



Republic of the Philippines

Department of Education

DepEd Complex, Meralco Avenue, Pasig City

STRENGTHENED SENIOR HIGH SCHOOL CURRICULUM

MARITIME TRANSPORTATION AT THE SUPPORT LEVEL

Grade 11/12

Course Description:

This course is designed to equip learners with the competencies to perform the navigation at the support level, handle cargo and stowage, control operation of the ship, care for persons on board at the support level, and maintain and repair. All competencies are based on Table A-II/4 and A-II/5 of Standards of Training, Certification, and Watchkeeping (STCW) Convention 1978, as amended and geared towards producing future-ready and competent maritime graduates. Upon completion of this course, together with the required seagoing service, the learners can obtain the Certificate of Proficiency under Regulation II/4 and II/5 (subject to appropriate sea service) of the said Convention issued by the Maritime Industry Authority (MARINA), pursue higher education and careers relative to maritime industry sector.

Elective: Technical Professional

Prerequisite: None

Time Allotment: In Grade 11, 320 hours for two semesters, 8 hours per week/In Grade 12, 320 hours for one semester, 16 hours per week

Schedule: First/Second Semester

QUARTER 1

CONTENT STANDARD	The learners demonstrate an understanding of the principles in shipping industry and safe navigational watch in navigating vessel.	
PERFORMANCE STANDARD	The learners perform look-out, handover and relief of the watch in conformity with acceptable practices and procedures.	
LEARNING COMPETENCIES		CONTENT
1. Discuss the shipping industry and its career opportunities		History of Shipping Industry <ul style="list-style-type: none"> • Ancient seafaring; • Exploration and trade • Evolution of ship, navigation techniques and tools • Career Opportunities <ul style="list-style-type: none"> • Ship building and repair • Ship operations and management • Port operations and management • Ship surveying and inspection • Offshore industry

	<ul style="list-style-type: none"> • Maritime education and training • Philippine Navy • Philippine Coast Guard • Maritime Police
<p>2. Discuss the regulatory bodies and conventions in the maritime industry</p>	<p>Regulatory bodies</p> <ul style="list-style-type: none"> • International Maritime Organization (IMO) • International Labor Organization (ILO) • Maritime Industry Authority (MARINA) <p>Four (4) Pillars of the International Maritime Organization (IMO) Convention:</p> <ul style="list-style-type: none"> • International Convention of Safety of Life at Sea (SOLAS) 1974, as amended • International Convention for the Prevention of Pollution from Ship (MARPOL) 1973/1978, as amended • Maritime Labor Convention (MLC) 2006, as amended • International Convention on Standards of Training, Certification, and Watchkeeping (STCW) 1978, as amended
<p>3. Discuss the stressors, and emotional challenges of seafarers</p>	<p>Mental Health</p> <ul style="list-style-type: none"> • Importance of mental health <p>Factors Affecting the Mental and Emotional Behaviors of Seafarers</p> <ul style="list-style-type: none"> • Isolation • Fatigue • Homesickness • Seasickness <p>Coping Strategies and Emotional Resilience</p>

	<ul style="list-style-type: none"> • Stress management techniques (e.g. mindfulness, relaxation, exercises) • Emotional regulation strategies to handle stressful situations <p>Personal well-being and self-care</p>
<p>4. Discuss the shipboard organization and its functions according to the level of responsibility</p>	<p>Shipboard Organizational Structure</p> <ul style="list-style-type: none"> • Deck Department • Engine Department • Galley Department <p>Seven (7) Functions of Shipboard Organization</p> <ul style="list-style-type: none"> • Navigation • Cargo handling and stowage • Controlling the operation of the ship and care for persons on board • Marine engineering • Electrical, electronic and control engineering • Maintenance and repair • Radio communications <p>Levels of Responsibility</p> <ul style="list-style-type: none"> • Management • Operational • Support
<p>5. Discuss the types of ships and operations, parts, dimensions, and terminologies used in ships direction</p>	<p>Types of Ships</p> <ul style="list-style-type: none"> • Tanker vessels <ul style="list-style-type: none"> ○ Oil tanker ○ Chemical tanker ○ Gas tanker • General cargo vessels • Bulk carrier ship • Container vessels

