COMPETENCY MAPPING

Title ***STCW Table***	***Table A – III / 6*** ***Specifications of minimum standards of competence for electro-technical officers***

GUIDANCE NOTES	
TERMS	***Description***
Positive ***Reward***	***Score will increase in the assessment criterion / may be combined with increased gradual scoring*** ***Bonus points, an integer within the range of 0 to 100. The default value is 0.***
Negative ***Penalty***	***Score will decrease in the assessment criterion / may be combined with decreased gradual scoring*** ***Penalty points, an integer within the range of 0 to 100. The default value is 0.***
Triggered Once ***Single***	***A trigger is activated once.*** ***A rule is triggered in the scenario only once: the first time the conditions occur.***
Multiple ***Circular***	***Assessment scoring can be started multiple times.*** ***A rule is triggered every time the conditions occur.***
Delay ***Time Dependency***	***The assessment scoring can be delayed in order to give the student some reaction time, for example after a malfunction has been activated.*** ***Time dependency ruling***
Critical Criterion ***Weight***	***The assessment must be achieved in order to pass the test.*** ***Multiplier of a trainee's level of competency***

Levels of Simulation

Familiarization - familiar with the equipment, layout procedures, and routine task
Operational - the task relates to the inputs and outputs and their relationship and has to do with the performance of a function
Functional - the task relates to the functions or activities performed by the system without reference to which of the elements of the system perform those functions
Communication - relates to effective communication between human resources to report, get feedback, or to execute a task
Emergency - task performed in circumstances where there is variation or deviation from an expected scenario or situation
Crisis - task performed when the emergency has developed into a crisis

Color Coding:

THEORETICAL EXAMINATION	SIMULATION ASSESSMENT	LABORATORY ASSESSMENT	APPROVED TRAINING

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
Function1: Electrical, electronic and control engineering at the operational level							
C1 Monitor the operation of electrical, electronic and control systems	C1.1 Basic understanding of the operation of mechanical engineering systems, including: .1 prime movers, including main propulsion plant .2 engine-room auxiliary machinery .3 steering systems .4 cargo handling systems .5 deck machinery .6 hotel systems Knowledge of: C1.2 Electro-technology and electrical machines theory C1.3	At the end of the assessment the candidate must be able to administer the monitoring of the operation of electrical, electronic and control systems	**Criterion 1** Operation of equipment and system is in accordance with operating manuals **Criterion 2** Performance levels are in accordance with technical specifications	Criterion 1 Operation is in accordance with operating manuals and results of risk assessment of the following equipment and systems: .1 prime movers, including main propulsion plant .2 engine-room auxiliary machinery .3 steering systems .4 cargo handling systems .5 deck machinery .6 hotel systems Criterion 2 Compare values of parameters to analyse performance levels of the following equipment and systems with technical specifications. 1. prime movers, including main propulsion plant 1.1 Main engine o sea mode o standby mode 1.2 Shaft Generator o Voltage o Frequency o Power o Engine Speed	Rubric	Operational	Simulator

