This course gives an overview of the theories behind ship design, the types of materials that are used to build ships and offshore structures, and the way ships and offshore units behave on water. Once you can recall these concepts, you will understand how vessels and offshore units are built to withstand operating conditions.

- Characteristics of ship design
- Geometry and hydrostatics of ships
- Principles of ship motion
- Properties of shipbuilding materials



NAVAL ARCHITECTURE 2

This course explains how ships are designed in order to improve strength, maneuverability, and stability.

- Characteristics of strength and structure of ships
- Characteristics of ship stability
- Characteristics of ship resistance and powering
- Principles of maneuverability and ship control
- Types of ship hazards

MARINE ENGINEERING 1

This course provides basic knowledge of the key marine propulsion systems. These concepts aid understanding of the suitability of machinery, equipment, and systems for marine and offshore applications.

- Characteristics of marine propulsion systems
- Types of ship piping systems
- Types of propulsion auxiliary piping systems
- Types of machinery outfitting equipment

MARINE ENGINEERING 2

This course provides basic knowledge of marine engineering control and safety systems and typical hazards that one may expect to find on board. These concepts aid understanding of the suitability of equipment and systems for marine and offshore applications.

- Characteristics of boilers and pressure vessels
- Types of electrical systems and automation
- Types of safety systems
- Types of ship hazards

CURRICULUM DURATION: 11.5 HOURS

HAZARDOUS AREAS

Recognize how to conduct surveys in compliance with ABS classification requirements in hazardous areas on marine vessels and offshore units.

HAZARDOUS AREAS 1

This course provides an overview of classification for hazardous areas.

- Basics of hazardous areas
- Traditional method of classifying ships
- International (IEC) method of classifying ships and MODUs
- Information indicated on hazardous area drawings

HAZARDOUS AREAS 2

This course covers electrical equipment allowed in hazardous areas on ships, the techniques used to protect electrical equipment and the electrical equipment allowed in Zones 0, 1, and 2 on ships and offshore units.

- Traditional method applies to electrical equipment on ships
- Protection techniques are used to protect electrical equipment
- International (IEC) method applies to electrical equipment on ships and MODUs

HAZARDOUS AREAS 3

This course provides basic knowledge and additional instructions related to hazardous area equipment.

- Characteristics of flammable gases
- Important characteristics of the Booklet of Equipment in Hazardous Areas
- Important information related to certification and nameplates

CURRICULUM DURATION: 8 HOURS

NONDESTRUCTIVE EVALUATION

Learn the basic details of nondestructive evaluation and testing methods and principles.

NONDESTRUCTIVE TEST CERTIFICATION

This course will provide you with a basic knowledge of common characteristics, roles, and types of certification related to nondestructive testing (NDT).

- Characteristics of the NDT certification process
- Roles and responsibilities related to the certification process
- Types of NDT certifications

LIQUID PENETRANT TESTING

This course covers requirements for liquid penetrant testing.

- Types of liquid penetrant testing
- How to perform visible liquid penetrant test (fluorescent/non-fluorescent)
- How to perform fluorescent liquid penetrant test

MAGNETIC PARTICLE INSPECTION TESTING

This course covers requirements related to magnetic particle inspection testing.

- Theory of magnetic flux
- Characteristics of particle testing theory
- Characteristics of magnetic particle inspection tests
- Characteristics of stationary magnetic fluorescent particle inspection

ULTRASOUND INSPECTION TESTING

This course provides requirements for ultrasound inspection testing.

- Theory of ultrasound
- Characteristics of ultrasound: straight beam
- Characteristics of straight beam testing process
- Characteristics of ultrasound: shear wave (angle beam)
- Characteristics of shear wave testing process

RADIOGRAPHY INSPECTION

This course explains radiographic inspection.

- Theory of ionizing radiation
- Characteristics of ionizing radiation process
- Safe practices for radiography testing
- Characteristics of film radiography
- How to evaluate radiograph quality

CURRICULUM DURATION: 5.5 HOURS

BLUEPRINT READING AND INTERPRETATION

Learn the basic characteristics and requirements for reading and interpreting blueprints for marine construction drawings.

BLUEPRINT NOMENCLATURE

This course will provide you with a basic knowledge of drawing symbols and how to read blueprints.

- Line types, symbols, and abbreviations
- Symbols and abbreviations
- Blueprint nomenclature
- Shapes and dimensions
- Ship drawing conventions and notes

VESSEL STRUCTURES

This course will help you recognize vessel structures and provide you with the basic understanding needed to locate the structures in vessel drawings.

- Basic structural components
- Framing systems
- Special structures

HULL DESIGN DRAWINGS

This course covers hull design drawings that may be encountered during vessel construction. Hull design drawings define each structural component's size and shape, and show the connection of components to form a structural system.

- Arrangement drawings
- Detailed component drawings
- Calculations

MACHINERY DRAWINGS

The characteristics of the machinery drawings are introduced. The course features drawing examples for propulsion shafting and rudder system arrangement to highlight the main characteristics of machinery drawings.

- Basic design drawings
- Detailed design drawings
- Other drawings related to structural design

ELECTRICAL DRAWINGS

This course covers the characteristics of the electrical drawings for electrical machinery, equipment and systems. These drawings show the electrical circuits and the physical location for each system, as well as the total power requirement for the vessel.

- System diagram drawings
- Layout drawings
- Calculations

PIPING DRAWINGS

This course covers the characteristics of piping drawings. Divided into three main zones, piping drawings include the specifications and design parameters for piping systems.

- Fabrication
- Welding and testing
- Installation

OUTFITTING DRAWINGS

This course explains the characteristics of outfitting drawings so you will understand how outfitting equipment is assembled and operated. Outfitting equipment includes systems that are not shown on structural, machinery, piping, or electrical drawings.

- Arrangement location
- Detailed drawings:
  - Size and type
  - Model number
  - Dimensions
  - Material
  - Quantity
  - Itemized parts list

CURRICULUM DURATION: 18.5 HOURS

METALLURGY OF STEEL

Learn about crystalline structures, chemistry, and microstructures of steel and how the mechanical properties of steel can be manipulated through chemical composition and heat treatment.

CRYSTALLINE STRUCTURES AND CHEMISTRY

This course covers crystalline structures and the chemistry of steel.

- Crystalline structures
- Chemistry

MICROSTRUCTURES

This course explains steel microstructures.

- Microstructure characteristics
- Tempering time
- Grain size
- Effect on properties

HEAT TREATMENT

This course addresses different heat treatment methods for steel.

- Heat treatment methods
- Quenching
- Tempering
- Stress relief
- Hardenability

MECHANICAL PROPERTIES

This course covers the mechanical properties of steel.

- Mechanical testing
- Mechanical properties
- Ductility

CURRICULUM DURATION: 3.5 HOURS

MATERIALS TESTING

Learn about different ways of testing steel and recognize appropriate test methods and procedures.

TENSION TESTING

This course covers the purpose and requirements of tension tests, explains appropriate test procedures, and describes what is included as minimum content in a report.