- Reefer ship
- Log ship
- Car carrier
- Roll-on/roll-off vessel
- Livestock carrier
- Offshore vessels
- Passenger ship
- Service ship

Parts of the Ship:

- Hull
- Keel
- Bow
- Stern
- Deck
- Bulkheads
- Accommodation
- Bridge
- Forecastle
- Cofferdams
- Cargo hold/tank
- Engine room spaces
- Steering gear room
- Rudder
- Propeller
- Anchor
- Funnel

Ship's Dimensions

- Length Overall (LOA)
- Forward Perpendicular (LBP)
- Amidship
- Extreme breadth
- Summer loadline

	<ul style="list-style-type: none"> • Freeboard • Draft • Depth <p>Terminologies</p> <ul style="list-style-type: none"> • Forward • Mid-ship • Aft • Port • Starboard • Abeam • Port quarter • Starboard quarter • Port bow • Starboard bow
<p>6. Discuss the purpose of charter party agreement in the ship's trading services</p>	<p>Ship's Trading Services</p> <ul style="list-style-type: none"> • Liner service • Tramping service <p>Types of Charter-Party Agreement</p> <ul style="list-style-type: none"> • Bareboat charter • Time charter • Voyage charter • Lump-sum contract charter
<p>7. Discuss the safety and security code for the protection of personnel, ships, cargo and environment</p>	<p>Ship's Safety and Security</p> <ul style="list-style-type: none"> • International Safety Management (ISM) Code <ul style="list-style-type: none"> ○ Safety at sea ○ Prevention of human injury ○ Environmental protection • International Ship and Port Facility Security (ISPS) Code <ul style="list-style-type: none"> ○ International cooperation ○ Threat identification and prevention ○ Roles and responsibilities

<p>8. Discuss the purpose of bridge equipment and instruments used during ship navigation</p>	<ul style="list-style-type: none"> ○ Security assessments and plan <p>Bridge Equipment and Instruments Used during Navigation:</p> <ul style="list-style-type: none"> • Navigational equipment <ul style="list-style-type: none"> ○ Position fixing ○ Anti-collision ○ Anti- grounding • Radio communication equipment <ul style="list-style-type: none"> ○ Global Maritime Distress and Safety System (GMDSS) ○ Radiotelephony • Other equipment and instruments <ul style="list-style-type: none"> ○ Signaling equipment ○ Bridge Navigational Watch Alarm System (BNWAS)
<p>9. Analyze the common factors affecting the ship's stability</p>	<p>Basic Factors Affecting Ship's Stability:</p> <ul style="list-style-type: none"> • Internal factor <ul style="list-style-type: none"> ○ Cargo ○ Ballast ○ Fuel • External factor <ul style="list-style-type: none"> ○ Wind ○ Waves ○ Shallow waters
<p>10. Compare the duties of the deck watchkeepers for security and safety operation of the ship at sea, anchor, and port</p> <p>11. Perform fire patrolling onboard ship at the support level</p>	<p>Overview of Deck Watchkeeping Duties</p> <ul style="list-style-type: none"> • Secure and safe operation of the ship: <ul style="list-style-type: none"> ○ At sea ○ At anchor ○ At port <p>Fire patrol system</p> <ul style="list-style-type: none"> • Roving • Detecting • Reporting