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	Fundamentals of electronics and power electronics C1.4 Electrical power distribution boards and electrical equipment C1.5 Fundamentals of automation, automatic control systems and technology C1.6 Instrumentation, alarm and monitoring systems C1.7 Electrical drives Technology of electrical materials C1.8 Electro-hydraulic and			2. engine-room auxiliary machineries 2.1 Main Switchboard o Volts o No.2 DG overspeed trip o Emerg Gen 24V fault o T/Gen low lube oil pressure 2.2 Boiler o Feed water pressure o Fuel Oil inlet to burner temperature o FO Supply pump discharge pressure 2.3 M/E Fuel Oil system o Fuel oil supply pump wattage 2.4 Water Desalination Plant o Ejector pump discharge pressure 2.5 Cooling system - M/E Jacket cooling o Pump No1 o Pump No 2 2.6 Lube oil system o Camshaft LO Pump discharge pressure, o M/E LO Pump discharge pressure 2.7 Fuel oil system o FO Purifiers running in series o FO Purifiers running in parallel			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	electro-pneumatic control systems C1.9 Appreciation of the hazards and precautions required for the operation of power systems above 1,000 volts			2.8 Starting and control air system o starting air pressure o control air pressure 2.9 Heating system o Boiler Water Feed pump discharge pressure 2.10 Aux Boiler Forced draft fan status o ON o OFF 3. Steering system 3.1 Steering gear hydraulic pressure 3.2 Hydraulic pump in service o Pump No1 o Pump No 2 4. Cargo handling system 4.1 Ballast pump 2 status o ON o OFF 5. Deck Machinery 5.1 Steam Heating Consumer for Deck Machinery o ON o OFF 6. Hotel system 6.1 Accommodation A/Conditioning system 6.2 Cabin temperatures o Cabin 1			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
				○ Cabin 2 ○ Cabin 3 ○ Cabin 4 6.3 Sewage Plant discharge pump status ○ ON ○ OFF			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
C2 Monitor the operation of automatic control systems of propulsion and auxiliary machinery	C2.1 Preparation of control systems of propulsion and auxiliary machinery for operation	At the end of the assessment the candidate must be able to administer the monitoring of the operation of automatic control systems of propulsion and auxiliary machinery	**Criterion 3** Surveillance of main propulsion plant and auxiliary systems is sufficient to maintain safe operation condition	Criterion 3 Compare values of parameters to analyse performance levels of the following equipment and systems with technical specifications. ME Parameters o RPM: _____rpm o ME Air receiver temp: _____ºC o ME Exh. Gas Smoke Content: ____%) ME Exhaust Gas Outlet Temp: o Cylinder 1: _____ºC o Cylinder 2: _____ ºC o Cylinder 3: _____ ºC o Cylinder 4: _____ºC o Cylinder 5:_____ ºC Shaft Generator o SG Input Shaft Speed: _____rpm o SG Cabinet Air Temp: _____ºC o SG Active power: _____kW o SG Current: _____A o SG Stator Winding Temp: _____ºC Turbo Generator o TG Shaft Speed: _____rpm	Rubric	Operational	Simulator

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
				o TG Inlet Steam Pressure (supply line): _____bar/s o TG inlet steam temp (supply line o TG vibration: _____% Steering Gear System: No.2 in SERVICE: o Steering gear pump 2 discharge pressure: _____bar/s o Steering gear oil filter 2 diff press: _____bar/s o Steering gear oil sump 2 temp: _____ºC o Steering gear expansion tank 1 level: _____% o Steering gear expansion tank 2 level: _____% Ballast Pump Turbine Condition: (Any Trips?) o _____ Forward Mooring Winches Expansion Tank Level: _____% Aft Mooring Winches Expansion Tank Level: _____% Air Conditioning Plant: o Fresh Air Inlet Temperature: _____ºC o Return Air Temperature: _____ºC o Refrig. Compressor Power: _____kW			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
				o Accommodation Air Temp: _____ºC o Accommodation Air humidity: _____% Cooling System: o Main SW pump discharge pressure: _____bar/s o LTFW pump discharge pressure: _____bar/s o LTFW temp outlet LTFW pumps: _____ºC o HTFW pressure inlet ME: _____bar/s o HTFW temp inlet ME: _____ºC ME Lubricating Oil System: o Main LO Pressure inlet ME bearings: _____bar/s o Main LO temp Inlet ME: _____ºC o Camshaft LO press inlet ME: _____bar/s o Camshaft LO temp inlet ME: _____ºC Fuel Oil System: o FO supply pump pressure: _____bar/s o FO pressure at ME: _____bar/s o FO temp inlet ME: _____ºC o FO visco inlet ME: _____cSt Starting Air System:			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
				o Starting Air Receiver 1 pressure: _____bar/s o Starting Air Receiver 2 pressure: _____bar/s o Emerg Starting Air Receiver pressure: o _____bar/s Heating System: o Boiler Steam Pressure: _____bar/s o Boiler superheater steam temp: ____ºC			
C3 Operate generators and distribution systems	C3.1 Coupling, load sharing and changing over generators C3.2 Coupling and breaking connections between switchboards and control panels	At the end of the assessment the candidate must be able to operate generators and distribution systems	**Criterion 4** Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations **Criterion 5** Electrical distribution systems can be understood and explained with drawings/ instructions	Criterion 4 & 5 Planning: Operation is in accordance with operating manuals of the generators and distribution systems and results of risk assessment Operation: 1. Perform load sharing between two (2) or three (3) generators. 2. Engage the incoming generator once the following conditions are met: a. Voltage b. Frequency (slightly higher than 60Hz) c. Any of the following should NOT occur: i. Under/Over Voltage alarm/trip	Rubric	Operational	Simulator