- Test specimens
- Tension testing

IMPACT AND CTOD TESTING

This course covers the purpose and requirements of impact and CTOD testing, explains test methods and the meaning of their results, and describes how to accurately report results of impact and CTOD testing.

- Impact testing
- CTOD testing

CURRICULUM DURATION: 4 HOURS

FATIGUE AND BEND TESTING

This course covers the purpose and requirements of fatigue and bend testing, explains test methods and the meaning of their results, and describes what is included as minimum content in a fatigue or bend testing report.

- Fatigue testing
- Bend testing

HARDNESS TESTING

This course covers the purpose and requirements of hardness testing, explains test methods and the meaning of their results, and describes what is included as minimum content in a report.

- Hardness testing
- Brinell hardness testing
- Rockwell hardness testing
- Microhardness testing

OTHER TESTS

This document describes additional, less common tests that may be required by design specifications, like the through-thickness test, the drop-weight test (DWT), and the drop-weight tear test (DWTT).

CARBON STEELS

Become familiar with the chemistry and categorization of steel; the steel manufacturing process; ABS ordinary, higher strength, and special grade steels; non-ABS grade steels; and carbon steels used for pipes and tubes.

CHEMISTRY AND CATEGORIZATION

In this course, you will recall carbon steel chemistry and describe how carbon steel is categorized by oxygen content.

MANUFACTURING PROCESS

In this course, you will recall the carbon steel manufacturing process; describe the differences between the conditions of supply for steel products; and identify criteria used for steel mill qualification.

CURRICULUM DURATION: 5 HOURS

ORDINARY AND HIGHER STRENGTH STEELS

In this course, you will identify common steel product forms; describe ABS steel grades and their applications; and recall surveyor verification responsibilities.

ABS SPECIAL GRADE STEELS

In this course, you will recall the properties of ABS special grade carbon steels; describe tests specific to ABS special grade steels; and identify how ABS special grade steels are marked.

NON-ABS GRADE STEELS

In this course, you will describe non-ABS grade steels' characteristics and identify requirements for acceptance of non-ABS grade steels, specifically the production process, testing, and chemistry requirements.

PIPES, TUBES, AND TUBULAR STRUCTURES

In this course, you will recall the characteristics and requirements for carbon steel pipes, tubes, and tubular structures used in marine vessels and offshore installations.

STEEL CASTINGS

Describe the characteristics of steel hull and machinery castings; identify requirements for examination, repairs, and marking of castings; and recognize unique characteristics of ductile and gray iron castings.

STEEL HULL AND MACHINERY CASTINGS

In this course, you will define casting terminology and processes, recall the chemical composition and mechanical properties of steel used in hull and machinery casting, and identify steel grades used for casting hull and machinery components.

- Casting process
- Mold preparation
- Chemical composition

EXAMINATION, REPAIRS, AND MARKING

In this course, you will explain the requirements for inspection, repairs, and marking of hull and machinery castings and identify the information required to certify hull and machinery castings.

- Visual and nondestructive inspection
- Minor and major defects

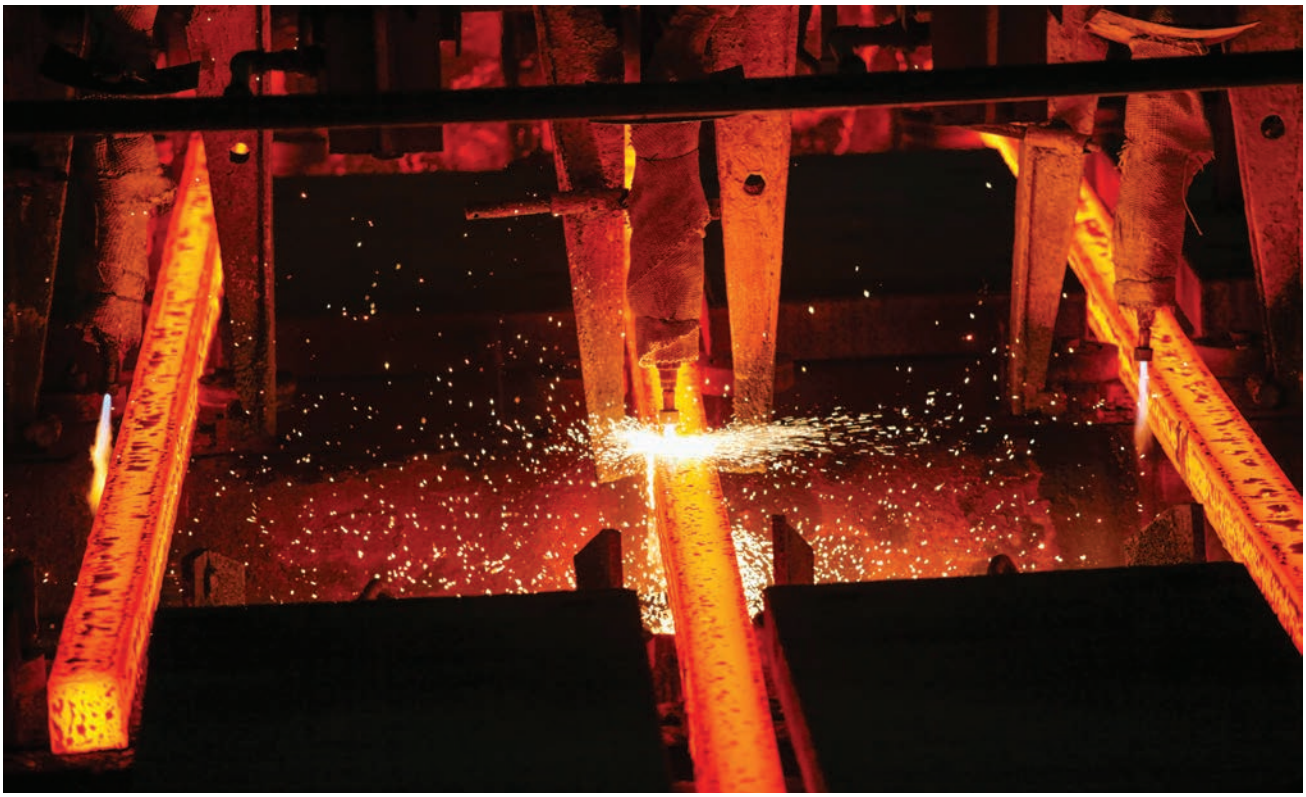
DUCTILE AND GRAY IRON CASTINGS

In this course, you will recall the characteristics of ductile, or nodular, iron and the characteristics of gray iron castings.

- Chemical properties
- Mechanical tests
- Heat treatment
- Examination

CURRICULUM DURATION: 2.5 HOURS

STEEL FORGINGS



Recall the terminology and methods of carbon steel forging; identify types of forging and their causes; recognize the material characteristics of forgings; and describe the requirements of alloy steel machinery forgings.

CARBON STEEL FORGINGS

In this course, you will recall forging terminology and methods, identify forging grades, and describe forging heat treatments.