<p>12. Use communication equipment for shipboard operations</p>	<p>Shipboard Communication equipment:</p> <ul style="list-style-type: none"> • Internal communication <ul style="list-style-type: none"> ○ Walkie talkie ○ Telephone ○ Talk back ○ Intercom • External communication <ul style="list-style-type: none"> ○ VHF ○ Satellite <p>Closed-loop Communication</p> <p>Appropriate Internal Communication and Alarm Systems</p> <p>Understand Orders and Communicate with the OOW on Matters Relevant to Watchkeeping Duties</p>
<p>13. Perform ship steering</p>	<p>Different Steering Modes</p> <ul style="list-style-type: none"> • Auto mode • Manual steering (Helm) mode • Non-follow up (NFU) mode <p>Change-over Procedures from Automatic Pilot to Hand Steering and Vice Versa</p> <p>Use of Magnetic Compass</p> <p>Parts of Magnetic Compass</p> <ul style="list-style-type: none"> • Baseplates • Scales/ Rules • Vial/ Housing • Index line • Direction of travel arrow • Orienting arrow

- Magnetic needle
- Rotating bezel/ azimuth ring

Use of Gyro Compass

Parts of Gyro Compass

- Gyroscope
- Compass dial
- Gimbal rings
- Synchro transmitters and receivers
- Master gyro
- Repeater gyro
- Storage battery

Helms Order

- Midship
- Starboard 5, 10, 15...
- Port 5, 10, 15...
- Hard starboard
- Hard port
- Easy or ease to 5, 10, 15...
- Shift rudder
- Steady
- Steady as she goes
- Nothing to port
- Nothing to starboard
- Meet her/check her

<p>14. Perform procedures in the relief, maintenance, and handover of the watch in conformity with industry standards</p>	<p>Basic Environmental Protection Procedures under MARPOL</p> <p>Information Required to Maintain a Safe Watch</p> <p>Perform procedures in:</p> <ul style="list-style-type: none"> • Relief • Handover • Maintenance of the watch
<p>15. Perform reporting of detected targets, sound or light signals, shapes, or other objects</p>	<p>The Lookout of the Navigational Watch</p> <ul style="list-style-type: none"> • Responsibility of the lookout (Part A, Chapter VIII- Watchkeeping, of the STCW Code, as amended) • Sounds, lights and shapes (Part C & D of COLREGs) • Identification of buoys and landmarks (IALA Buoyage System) <ul style="list-style-type: none"> ○ Lateral marks ○ Cardinal marks ○ Isolated danger marks ○ Safe water marks ○ Special marks ○ Emergency wreck marking buoy • Reporting compass directions of detected targets, lights, sounds, or shapes <ul style="list-style-type: none"> ○ Boxing the compass ○ Compass point system

<p>16. Demonstrate emergency duties in response to emergency situations</p>	<p>Alarm Signals Onboard the Ship:</p> <ul style="list-style-type: none"> • Abandon Ship (verbal instruction) • Man Overboard alarm • Fire alarm (bell/siren) • Dead Man's alarm • Bridge Navigational Watch Alarm System (BNWAS) • Steering alarm • Navigation equipment alarms • Hospital alarm • CO₂ alarm <p>Rating Forming Part of a Navigational Watch and Common Emergency Duties during:</p> <ul style="list-style-type: none"> • Fire • Abandon ship • Man overboard • Pollution <p>Other Emergencies</p>
<p>17. Discuss the purpose of pyrotechnic, EPIRB and SART as used for distress signal.</p>	<p>Pyrotechnic Distress Signals</p> <ul style="list-style-type: none"> • Hand flare • Rocket parachute flare • Buoyant smoke signals <p>Emergency Position Indicating Radio Beacon (EPIRB) and Search and Rescue Transponder (SART)</p> <p>Avoidance of False Distress Alerts and Actions to be Taken in Events of Accidental Activation</p>