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
				ii. High/Low frequency alarm/trip iii. Blackout 3. Connect the generator to the bus bar 4. Breaking the connection between the generators performed based on the following: • kW load (approximately 50% of the total load • Can be done in Auto or Manual • Any of the following should NOT occur: ▪ High/Low frequency alarm/trip ▪ Overload/Over current alarm/trip ▪ Reverse power trip ▪ Preferential trip 5. Transfer of loads from one generator			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
C4 Operate and maintain power systems in excess of 1000 volts	C4.1 High-voltage technology C4.2 Safety precautions and procedures C4.3 Electrical propulsion of the ships, electrical motors and control systems C4.4 Safe operation and maintenance of high-voltage systems, including knowledge of the special technical type of high-voltage systems and the danger resulting from operational voltage of more than 1000 volts	At the end of the assessment the candidate must be able to operate and maintain power systems in excess of 1000 volts	**Criterion 6** Operations are planned and carried out in accordance with operating manuals, established rules and procedures to ensure safety of operations	Criterion 6 Planning: Operation is in accordance with operating manuals of power systems in excess of 1000 volts and results of risk assessment Operation: Apply the following rules and procedures to ensure safe operation and maintenance of electrical equipment in excess of 1,000 volts AC: 1. Use Protective and Recovery gear •Helmet with face shield •Insulated rubber gloves with leather protector 2. Perform Isolation verification test •maintain safe working distance •verify the absence of voltage •Discharge the equipment 3. Perform Maintenance Task • Carry-out Polarization Index	Rubric	Operational	Laboratory

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
C5 Operate computers and computer networks on ships	C5.1 Understanding of: .1 main features of data processing .2 constructions and use of computer networks on ships .3 bridge-based, engine-room-based and commercial computer use	At the end of the assessment the candidate must be able to operate computers and computer networks on ships	**Criterion 7** Computer networks and computer are correctly checked and handled	Criterion 7 Planning: Operation is in accordance with operating manuals of the computer networks and computer networks on ships Operation: Operate computers and networks used during bridge, engine room, and other commercial ship operations.	Rubric	Operational	Simulator
C6 Use English in theoretical and oral form	C6.1 Adequate knowledge of the English language to enable the officer to use engineering publication and to perform the officer's duties	At the end of the assessment the candidate must be able to use English in theoretical and oral form	**Criterion 8** English language publications relevant to the other officer's duties are correctly interpreted **Criterion 9** Communications are clear and understood	Note: This competence is assessed in other competences, which requires the use and interpretation of engineering publications (operation manuals and technical operations) such as in Competence 3, 7 and 8.	Rubric	Operational	Simulator / Laboratory

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
C7 Use internal communication systems	C7.1 Operation of all internal communication systems onboard	At the end of the assessment the candidate must be able to use internal communication systems	**Criterion 10** Transmission and reception of messages are consistently successful **Criterion 11** Communication records are complete, accurate and complied with statutory requirements	Criterion 11 Operation is in accordance with operating manuals of the internal communication systems Operate Auto-exchange telephone and other internal communication systems. Maintenance of records of communications is in accordance with established onboard and company procedures	Rubric	Operational Communication	Simulator