- Forging characteristics
- Types of hot forging

FORGING DEFECTS

In this course, you will define seams and other forging defects.

MATERIAL CHARACTERISTICS OF FORGINGS

In this course, you will recall the material characteristics of forgings and identify the testing, inspection, marking, and certification requirements for forgings.

- Chemical composition
- Specimen identification
- Tensile and hardness properties
- Acceptance requirements and criteria

ALLOY STEEL MACHINERY FORGINGS

In this course, you will recall the requirements for alloy steel machinery forgings.

- Machinery forgings
- Forging manufacturing
- Heat treatment requirements

CURRICULUM DURATION: 3.5 HOURS

NONMETALLIC MATERIALS

Gain insight into the properties and characteristics of two non-metallic materials used in the marine and offshore industry, fiber-reinforced plastics (FRP) and glass, and how ABS Rules relate to these.

INTRODUCTION TO NONMETALLIC MATERIALS

This course explains the applications of nonmetallic materials in the marine and offshore industries and describes the characteristics of thermosetting and thermoplastic polymers.

- Nonmetallic material applications
- Types of polymers

LAMINATE COMPOSITES FROM FIBER-REINFORCED PLASTICS

This course describes single skin and sandwich laminates, including composition and properties.

- FRP laminates
- Mechanical properties

LAMINATE COMPONENTS

This course covers the characteristics of laminate components.

- Laminate components
- Core materials

LAMINATE PROPERTIES AND TESTS

This course describes the properties of laminates, such as strength or stiffness, impact, fatigue, and heat resistance, and identifies tests to assess laminate properties.

- Laminate testing
- Fatigue and heat resistance

GLASS FOR MARINE APPLICATIONS

This course covers the types and physical properties of glass suitable for use in glazing for marine applications.

- Types of glass
- Glass treatments

CURRICULUM DURATION: 4.5 HOURS

QUALIFIED WELDING INSPECTOR

Learn the basic details of welding metallurgy, design, visual inspection, and welding processes.

MATERIAL TYPES AND CASTING DISCONTINUITIES

This course covers characteristics, types of discontinuities, and ABS requirements related to steel, castings, and forgings.

- Characteristics of steel, castings, and forgings
- Types of discontinuities
- ABS requirements for steel, castings, and forgings

MATERIAL PROPERTIES, CHARACTERISTICS, AND TESTS

This course provides information about materials properties and testing.

- Material property testing:
  - Tensile
  - Hardness
- Weld soundness testing:
  - Bend
  - Fillet break
  - Nick break
  - Toughness
  - Fatigue

BASIC WELDING METALLURGY

This course explains the principles of welding metallurgy, including grain structure, cooling rates, and heat treatment.

- Grain structure of steel
- Grain size and properties
- Cooling rates and structural properties
- Pre-heating and cooling
- Thermal stress relief
- Heat treatment methods

WELD JOINT GEOMETRY AND WELDING TERMINOLOGY

This course covers the types of weld joints and explains how parts are aligned before, during, and after welding.

- Overview of basic weld joints
- Weld joint parts and preparation
- Explanation of types of welds:
  - Groove
  - Fillet
  - Spot/Seam
  - Plug/Slot
  - Surfacing
  - Back
  - Backing
- Weld application terminology:

WELD SYMBOL TYPES AND TEST SYMBOL TYPES

This course explains how to read a welding plan and identify weld and test symbol types.

- Weld symbols
- Test symbols
- Supplementary symbols

WELDING PROCESSES

This course covers a variety of welding processes.

- Shielded metal arc welding
- Gas metal arc welding
- Flux core arc welding
- Submerged arc welding
- Gas tungsten arc welding
- Joint preparation
- Brazing and cutting processes

WELDING DISCONTINUITIES AND REPAIRS

This course explains welding discontinuities and repairs.

- Surface discontinuities
- Surface discontinuity weld repairs
- Weld root discontinuities
- Root discontinuity weld repairs
- Internal discontinuities
- Internal discontinuity weld repairs
- Cracking and cracking repairs

WELDING PROCEDURE SPECIFICATION (WPS)

This video examines the information found on a WPS document. The document used in this video is a standard from the American Society of Mechanical Engineers (ASME).

CURRICULUM DURATION: 16 HOURS

WELDING PROCEDURE QUALIFICATION

This course covers the qualified welding procedure based on ABS criteria.

- Welding procedure qualification
- Welder qualification documents
- Required tests to be performed, as necessary

WELDER PERFORMANCE QUALIFICATION

This course explains the ABS procedure for welder performance qualification.

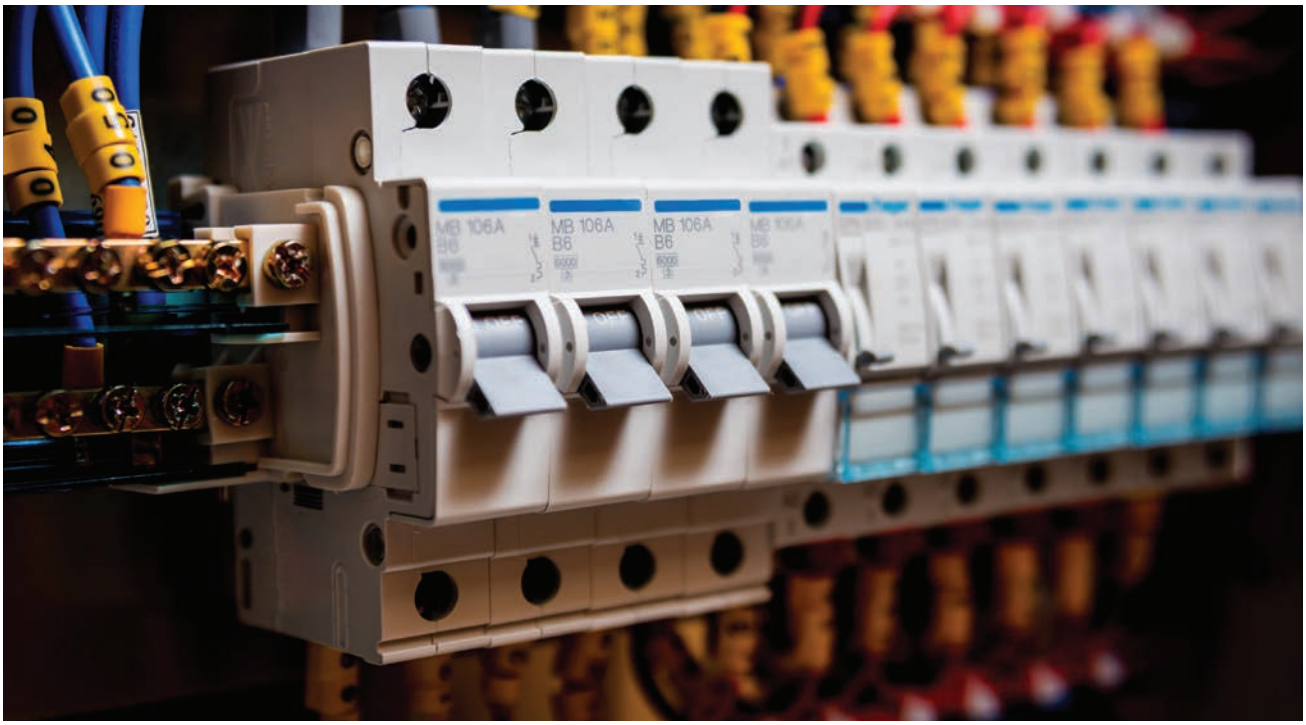
- Welder performance qualification
- Welder qualification assessment
- Monitoring production welding

WELDING STRESS CONTROL

This course explains welding stress control..