QUARTER 2

CONTENT STANDARD	The learners demonstrate an understanding of the procedure in mooring operations and handling of cargo and stores.
PERFORMANCE STANDARD	The learners carry out mooring operations, safe handling of stowage, securing of cargoes, and stores including dangerous, hazardous, and harmful substances and liquids
LEARNING COMPETENCIES	CONTENT
1. Perform mooring operations in accordance with established safety practices and equipment operating instructions.	<p>Mooring System and Related Procedures</p> <ul style="list-style-type: none"> • Functions of mooring and tug lines • Mooring equipment (i.e. mooring wires, synthetic and fiber lines, winches, anchor winches, capstan, bitts, chocks, and bollard) <ul style="list-style-type: none"> ○ Capacity ○ Safe working load ○ Breaking strength • Making fast and letting go (procedures and order of event) <ul style="list-style-type: none"> ○ Mooring lines and wires ○ Tug lines and wires ○ Towing lines • Use of anchors in mooring operations (procedures and order of events) • Procedures and order of events associated with mooring to a buoy or buoys
2. Perform safe handling of stowage and securing of cargoes and stores.	<p>Types of Cargoes, Stores, and Substances</p> <ul style="list-style-type: none"> • Non-hazardous/dangerous • Hazardous/dangerous <ul style="list-style-type: none"> ○ Classes of dangerous goods in accordance International Maritime Dangerous Goods (IMDG) Code <ul style="list-style-type: none"> - explosives - flammable gas - non-flammable gas - toxic gas

	<ul style="list-style-type: none"> - flammable liquid - flammable solid - spontaneously combustible - dangerous when wet - oxidizing agent - organic peroxide - toxic - infectious substance - radio active - corrosive - miscellaneous dangerous good <p>Different Labels of IMDG Dangerous Goods</p> <p>Safety Precautions to be Observed in Connection with Particular Types of Cargo</p> <p>Safe Handling, Stowage and Securing Procedures of Cargoes, Stores, and Substances</p>
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QUARTER 3

CONTENT STANDARD	The learners demonstrate an understanding of the procedure in safe operations of deck equipment and machinery, occupational health and safety precautions, prevention of pollution of the marine environment, and survival crafts and rescue boats.	
PERFORMANCE STANDARD	The learners operate deck equipment and machinery, apply occupational health and safety precautions, apply precautions and contribute to the prevention of pollution of the marine environment, and operate survival crafts and rescue boats.	
LEARNING COMPETENCIES		CONTENT
1. Perform safe working practices and use of appropriate safety and protective equipment to the identified task prior commencement of work.		Safe Working Practices <ul style="list-style-type: none"> • Working aloft • Working over the side

	<ul style="list-style-type: none"> • Working in enclosed spaces • Line handling • Lifting techniques and methods of preventing back injury <p>Personal Shipboard Safety</p> <ul style="list-style-type: none"> • Electrical safety • Mechanical safety • Chemical and biohazard safety <p>Procedures Designed to Safeguard Personnel and the Ship</p> <ul style="list-style-type: none"> • Personal safety equipment • Permit to work systems
<p>2. Perform safe operations of deck equipment and machinery.</p>	<p>Basic Signals for the Operation of:</p> <ul style="list-style-type: none"> • winches • windlasses • cranes and hoists <p>Deck Equipment</p> <ul style="list-style-type: none"> • Function and use of valves and pumps • Function and use of hoist, cranes, booms, and related equipment • Hatches, watertight doors, ports, and related equipment • Construction, use, markings, maintenance, and proper stowage of fibers and wire ropes, cables and chains <p>Safety Practices and Operating Instructions of Various Deck Equipment</p> <p>Procedure on Operating Anchoring Equipment on Various Condition</p>

	<ul style="list-style-type: none"> • Anchoring • Weighing anchor • Securing for sea • In emergencies <p>Precautionary Measures in Operating Anchoring Equipment under Various Conditions</p> <p>Deck and Cargo-handling Gear and Equipment</p> <ul style="list-style-type: none"> • Use of access arrangements, hatches and hatch covers, ramps, side/bow/stern doors, or elevators • Use of pipeline systems – bilge and ballast and wells • Use and handling cranes, derricks, and winches
3. Perform rigging and unrigging.	<p>Procedures in Rigging and Unrigging and Applying Safe Industry Practices and Precautionary Measures</p> <ul style="list-style-type: none"> • Bosun’s chairs • Staging • Pilot ladders • Hoists • Rat-guards • Gangways
4. Perform seamanship skills.	<p>Seamanship Skills</p> <ul style="list-style-type: none"> • Use of marlin spike • Use of knots • Splices • Stoppers • Canvas handling
5. Perform hoisting and dipping flags.	<p>Flags (Country, Maritime Ensign)</p> <p>Main Single-Flag Signals (A, B, G, H, O, P, Q)</p>