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
Function2: Maintenance and repair at operational level							
C8 Maintenance and repair of electrical and electronic equipment	C8.1 Safety requirements for working on shipboard electrical systems, including the safe isolation of electrical equipment required before personnel are permitted to work on such equipment C8.2 Maintenance and repair of electrical system equipment, switchboard, electric motors, generators and DC electrical	At the end of the assessment the candidate must be able to conduct maintenance and repair of electrical and electronic equipment	**Criterion 12** Safety measures for working are appropriate **Criterion 13** Selection and use of hand tools, measuring instrument, and testing equipment are appropriate and interpretation of results is accurate **Criterion 14** Dismantling, inspecting, repairing and reassembling equipment are in accordance with	Criterion 12 Safe working practice and procedures are observed in the maintenance and repair of electrical and electronic equipment such as: - use suitable PPE - select approved hand tools, electrical testing and measuring instruments - fill-out work permit - isolate power supply of the equipment - install lockout/tagout Criterion 13 Hand tools, measuring instrument, and testing equipment used is appropriate to the assigned maintenance and repair work. Criterion 14 Safe working practice and procedures are applied in the use of dismantling, inspecting, repairing and reassembling equipment for maintenance and repair of electrical and electronic equipment.	Reward or Penalty (Rubric)	Operational level GROUP D	Laboratory

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	systems and equipment C8.3 Detection of electric malfunction, location of faults and measures to prevent damage C8.4 Construction and operation of electrical testing and measuring equipment C8.5 Function and performance test of the following equipment and their configuration		manuals and good practice **Criterion 15** Reassembling and performance testing in accordance with manuals and good practice	Criterion 15 Safe working practice and procedures are observed in the reassembling and performance testing of electrical and electronic equipment, such as: .- verify that the main power supply of the equipment is switched off using the wiring diagram of the equipment as reference - verify the absence of voltage - disconnect the power supply of the equipment - dismantle and overhaul the equipment using the appropriate hand tools and electrical measuring instruments - check condition of equipment after overhaul to ensure fault has been rectified -reconnect the power supply of the equipment -restore all protective devices and test run the equipment prior to putting in service			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	.1 monitor systems .2 automatic control devices .3 protecting devices C8.6 The interpretation of electrical and electronic diagrams						
C9 Maintenance and repair of automation and control systems of main propulsion and auxiliary machinery	C9.1 Appropriate electrical and mechanical knowledge and skills C9.2 Safety and emergency procedures C9.3 Safe isolation of equipment and associated	At the end of the assessment the candidate must be able to conduct maintenance and repair of automation and control systems of main propulsion and auxiliary machinery	**Criterion 16** The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawing is correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified	Criterion 16 Given a malfunction: .1 identify effect on the associated plant and systems .2 correct use of appropriate measuring and calibrating instruments in accordance with instruction manual .3 correct interpretation of ship's technical drawing and justify actions to be taken	Rubric	Operational	Laboratory

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	system required before personnel are permitted to work on such plant or equipment C9.4 Practical knowledge for the testing, maintenance, fault finding and repair C9.5 Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition		**Criterion 17** Isolation, dismantling and reassembly of plant and equipment are in accordance with manufacturer's safety guidelines, shipboard instructions, and legislative and safety specifications. Action taken needs to the restoration of automation and control systems by the method most suitable and appropriate to the prevailing circumstances and conditions	Criterion 17 Safe working practice and procedures are observed in the isolation, dismantling and reassembly of plant and equipment, such as: .- verify that the main power supply of the equipment is switched off using the wiring diagram of the equipment as reference - verify the absence of voltage - disconnect the power supply of the equipment - dismantle and overhaul the equipment using the appropriate hand tools and electrical measuring instruments - check condition of equipment after overhaul to ensure fault has been rectified -reconnect the power supply of the equipment -restore all protective devices and test run the equipment prior to putting in service			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
C10 Maintenance and repair of bridge navigation equipment and ship communication systems	C10.1 Knowledge of the principles and maintenance procedures of navigation equipment, internal and external communication systems C10.2 Electrical and electronic systems operating inflammable areas C10.3 Carrying out safe maintenance and repair procedures C10.4 Detection of machinery malfunction, location of faults	At the end of the assessment the candidate must be able to conduct maintenance and repair of bridge navigation equipment and ship communication	**Criterion 18** The effect of malfunctions on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified Criterion 19 Isolation, dismantling and re-assembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions legislative and safety specifications. Action taken leads to the restoration of	Criterion 18 Given a malfunction: .1 identify effect on the associated plant and systems .2 correct use of appropriate measuring and calibrating instruments in accordance with instruction manual .3 correct interpretation of ship's technical drawing and justify actions to be taken Criterion 19 Safe working practice and procedures are observed in the isolation, dismantling and reassembly of plant and equipment, such as: .- verify that the main power supply of the equipment is switched off using the wiring diagram of the equipment as reference - verify the absence of voltage - disconnect the power supply of the equipment	Rubric	Operational	Laboratory