- Heating and cooling effects on weld stresses
- Methods of controlling welding stress
- Weld stress correction techniques
- Welding sequence best practices

ELECTRICAL SYSTEMS



Recognize electrical concepts, systems and equipment, and their interdependencies in relation to conducting surveys in compliance with ABS classification requirements for marine vessels and offshore units.

BASIC ELECTRICAL THEORY AND PRINCIPLES

In this course, you will be able to define voltage, current, and resistance in a circuit; describe the role of Ohm's Law in determining the voltage, current, and resistance in a circuit; explain electricity power and power factor; describe the harmful effect of harmonics in a power system installation; and explain the purpose of synchronizing and load sharing among generators.

APPLIED ELECTRICAL CONCEPTS

In this course, you will use Rule requirements and drawings to verify the number and capacity of generators, identify drawings needed to verify the number and capacity of generators, explain the effect of transient voltage variation on power systems, explain the purpose of one-line diagram drawings during the survey, and describe the power distribution arrangement.

LOAD ANALYSIS

In the course, you will describe load analysis and recognize how to determine the number and capacity of generators needed.

LOADS, RATING, AND EARTHING

In this course, you will recognize types of loads, identify IP ratings for equipment in specific locations, and explain the purpose of earthing methods.

SHORT CIRCUITS

In this course, you will recognize the effects of short circuits and identify requirements to mitigate the occurrence of short circuits.

PROTECTIVE DEVICES

In this course, you will identify protective devices in power systems.

TRANSFORMERS

In this course, you will identify different types of transformers and recognize applicable ABS Rule requirements.

ROTATING MACHINES: INSTALLATION, TESTING, AND PROTECTION

Keep your facts straight. In this course, you will describe installation requirements, describe protective measures for rotating machines, and identify shipboard testing requirements.

ROTATING MACHINES: FACTORY TESTS

In this course, you will identify factory testing requirements and recognize different types of factory tests.

ROTATING MACHINES CERTIFICATION

In this course, you will recognize the applicability of the Rules and the certification process for rotating machines.

SWITCHBOARDS AND SHORE CONNECTIONS

In this course, you will explain the switchboard certification process, recognize switchboards and requirements, and identify shore connection requirements.

SWITCHBOARD: CONSTRUCTION, COMPONENTS, AND INSTALLATION

In this course, you will identify switchboard construction, components, and installation requirements; recognize creepage and clearance in switchboard arrangements; and recognize switchboard testing requirements.

MOTOR CONTROL CENTERS AND MOTOR CONTROLLERS

In this course, you will recognize the motor control center and the motor controller's installation requirements.

ELECTRICAL CABLE: TESTING AND CERTIFICATION REQUIREMENTS

In this course, you will recognize cable testing and certification requirements.

ELECTRICAL CABLE CONSTRUCTION

In this course, you will recognize the Rule requirements for cable construction.

CABLE INSTALLATIONS I

In this course, you will identify applicable Rule requirements and recognize potential installation issues during the survey.

CABLE INSTALLATIONS II

In this course, you will recognize cable installation requirements.

EMERGENCY GENERATOR AND LIGHTING

In this course, you will define a blackout situation and a dead ship condition, identify emergency sources of power, recognize lighting and emergency lighting systems, and describe applicable ABS Rule requirements.

BATTERY SYSTEM

In this course, you will recognize batteries as a transitional source of power, identify different battery types, and explain applicable ABS Rule requirements.

CURRICULUM DURATION: 14 HOURS

SOLAS ELECTRICAL SYSTEMS

Learn the purpose of the navigation system, fire detection, and alarm systems, and recognize applicable regulatory requirements.

NAVIGATION SYSTEMS

In this course, you will explain the purpose of the navigation system and recognize applicable regulatory requirements.

- Navigation equipment
- Maneuvering equipment

FIRE DETECTION AND ALARM SYSTEMS

In this course, you will identify fire detection and alarm systems and recognize applicable regulatory requirements.

- Alarms and fixed fire detection system
- Fixed fire detection system components

CURRICULUM DURATION: 1.5 HOURS

AUTOMATION SYSTEMS

Recognize the purpose of monitoring and communication systems, specifications for cable installations, and applicable ABS Rule requirements.

MONITORING AND ALARM, SLOWDOWN, AND SHUTDOWN SYSTEMS

In this course, you will recall the different alarm systems for engine operations, recognize different functions in a safety system, identify different alarm systems apart from engine operations, and recognize applicable ABS Rule requirements.

COMMUNICATION SYSTEMS

Effective communication systems are critical on a vessel. In this course, you will identify communication system types and recognize applicable ABS Rule requirements.

CABLE INSTALLATIONS I

In this course, you will identify the different components that make up a computer-based system and define the different system categories for computer-based systems.

CABLE INSTALLATIONS II

In this course, you will recognize certification and test requirements for hardware and ship equipment and identify the software development life cycle phases and associated ABS Rule requirements.

CURRICULUM DURATION: 2.75 HOURS

PIPING SYSTEMS: GENERAL

Learn the basic characteristics of piping systems and their components on marine vessels and offshore units, as well as ABS plan review requirements for piping systems.

GENERAL PIPING

This course provides basic knowledge about piping terminology and design.

- Theory of piping systems
- Pipe classes
- Dimensioning of pipes and tubes

PIPING SYSTEM COMPONENTS

This course covers individual piping system components, their characteristics and their ratings.

- Main piping components
- Joining
- Other components
- Ratings

BASIC PIPING DESIGN REQUIREMENTS

This course covers the basic piping design requirements in accordance to ABS Rules.

- Basic piping design requirements related to:
  - Overpressure
  - Instrumentation
  - Metallic pipe design
  - Plastic pipe design
- Typical failures associated with piping systems

PIPING INSTALLATION REQUIREMENTS

This course covers the details and requirements of piping installation. The verification of installation details is fundamental to the safety of piping systems.

- General installation requirements
- Bulkhead, deck, and tank-top penetration
- Collision bulkhead penetration
- Overboard connection
- Control of static electricity
- Leakage containment arrangement
- Piping insulation
- Progressive flooding

PIPING MATERIALS

This course covers the use of piping materials other than mild steel. This creates unique hazards that need to be specifically addressed.

- Aluminum piping
- Stainless steel piping
- Copper alloy piping
- Multi-core tubing

CURRICULUM DURATION: 13.5 HOURS

PORT STATE CONTROL

Understand the purpose and impact of Port State Control. Recognize deficiencies and mitigation opportunities to reduce detentions.