	<p>Shapes (Ball, Cone, Cylinder, Diamond) and Proper Methods for Handling Lanyards Proper Use of Blocks and Tackle Procedures in Hoisting and Dipping Flags and Shapes</p>
<p>6. Discuss prevention of pollution of the marine environment.</p>	<p>Precautions to Prevent Pollution of the Marine Environment</p> <p>Use and Operation of Anti-Pollution Equipment</p> <p>Methods of Disposal of Marine Pollutants</p>
<p>7. Discuss survival techniques.</p>	<p>Types of Survival Crafts and Rescue Boats</p> <p>Launching Appliances and Arrangements</p> <p>Survival Crafts and Rescue Boat's Equipment as per Life Saving Appliance (LSA) Code</p> <p>Procedures in Operating Survival Crafts and Rescue Boats, and Its Equipment</p> <p>Survival at Sea Techniques</p> <ul style="list-style-type: none"> • Cold water hazards and its effect • Actions prior abandoning ship • Survival phase <ul style="list-style-type: none"> ○ in the survival craft ○ in the water • Rescue phase <ul style="list-style-type: none"> ○ in the survival craft ○ in the water <p>Treatment of People Recovered from the Water and the Survival Crafts</p>

QUARTER 4

CONTENT STANDARD	The learners demonstrate an understanding of the procedure in shipboard maintenance and repair.
PERFORMANCE STANDARD	The learners perform shipboard maintenance and repair.
LEARNING COMPETENCIES	CONTENT
1. perform deck maintenance and repair activities in accordance with technical, safety, and procedural specifications	<p>Maintenance and repair procedures</p> <ul style="list-style-type: none"> • Painting <ul style="list-style-type: none"> ○ marine paints ○ painting equipment ○ application procedure ○ manufacturer’s safety guidelines • Lubrication <ul style="list-style-type: none"> ○ lubrication ○ lubricating equipment ○ application procedure ○ manufacturer’s safety guidelines • Cleaning materials and equipment <ul style="list-style-type: none"> ○ cleaning materials and equipment ○ application procedure ○ manufacturer’s safety guidelines • Hand and power tools <ul style="list-style-type: none"> ○ hand and power tools ○ application/operating procedure ○ maintenance procedure ○ manufacturer’s safety guidelines • Surface preparation <ul style="list-style-type: none"> ○ surface contaminants ○ surface preparation techniques • Hand tool cleaning <ul style="list-style-type: none"> ○ wire brushing ○ sanding ○ scraping ○ chipping • Power tool cleaning

	<ul style="list-style-type: none"> ○ use of power wire brush ○ use of impact tools ○ use of grinder ○ use of sander <p>Shipboard Instructions</p> <ul style="list-style-type: none"> • Toolbox safety meeting <p>Safe Disposal of Waste Materials as per MARPOL Regulation</p>
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GLOSSARY

Abeam: A direction at right angles to the ship's centerline; directly off the side of the vessel.

Amidship: The central part of a ship, equidistant from the bow and stern.

Ballast: Material, such as water, placed in a ship to ensure stability and proper draft.

Bareboat Charter: A leasing arrangement where the charterer has full control of the vessel and is responsible for its operation and maintenance.

Bridge Navigational Watch Alarm System (BNWAS): An automatic system that monitors bridge activity and detects operator disability, enhancing navigational safety.

Cardinal Marks: Navigation aids indicating the safest water in a particular direction relative to the mark.

Charter Party: A formal agreement between a shipowner and a charterer outlining the terms of the charter.