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	and action to prevent damage		bridge navigation equipment and ship communication systems by the method most suitable and appropriate to the prevailing circumstances and conditions	- dismantle and overhaul the equipment using the appropriate hand tools and electrical measuring instruments - check condition of equipment after overhaul to ensure fault has been rectified -reconnect the power supply of the equipment -restore all protective devices and test run the equipment prior to putting in service			
C11 Maintenance and repair of electrical, electronic and control system of deck machinery and cargo-handling equipment	C11.1 Appropriate electrical and mechanical knowledge and skills *Safety and emergency procedures* C11.2.1 Safe isolation of equipment and associated required before personnel are	At the end of the assessment the candidate must be able to conduct maintenance and repair of electrical, electronic and control system of deck machinery and cargo-handling equipment plant or equipment	**Criterion 20** The effect of malfunction on associated plant and systems is accurately identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified **Criterion 21** Isolation, dismantling and re-	Criterion 20 Given a malfunction: .1 identify effect on the associated plant and systems .2 correct use of appropriate measuring and calibrating instruments in accordance with instruction manual .3 correct interpretation of ship's technical drawing and justify actions to be taken Criterion 21 Safe working practice and procedures are observed in the isolation,	Rubric	Operational	Laboratory

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	permitted to work on such plant or equipment C11.2.2 Practical knowledge for the testing, maintenance, fault finding and repair C11.2.3 Test, detect faults and maintain and restore electrical and electronic control equipment to operating condition		assembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions, legislative and safety specifications. Action taken leads to the restoration of deck machinery and cargo-handling equipment by the method most suitable and appropriate to the prevailing circumstances and conditions	dismantling and reassembly of plant and equipment such as: .- verify that the main power supply of the equipment is switched off using the wiring diagram of the equipment as reference - verify the absence of voltage - disconnect the power supply of the equipment - dismantle and overhaul the equipment using the appropriate hand tools and electrical measuring instruments - check condition of equipment after overhaul to ensure fault has been rectified -reconnect the power supply of the equipment -restore all protective devices and test run the equipment prior to putting in service			
C12 Maintenance and repair of control and safety systems of hotel equipment	C12.1 Electrical and electronic systems operating in flammable areas	At the end of the assessment the candidate must be able to conduct maintenance and repair of	Criterion 22 The effect of malfunctions on associated plant and systems is accurately	Criterion 22 Given a malfunction: .1 identify effect on the associated plant and systems	Rubric	Operational	Laboratory