INTRODUCTION TO PORT STATE CONTROL

In this course, you will learn what ABS is doing to reduce Port State Control detentions and identify communication opportunities for reducing these detentions.

EXTERNAL HULL AND STATUTORY DOCUMENT DEFICIENCIES

In this course, you will be to recognize deficiencies of the external hull and statutory certificates, documents, and records that may lead to detentions.

NAVIGATION BRIDGE AND HULL DEFICIENCIES

In this course, you will discover common deficiencies found with the bridge's navigation and communication equipment, superstructure, and main decks.

MACHINERY SPACE DEFICIENCIES

This course explores common machinery space deficiencies including emergency generators, steering gears, and engines.

LIFESAVING APPLIANCES, VENTILATION SYSTEMS, AND FIREFIGHTING EQUIPMENT DEFICIENCIES

This course covers common deficiencies for lifesaving appliances, ventilation systems, and firefighting equipment.

POST-DETENTION

This course explains how ABS handles detentions including communication points between ABS, flag Administrations, owners, and Port State Control.

CURRICULUM DURATION: 6.5 HOURS

THICKNESS MEASUREMENTS FOR VESSELS

Understand the basic characteristics and ABS requirements of thickness measurements and how to evaluate and monitor thickness measurements on marine vessels.

THICKNESS MEASUREMENT CONCEPTS AND TOOLS

This course covers common terminology, evaluation and instrument calibration.

- Concept of ultrasonic thickness measurements
- Common terminology associated with thickness measurements
- Characteristics of evaluations
- How to calibrate ultrasonic testing instruments

GENERAL THICKNESS MEASUREMENT PROCESS

This course provides the basic requirements for monitoring, evaluating, and reporting thickness measurements.

- Important concepts for thickness measurements
- How to monitor thickness measurements
- How to evaluate thickness measurement report
- How to report thickness measurement results

SUBSTANTIAL CORROSION

This course covers the requirements for substantial corrosion found when taking thickness measurements.

- How to conduct an expanded scope of survey
- When to obtain additional measurements
- Process of documenting substantial corrosion

VESSEL THICKNESS MEASUREMENTS

This course provides the ABS criteria for thickness measurement for vessels.

- Enhanced Survey Program (ESP) notation
- Enhanced Survey Dry Cargo (ESDC) notation
- Vessels without ESP or ESDC notations

CURRICULUM DURATION: 6.5 HOURS

MODU OVERVIEW

Recognize the basic characteristics and requirements related to mobile offshore drilling units (MODUs).

INTRODUCTION TO MODUS

This course provides basic knowledge of MODUs.

- Typical characteristics and MODU types
- Classification and certification processes, plan approval process and MODU notations
- General aspects of drilling systems
- Applicable classification and statutory requirements

SELF-ELEVATING DRILLING UNITS

This course provides knowledge specific to jackups or SEDUs, including design and operational characteristics and requirements regarding structures, stability, machinery, and safety.

- Legs, footings, and hull
- Jacking and holding, skidding, and the cantilever
- Afloat and elevated stability
- Jacking gear and skidding systems
- Raw water and preload systems
- Lifesaving appliances and access to the water line

SURFACE-TYPE DRILLING UNITS

This course provides knowledge specific to surface-type drilling units, including design and modes of operation, and aspects of drillship and drill barge structures, machinery systems, and stationkeeping.

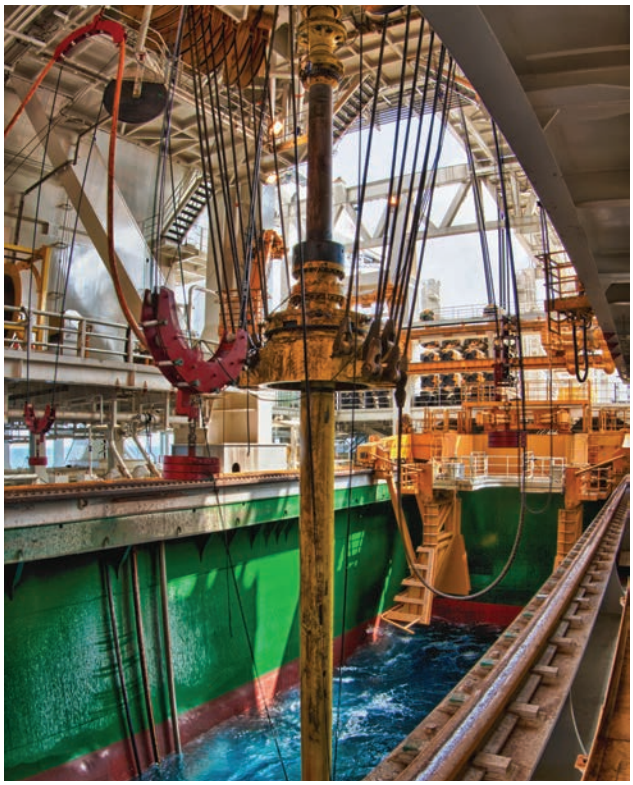
- Modes of operation
- Moonpool
- Machinery systems
- Stationkeeping

COLUMN-STABILIZED DRILLING UNITS

This course provides knowledge specific to semisubmersibles or CSDUs, including design and operational characteristics and requirements regarding structures, stability, machinery, and safety.

- Loads and other structural issues considered in global structural analysis
- Redundancy analysis
- Factors that influence stability analysis
- Damage stability scenario types
- Ballast systems
- Design angle of inclination for machinery
- Mooring and dynamic positioning
- Launching clearance requirements for lifesaving appliances

CURRICULUM DURATION: 3 HOURS



BASIC DRILLING AND WELL CONTROL

Gain foundational knowledge about the complete fluid pressure control system and learn how the related systems interact and depend on each other. Enhance your knowledge of the geology, processes, and risks involved in the location and exploitation of offshore oil and gas reservoirs.

BASIC PETROLEUM GEOLOGY AND EXPLORATION

This course explains the fundamentals of petroleum geology and oil exploration.

- Characteristics of hydrocarbons
- Basic geology of the formation of hydrocarbon reservoirs
- How geophysics is used to locate a hydrocarbon reservoir
- Potential risks involved in exploratory drilling

BASIC OFFSHORE DRILLING

This course covers the tools, equipment, and processes used to drill and complete an offshore well.

- How an oil well is drilled
- Steps of the drilling process
- Functions of major components of drilling units

BASIC OFFSHORE WELL CONSTRUCTION

This course includes the processes and equipment used to construct an offshore well.

- How an oil well is drilled
- Steps of the drilling process
- Functions of major components of drilling units

BASIC OFFSHORE WELL COMPLETION

This course explains the processes and equipment used to complete an offshore well.

- How to define well completion
- How a well is brought into production

BASIC OFFSHORE WELL PRESSURE CONTROL

This course presents the fundamental principles of well control and describe the causes and characteristics of well control events.