COLREGs: International Regulations for Preventing Collisions at Sea, establishing "rules of the road" for maritime navigation. [EduMaritime](#)

Dead Man's Alarm: A safety device that triggers an alert if the operator becomes incapacitated.

Draft: The vertical distance between the waterline and the bottom of the hull (keel), indicating the depth of water a ship requires.

EPIRB (Emergency Position Indicating Radio Beacon): A device that transmits a distress signal, including location, to facilitate rescue operations.

Forecastle: The upper deck of a ship located at the bow, traditionally used as crew quarters.

Freeboard: The vertical distance from the waterline to the upper deck level, indicating how much of the ship is above water.

GMDSS (Global Maritime Distress and Safety System): An internationally agreed-upon set of safety procedures and communication protocols for ships.

Gyro Compass: A navigational instrument that uses a fast-spinning disc and the rotation of the Earth to find true north.

Helm: The equipment used to steer a ship, typically a wheel or tiller.

IMDG Code: International Maritime Dangerous Goods Code, regulating the transport of hazardous materials by sea.

ISM Code: International Safety Management Code, providing an international standard for the safe management and operation of ships.

ISPS Code: International Ship and Port Facility Security Code, enhancing maritime security through standardized measures.

Keel: The central structural base of a ship, running along the bottom from bow to stern.

Lateral Marks: Navigation aids indicating the sides of a navigable channel, using colors and shapes to denote port and starboard sides.

Load Line: A marking on a ship's hull indicating the maximum safe loading depth.

MARPOL: International Convention for the Prevention of Pollution from Ships, aiming to minimize marine pollution. [International Maritime Organization](#)

MLC: Maritime Labour Convention, setting minimum working and living standards for seafarers.

Port: The left-hand side of a ship when facing forward.

Pyrotechnics: Signal devices, such as flares, used for distress signaling at sea.

SART (Search and Rescue Transponder): A device that aids in locating survival craft or distressed vessels by transmitting signals to radar.

SOLAS: International Convention for the Safety of Life at Sea, setting safety standards for the construction, equipment, and operation of ships.

Starboard: The right-hand side of a ship when facing forward.

STCW: Standards of Training, Certification, and Watchkeeping for Seafarers, establishing qualification standards for masters, officers, and watch personnel.

Watchkeeping: The practice of maintaining a continuous watch on the bridge, engine room, or deck to ensure safe operation.

REFERENCES

International Maritime Organization. (n.d.). International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978, as amended. Retrieved from <https://www.imo.org/en/OurWork/HumanElement/Pages/STCW-Convention.aspx>International Maritime Organization+2International Maritime Organization+2International Maritime Organization+2

International Maritime Organization. (n.d.). International Convention for the Safety of Life at Sea (SOLAS), 1974, as amended. Retrieved from <https://www.imo.org/en/About/Conventions/Pages/ListOfConventions.aspx>International Maritime Organization

International Maritime Organization. (n.d.). International Convention for the Prevention of Pollution from Ships (MARPOL), 1973/1978, as amended. Retrieved from <https://www.imo.org/en/About/Conventions/Pages/ListOfConventions.aspx>International Maritime Organization

International Labour Organization. (n.d.). Maritime Labour Convention (MLC), 2006, as amended. Retrieved from <https://www.ilo.org/global/standards/maritime-labour-convention/lang--en/index.htm>

International Maritime Organization. (n.d.). International Maritime Dangerous Goods (IMDG) Code. Retrieved from <https://www.imo.org/en/OurWork/Safety/Pages/DangerousGoods-default.aspx>International Maritime Organization+1International Maritime Organization+1

International Maritime Organization. (n.d.). Life-Saving Appliances (LSA) Code. Retrieved from <https://www.imo.org/en/OurWork/Safety/Pages/LifeSavingAppliances-default.aspx>International Maritime Organization+1International Maritime Organization+1