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	C12.2 Carrying out safe maintenance and repair procedures C12.3 Detection of machinery malfunction, location of faults and action to prevent damage	control and safety systems of hotel equipment	identified, ship's technical drawings are correctly interpreted, measuring and calibrating instruments are correctly used and actions taken are justified Criterion 23 Isolation, dismantling and re-assembly of plant and equipment are in accordance with manufacturer's safety guidelines and shipboard instructions, legislative and safety specifications. Action taken leads to the restoration of control and safety systems of hotel equipment by the	.2 correct use of appropriate measuring and calibrating instruments in accordance with instruction manual .3 correct interpretation of ship's technical drawing and justify actions to be taken Criterion 23 Safe working practice and procedures are observed in the isolation, dismantling and reassembly of plant and equipment, such as: .- verify that the main power supply of the equipment is switched off using the wiring diagram of the equipment as reference - verify the absence of voltage - disconnect the power supply of the equipment - dismantle and overhaul the equipment using the appropriate			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
			method most suitable and appropriate to the prevailing circumstances and conditions	hand tools and electrical measuring instruments - check condition of equipment after overhaul to ensure fault has been rectified -reconnect the power supply of the equipment -restore all protective devices and test run the equipment prior to putting in service			

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
Function 3: Controlling the operation of the ship and care for persons on board at the operational level							
C13 Ensure compliance with pollution prevention requirements	C13.1 Prevention of pollution of the marine environment C13.1.1 Knowledge of the precautions to be taken to prevent pollution of the marine environment C13.1.2 Anti-pollution procedures and all associated equipment C13.1.3 Importance of proactive measures to protect the marine environment	At the end of the assessment the candidate must be able to ensure compliance with pollution prevention requirements	**Criterion 24** Procedures for monitoring shipboard operations and ensuring compliance with pollution prevention requirements are fully observed **Criterion 25** Actions to ensure that a positive environmental reputation is maintained	Note: This competence is assessed in other competences, which involves shipboard operations that requires compliance with pollution prevention requirements such as in Competence 11 and 17	Rubric	Operational	Laboratory
C14 Prevent, control and fight fires on board	**Prevent, control, and fight fires on board shall be addressed by presenting valid COP in Advance Training in Firefighting (ATFF).**						

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
C15 Operate life-saving appliances	**Operate life-saving appliances shall be addressed by presenting valid COP in Proficiency in survival and Rescue Boats, other than Fast Recue Boats (PSCRB).**						
C16 Apply medical first aid on board ship	**Apply medical first aid onboard ships shall be addressed by presenting valid COP in Medical First Aid (MEFA).**						
C17 Application of leadership and managerial skills	C17.1 Working knowledge of shipboard personnel management and training C17.2 Ability to apply task and workload management, including: C17.2.1 planning and coordination C17.2.2 personnel assignment C17.2.3 time and resource constraints C17.2.4	At the end of the assessment the candidate must be able to apply leadership and managerial skills:	**Criterion 30** The crew are allocated duties and informed of expected standards of work and behavior in a manner appropriate to the individuals concerned **Criterion 31** Training objectives and activities are based on assessment of current competence and capabilities and operational requirements **Criterion 32**	Note: This competence is assessed in other competences, which involves Application of leadership and managerial skills such as in Competence 11 and 13.	Rubric	Operational	Simulator

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	Prioritization C17.3 Knowledge and ability to apply effective resource management C17.3.1 allocation, assignment and prioritization of resources C17.3.2 effective communication on board and ashore C17.3.3 decisions reflect consideration of team experiences C17.3.4 assertiveness and leadership, including motivation C17.3.5 obtaining and maintaining situational awareness		Operations are planned and resources are allocated as needed in correct priority to perform necessary tasks **Criterion 33** Communication is clearly and unambiguously given and received **Criterion 34** Effective leadership behaviors are demonstrated **Criterion 35** Necessary team member(s) share accurate understanding of current and predicted vessel state and operational status and external environment **Criterion 36**				

COMPETENCE	KUP	ASSESSMENT OUTCOME	PERFORMANCE CRITERIA	PERFORMANCE STANDARD	SCORING PROCEDURE	LEVEL OF SIMULATION	METHOD OF ASSESSMENT
	C17.4 Knowledge and ability to apply decision-making techniques C17.4.1 situation and risk management C17.4.2 identify and consider generated options C17.4.3 selecting course of action C17.4.4 evaluation of outcome effectiveness		Decisions are most effective for the situation				
C18 - Contribute to the safety of personnel and ship	**Contribute to the safety of personnel and ship should be addressed by presenting valid COP in Basic Training (BT).**						