- Fundamental principles of well control
- Function of drilling fluids in well control
- Causes and characteristics of well control events

CURRICULUM DURATION: 5.25 HOURS

ONBOARD MUD CIRCULATION SYSTEMS

This course explains mud circulation and conditioning systems on board MODUs.

- Key equipment
- Delivery and mixing systems
- Mud circulation system
- Mud conditioning system
- Subsea mud circulation

SECONDARY WELL CONTROL

This course provides knowledge about required secondary well control actions when primary well control is no longer possible.

- Overview of primary and secondary well control
- Securing the well
- Restoring primary well control
- Subsea drilling units

THICKNESS MEASUREMENTS FOR OFFSHORE UNITS

Understand the basic characteristics and ABS requirements of thickness measurements, and how to evaluate and monitor thickness measurements on MODUs and other offshore units.

THICKNESS MEASUREMENT CONCEPTS AND TOOLS

This course covers common terminology, evaluation, and instrument calibration.

- Concept of ultrasonic thickness measurements
- Common terminology associated with thickness measurements
- Characteristics of evaluations
- How to calibrate ultrasonic testing instruments

GENERAL THICKNESS MEASUREMENT PROCESS

This course provides the basic requirements for monitoring, evaluating, and reporting thickness measurements.

- Important concepts for thickness measurements
- How to monitor thickness measurements
- How to evaluate thickness measurement report
- How to report thickness measurement results

SUBSTANTIAL CORROSION

This course covers the requirements for substantial corrosion found when taking thickness measurements.

- How to conduct an expanded scope of survey
- When to obtain additional measurements
- Process of documenting substantial corrosion

OFFSHORE UNIT THICKNESS MEASUREMENTS

This course provides basic requirements related to thickness measurements for offshore units.

- Mobile offshore drilling units
- Floating production installations
- Offshore fixed platform installations
- Single point moorings

CURRICULUM DURATION: 6.5 HOURS

MODU ELECTRICAL SYSTEMS

Recognize the basic characteristics and requirements of electrical systems and equipment specific for MODUs.

MODU ELECTRICAL SYSTEMS 1

This course provides basic knowledge of types and general requirements of MODU electrical systems and equipment.

- Types of MODU electrical systems and equipment
- General MODU electrical requirements
- Hazardous areas classification
- Requirements related to main and emergency source of power

MODU ELECTRICAL SYSTEMS 2

This course covers the classification and statutory requirements for major electrical systems on MODUs. Typical failures related to MODU electrical systems and equipment are explained.

- Ballast system power and control systems
- Jacking power and control systems
- Electrical equipment in hazardous areas
- Equipment installation and arrangement
- Emergency shutdown (ESD) arrangements
- Fire and gas detection systems
- Emergency control stations
- Harmonics analysis

CURRICULUM DURATION: 4 HOURS

MODU PIPING SYSTEMS

Understand the basic characteristics and requirements of piping systems specific for MODUs.

MODU PIPING SYSTEMS 1

This course provides basic knowledge of types and general requirements of MODU piping systems.

- Types of marine and utility piping systems
- General MODU piping requirements
- Requirements related to tank vents, sounding pipes, and tank overflows

MODU PIPING SYSTEMS 2

This course covers the requirements related to major marine and utility piping systems for MODUs.

- Bilge systems
- Ballast systems
- Fuel systems
- Lubrication oil systems

MODU PIPING SYSTEMS 3

This course covers the requirements related to other marine and utility piping systems for MODUs with an explanation of industrial piping systems related to drilling operations.

- Engine exhaust systems
- Engine starting air systems
- Cooling-water systems for internal combustion engines
- Helideck refueling systems
- Hydraulic systems
- Pre-load system
- Raw water system
- Well testing
- Leak detection system
- Housekeeping bilge system
- Low-pressure mud (LP mud) system
- High-pressure mud (HP mud) system
- Tensioner system
- Bulk air system
- Base oil system
- Drill water system
- Choke and kill systems
- High-pressure cement system
- Blowout preventer (BOP) hydraulic systems

CURRICULUM DURATION: 6 HOURS

OFFSHORE EMERGENCY SHUTDOWN (ESD) SYSTEMS

Learn the purpose of the ESD system, how the system operates, the components involved, conditions that trigger the system, how other systems are affected, and how to verify the effectiveness of the ESD system during a survey.

EMERGENCY SHUTDOWN SYSTEMS: PURPOSE

This course explains the purpose of ESD systems.

- Prevent or minimize unwanted release of hydrocarbons from industrial systems
- Mitigate the consequences of such release

HOW EMERGENCY SHUTDOWN SYSTEMS OPERATE

This course covers how ESD systems operate.

- Actions of emergency shutdown systems
- Multiple levels of emergency shutdown for offshore units

EMERGENCY SHUTDOWN SYSTEMS: COMPONENTS

This course covers ESD system components and their functions.

- Automatic and manual activation
- Shutdown actuators
- Signal transfer lines
- Power supply

EMERGENCY SHUTDOWN SYSTEMS: TRIGGER CONDITIONS

This course shows how to recognize major hazards for offshore units that require ESD system activation.

- System activation
- Gas, hydrogen sulfide, and fire detection

SYSTEMS AND EQUIPMENT AFFECTED BY EMERGENCY SHUTDOWN SYSTEM

This course explains how the ESD system interacts with other systems and equipment.

- Main electrical power
- Emergency generator power
- Ventilation systems
- Dynamic positioning and flare systems
- Import and export systems
- Drilling and production systems

VERIFY EFFECTIVE OPERATION OF EMERGENCY SHUTDOWN SYSTEMS

This course describes the actions needed to verify the correct operation of an ESD system.

- Record review and confirmatory tests
- Operating logic

CURRICULUM DURATION: 3 HOURS

OFFSHORE PRODUCTION INSTALLATIONS

Learn about offshore production installation units, class and statutory regulations, mooring systems, oil and gas production, import and export system components, and subsea production systems.

OFFSHORE PRODUCTION INSTALLATIONS: INTRODUCTION

This course explains the offshore production phase and describes the function and types of offshore production installations.

CLASSIFICATION AND STATUTORY REGULATIONS

This course describes the classification process and classification boundaries for offshore production installations and explains the application of statutory regulations.

MOORING SYSTEMS

This course covers the functions and types of position mooring systems.

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MOORING LINE COMPONENTS AND FOUNDATIONS

This course identifies position mooring line components, explains catenary mooring and taut leg mooring configurations, and discusses different mooring line foundations.

MOORING EQUIPMENT, TURRETS, AND BUOYS

This course describes mooring equipment on board a production unit and identifies types of turrets and buoys.

OIL AND GAS PRODUCTION

This course explains the function of the oil and gas process plant; identifies the operation and components of the separation, water treatment, and gas treatment and compression phases; and discusses the difference between process support systems and marine support systems.

LNG PRODUCTION

This course identifies the operation and components of the gas treatment, natural gas liquid recovery and treatment, and liquefied natural gas (LNG) liquefaction phases of an LNG production and process plant.

IMPORT AND EXPORT SYSTEMS

This course explains the function and components of the import system and explains the function and methods of the export system.