International Maritime Organization. (n.d.). International Ship and Port Facility Security (ISPS) Code. Retrieved from <https://www.imo.org/en/OurWork/Security/Pages/SOLAS-XI-2%20ISPS%20Code.aspx>

International Maritime Organization. (n.d.). International Safety Management (ISM) Code. Retrieved from <https://www.imo.org/en/OurWork/HumanElement/Pages/ISMCode.aspx>International Maritime Organization

Maritime Industry Authority (MARINA). (n.d.). STCW Regulations and Courses. Retrieved from <https://stcw.marina.gov.ph/MARINA> STCW Office

TOOLS, MATERIALS, AND EQUIPMENT

TOOLS	MATERIALS	EQUIPMENT
General Hand Tools	Painting Materials	Navigation and Bridge Equipment
Screwdrivers (flathead and Phillips)	Marine-grade paint (various types)	Magnetic compass (trainer model and operational)
Wrenches (adjustable, socket, pipe)	Paint thinner/solvent	Gyro compass
Pliers (needle-nose, slip-joint)	Primers and anti-fouling agents	Radar simulator
Hammers (claw, ball peen)	Lubricants & Fluids	Electronic chart display and information system (ECDIS) simulator
Mallets	Marine-grade lubricating oil	Bridge Navigational Watch Alarm System (BNWAS)
Utility knives	Grease for winches and machinery	Signal flags and shapes

TOOLS	MATERIALS	EQUIPMENT
Chisels	Cleaning Agents	VHF radio sets (fixed and handheld)
Measuring tapes and calipers	Detergents	GMDSS simulator
Scrapers and wire brushes	Degreasers	EPIRB and SART training units
Seamanship Tools	Disinfectants	AIS transponder (demo model)
Marlin spike	Ropes and Lines	Ship's bell and whistles (for sound signals)
Fid and palm for splicing	Synthetic ropes	Light signaling apparatus
Needles and sailmaker's tools	Fiber ropes	Deck Machinery
Rope cutters	Wire ropes (various diameters)	Anchor windlass (mock-up or simulator)
Knotting board	Flags and Signal Materials	Mooring winch (demo setup)
Compass Tools	IMO signal flags (A-Z and numerals)	Capstan (simulated)
Hand-bearing compass	Day shapes (ball, cone, cylinder, diamond)	Crane and hoist (model or real-use training unit)
Divider and parallel ruler	Mock Cargo and Stowage Materials	Hydraulic valves and pump trainer
Protractor	Cargo securing gear (lashing straps, chains)	Watertight door mock-up
Chart plotting tools	Label samples for IMDG cargo	Survival and Firefighting Equipment
Painting Tools	Dummy cargo crates or containers	Lifejackets and immersion suits
Paint brushes and rollers	PPE & Safety Materials	Life rafts (inflatable training units)
Paint scrapers	Helmets, gloves, goggles	Rescue boats or mock-up for training
Sanding blocks	Safety shoes, harnesses	Pyrotechnics (inert training flares, smoke signals)
Chipping hammers	Coveralls and reflective vests	Fire extinguishers (CO ₂ , foam, powder)
Cleaning Tools	First aid kits	Fire detection and alarm panels
Deck brushes	Documentation/Charts	SCBA (Self-Contained Breathing Apparatus)
Mops and buckets	Nautical charts	Fire hoses and nozzles

TOOLS	MATERIALS	EQUIPMENT
Squeegees	Passage planning templates	Maintenance and Repair
Sponges	Checklists for watchkeeping, mooring, safety drills	Welding equipment (basic demo use or simulator)
Rigging Tools	IMDG Code reference materials	Grinder, sander, chipping guns
Bosun's chair		Lubrication pumps
Lanyards		Safety harnesses and personal protective equipment (PPE)
Pilot ladder hook tools		Ventilation fans (for enclosed space training)
Blocks and tackle		Safety & Communication
		Walkie-talkies and intercom systems
		Muster list and alarm systems
		Permit-to-work documentation
		Safety posters and signage