SUBSEA PRODUCTION SYSTEMS

This course explains the function and types of production risers, explains the function and characteristics of subsea pipelines, and discusses the purpose and main modules of the subsea production systems.

CURRICULUM DURATION: 6.25 HOURS

MULTI-CABLE TRANSIT SYSTEMS

Learn how to identify the different types of MCT systems and how to apply them; understand the surveyor's role and responsibilities during installation, repair, and maintenance; and recognize potential issues with MCT systems.

MULTI-CABLE TRANSIT SYSTEMS: SYSTEM TYPES

This course covers a summary of commonly applied MCT systems available on the market and may not include all available products with varied ratings.

- Block transit systems
- Expandable and compound transit systems
- Poured transit systems
- Rubber plug transit systems
- Dry hardening putty transit systems

MULTI-CABLE TRANSIT SYSTEMS: INSTALLATIONS, REPAIRS, AND MAINTENANCE

This course covers the surveyor's role and responsibilities during installation, repairs, and maintenance of MCT systems, and explains how to verify the proper installation.

- Surveyor's role
- Tasks during contruction
- Tasks after construction
- Verifying proper installation

MULTI-CABLE TRANSIT SYSTEMS: MILLIONAIRE CHALLENGE

Are you up to the challenge? Test your ability to recognize potential issues with multi-cable transit systems.

CURRICULUM DURATION: 1.5 HOURS

SHAFT ALIGNMENT

Each course builds and seamlessly guides learners through the shaft alignment process with real scenarios and exercises.

SHAFT ALIGNMENT: INTRODUCTION

This introduction explains what shaft alignment means, how to prepare for surveys, the relevant procedures for the shaft alignment process, and the various methods that are employed.

- Fundamentals
- Survey Preparation
- Procedures
- Sighting Methods

SHAFT ALIGNMENT: DRYDOCK

While each shipyard may follow a different shaft alignment process, this curriculum explains a typical sequence of the procedural steps in drydock or on a slipway.

- Pre-Sighting and Stern Tube Bore Sighting
- Final Sighting of the Stern Tube
- Tail Shaft Clearance Measurements
- Sag and Gap Measurements

SHAFT ALIGNMENT: AFLOAT

With the vessel in the afloat condition, bearing reaction measurements are the first indication that shaft alignment is in accordance with reviewed calculations.

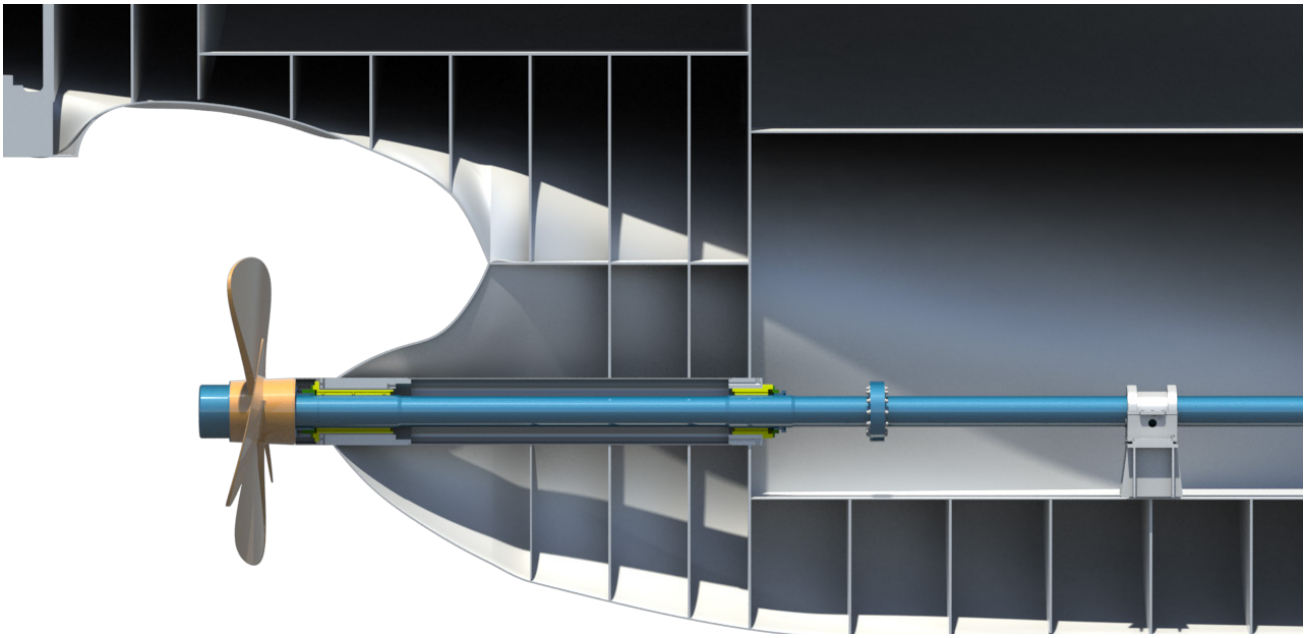
- Bearing Reaction Measurements: Part 1
- Bearing Reaction Measurements: Part 2
- Bearing Reaction Measurements: Part 3
- Main Engine Installation and Gear Tooth Contact

SHAFT ALIGNMENT: SEA TRIALS

Sea trial testing is the final stage of the shaft alignment process. All shafting and components are installed, and the functionality of the entire system can be tested and confirmed.

- Sea Trials
- Sea Trial Scenario 1
- Sea Trial Scenario 2

CURRICULUM DURATION: 20.5 HOURS



CYBERSECURITY FOR AUDITORS

With the IMO's recent requirement for cybersecurity to be addressed in a company's safety management system, internal and external auditors need to know what to look for to verify compliance.

INTRODUCTION TO CYBERSECURITY

Understand the importance of cybersecurity and know why cybersecurity is addressed in the safety management system.

- Importance of cybersecurity
- Technologies and cyber risks
- Mitigating risk
- Cyber risk management

CYBERSECURITY BASICS

Learn the difference between information technology and operational technology, and recognize systems that are vulnerable to cyber threats.

- Information technology
- Operational technology
- System integration
- Critical system onboard networks
- Critical systems
- Individual and integrated systems

CYBER RISK MANAGEMENT: APPROACH

Know the approach for cyber risk management and associated risk assessment methodologies.

- IMO framework
- Identifying cyber risks
- Cyber risk management
- Calculating risk

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CYBER RISK MANAGEMENT: THREATS

Understand the concept of cyber threats for the maritime industry and recognize the various types of cyber threats.

- Cyber threats: Internal and external
- Company threat examples
- Ship threat examples
- Subcontractors, vendors, and third parties
- Types of threats: Unintentional and intentional

CYBER RISK MANAGEMENT: VULNERABILITIES

Recognize the concept of cyber vulnerabilities for the maritime industry, both on oard and ship-to-shore.

- Cyber vulnerabilities
- Human factor and human error
- Network connections and routers
- Remote access examples
- Vulnerabilities on board

CYBER RISK MANAGEMENT: CONSEQUENCES

Explain the concept of consequences within the cyber risk management cycle.

- Consequences overview
- Cyber risk management
- System protection
- Operational consequences
- Physical consequences
- Severity levels and actions

CYBER RISK MANAGEMENT: THREATS, VULNERABILITIES, AND CONSEQUENCES ACTIVITY

In this activity, learners will identify potential cyber threats, vulnerabilities, and consequences about a cyber event.

- Scenario
- Threats, vulnerabilities, and consequences
- Auditor actions

CYBER RISK MANAGEMENT: CONTROL MEASURES

Explain the concept of cybersecurity control measures for the maritime industry and recognize appropriate control measures.

- Control measures overview
- Physical control measures
- Logical control measures
- Implementing control measures

CYBER RISK MANAGEMENT AND THE SMS

Identify the ISM Code elements that are applicable to cybersecurity and develop questions to gather objective evidence for compliance.

- Safety management system
- Cyber risk management framework

CURRICULUM DURATION: 6 HOURS

DATA NETWORKS AND CYBER RESILIENCE

Navigate the waters of data networks and cyber resilience. With cyber threats always on the horizon, this curriculum provides participants with details about how to address cybersecurity-related issues on ships.

NETWORK BASICS

This course provides an overview of the foundational topics participants involved in network assessment and cyber resilience should know.

- Integrating information technology and operational technology
- Types of networks and terminology
- Wireless networks and access points
- Virtualization and cloud technologies
- Onboard cyber risks

CURRICULUM DURATION: 3 HOURS

CYBER RESILIENCE FOR SHIPS

This course explains measures to reduce cyber incidents targeted toward a ship's operational cyber systems. Participants will review documents, standards, and requirements for cyber resilience as outlined by the ABS Rules and IACS Unified Requirement E26, Cyber Resilience of Ships.

- Known vulnerabilities
- Structure of cyber resilience requirements
- Performance, evaluation, and testing
- Risk assessment for requirement exclusion

CYBER RESILIENCE FOR ONBOARD SYSTEMS AND EQUIPMENT

This course discusses measures to lessen the likelihood of a cyber incident involving ship equipment and systems. Participants will review documents, standards, and requirements for cyber resilience as outlined by the ABS Rules and IACS Unified Requirement E27, Cyber Resilience of Onboard Systems and Equipment.

- Known vulnerabilities
- Essential system availability
- Required supporting documentation

DECARBONIZATION

Decarbonization challenges present questions for all stakeholders, regulators, ship owners, vendors, and investors. Understanding decarbonization's impact, drivers, and implications are of utmost importance to the shipping industry.

MARITIME DECARBONIZATION

This course focuses on the decarbonization drivers motivated by IMO regulations, financial institutions, multinational charterers, and market-based measures from local and regional authorities that support new vessel construction and retrofits.

- Regulatory Impact
- Beyond Regulations
- Pathways to Sustainable Shipping
- Decarbonization Drivers

DECARBONIZATION SOLUTIONS

In this course, you will explore the benefits of decarbonization, including different strategies for reducing emissions, and some of the challenges of low-carbon shipping.

- Alternative Fuels and Energy Sources
- Technology Improvements
- Operational Efficiencies
- Carbon-Reducing Solutions

SUSTAINABILITY AT ABS

This course covers ABS sustainability services and solutions, including compliance portals and analytical tools, to support clients with their decarbonization journeys.

- Sustainable Development
- Carbon Intensity Reduction
- Digital Monitoring
- Carbon Accounting

CURRICULUM DURATION: 3 HOURS

STEEL VESSEL STRUCTURES

Gain the basic knowledge necessary to correctly apply the ABS structural Rule requirements.

BASIC REQUIREMENTS: INTRODUCTION

This course introduces the Steel Vessel Basic Requirements curriculum.

RELEVANT CLASS NOTATIONS

This course examines the basic class notations and symbols related to steel vessel structures and the importance of these notations and symbols in defining applicable requirements.

MAIN DIMENSIONS

This course provides definitions of the most important main dimensions for a vessel.

HULL STRUCTURE MATERIALS

This course covers basic characteristics of structural materials applied in the Rules for the verification of their adequacy to the intended service.

WELDING AND COATING REQUIREMENTS

This course addresses basic knowledge related to welding and coating.

HULL GIRDER LONGITUDINAL STRENGTH

This course explains the concepts related to hull girder longitudinal strength.

SECTION MODULUS AND MOMENT OF INERTIA

This course briefly addresses the basic concepts related to these two structural characteristics of the hull.

SCANTLING CALCULATIONS

This course addresses methods used to determine the correct scantlings and bases of Rule scantling formulas.

BASIC REQUIREMENTS: CLOSING

This course closes the Steel Vessel Basic Requirements curriculum.

MAIN HULL STRUCTURE OVERVIEW

This course introduces the Main Hull Structure Overview curriculum. .

SHELL PLATING

Learn more about side and bottom plating and related specific details, including shape, capacity, and hydrodynamic properties.

DECK PLATING: TYPES OF DECKS

In this course, you will define the types of decks and their basic characteristics.

DECK PLATING: DECK AND INNER BOTTOM REQUIREMENTS

Learn more about the characteristics and requirements for deck plating and the inner bottom plating.

BOTTOM STRUCTURES

This course covers requirements related to the structural members of a typical double-bottom arrangement, including structural details of the fore end.

SIDE STRUCTURES

Strengthen your knowledge by learning more about deck structural elements, including pillars and their requirements.

DECK STRUCTURES

Learn more about the necessary hatch openings for loading and unloading cargo.

BULKHEAD TYPES

Learn about the different types of bulkheads. This course covers bulkhead types and their basic characteristics.

BULKHEAD CONSTRUCTION AND ARRANGEMENTS

This course covers the structural construction and arrangements of bulkheads, including related requirements.

MAIN HULL STRUCTURE OVERVIEW: CLOSING

This course closes the Main Hull Structure Overview curriculum.

SPECIFIC AND MISCELLANEOUS REQUIREMENTS: INTRODUCTION

This course introduces the Specific and Miscellaneous Requirements curriculum.

OPENINGS AND PENETRATIONS

Open the door to learn about openings, arrangements, and penetrations.

SUPER STRUCTURES AND DECKHOUSES

Extend your knowledge of definitions, requirements, and structural elements related to superstructures and deckhouses.

OPENING PROTECTION AND SAFETY FEATURES

Learn about regulations and requirements related to opening protection and safety features on weather decks.

MISCELLANEOUS STRUCTURE REQUIREMENTS

Build your foundation of machinery, equipment, and hull appendages.

STRUCTURAL DESIGN REVIEW: LESSONS LEARNED

Reinforce what you know about design to prevent cracks, fractures, and defects that may be the origin of a structural failure.

SPECIFIC AND MISCELLANEOUS REQUIREMENTS: CLOSING

This course closes the Specific and Miscellaneous Requirements curriculum.

CURRICULUM DURATION: 10 HOURS

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