ANNEX B OF CMO NO. 20, SERIES OF 2015
BACHELOR OF SCIENCE IN MARINE TRANSPORTATION
COURSE SPECIFICATIONS

Course Code	**:**	D-Watch 2
Course Descriptive Title	**:**	Deck Watch Keeping
Course Credits	**:**	3 units
Lecture Contact Hours per Week	**:**	3 hours
Laboratory Contact Hours per Week	**:**	1 hour
Prerequisite	**:**	D-Watch 1
Reference/s	**:**	1. Table A-II/1 of the 1978 STCW Code as amended Function: Navigation at the operational level 2. IMO Model Course 7.01 3. Annex A of CMO No. 20, Series of 2015 (Curriculum Mapping for BSMT)

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
Plan and conduct a passage and determine position	Knowledge of steering control systems, operational procedures and change-over from manual to automatic control and vice versa. Adjustment of controls for optimum performance	Steering control systems Explains the principle of an automatic pilot system Explains the functions of the manual settings Describes the procedures for change-over from automatic to manual steering and vice versa Explains what is meant by an adaptive automatic pilot and briefly explains how it functions	6

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
		Describes the course monitor and the off-course alarm Describes the operation of the course recorder log Lists the other alarms fitted to the system States that the automatic pilot should be included in the steering gear testing prior to the ship's departure Explains the regulation regarding the use of the automatic pilot Explains in the recommendation on performance, standards for automatic pilots Explains the need for regular checking of the automatic pilot to ensure that it is steering the correct course States that the automatic pilot should be tested manually at least once per watch Describes the factors to take into account regarding the change-over to manual control of steering in order to deal with a potentially hazardous situation	
Maintain a safe navigational watch	Thorough knowledge of the Principles to be observed in keeping a navigational watch	Principles to be observed in keeping a navigational watch States that the officer of the watch is responsible for navigating safely, with particular regard to avoiding collision and stranding Describes the principles to be observed in keeping a navigational watch as set out in Section A-VIII II/1 of STCW, 1978 Code regarding: – navigation – navigational equipment – navigational duties and responsibilities – handing over and taking over the watch – look-out – navigation with a pilot embarked – protection of the marine environment – Bridge Navigation Watch Alarm System	6

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
		– Blind pilotage technique – General principles for ship reporting systems and with VTS procedures Describes the recommendation on operational guidance for officers in charge of a navigational watch contained in Section B-VIII/2 Chapter VIII, Section A-VIII/2 of the International Conference on Training and Certification of Seafarers,1978 STCW Code: – maintenance of an efficient look-out – the use of engines and sound signaling apparatus – taking over the navigational watch – periodic checks of navigational equipment – compliance with SOLAS V/19 regarding the use of the automatic pilot and the change-over to manual steering and vice-versa – electronic navigational aids – the use of radar – navigation in coastal waters – conduct of the watch in clear weather – actions to take in restricted visibility – the circumstances in which the officer of the watch should call the master – navigation with a pilot embarked – briefing of watchkeeping personnel Describes the duties of the officer of the watch while at anchor Lists the entries which should be made in the log-book	
		Keeping a watch in port *Keeping an Effective Deck Watch in Port under Normal Circumstances*	

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
		States that arrangements for keeping watch in port should: – ensure the safety of life, ship, cargo and port – observe international, national and local rules – maintain order and the normal routine of the ship Describes taking over the watch and lists the information which the officer being relieved should pass to the relieving officer Lists the matters on which the relieving officer should satisfy themselves himself before assuming charge of the watch Describes how the watch should be kept and lists the points to which attention should be paid Describes the actions to take on receiving a storm warning or in an emergency threatening the safety of the ship Lists the entries which should be made in the log-book *Keeping a Safe Deck Watch in Port When Carrying Hazardous Cargo* Defines 'hazardous cargo' States that sufficient personnel should be readily available on board when carrying hazardous cargo in bulk Explains states that special requirements may be necessary for special types of ships or cargo, particularly with respect to: – the number of crew required on board – the state of readiness of fire-fighting appliances and other safety equipment – special port regulations – communications with the shore in the event of an emergency arising	

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
		– special precautions to prevent pollution of the environment States that the officer of the watch should be aware of the nature of the hazards and any special precautions necessary for the safe handling of cargo States that the officer of the watch should be aware of the appropriate action in the event of a spillage or fire Describes the procedure for entry into enclosed spaces using a 'permit to work', and the monitoring of work in progress Describes the arrangements and procedures for rescue from an enclosed space in an emergency	
	Knowledge of bridge resource management principles, including: .1 allocation, assignment, and prioritization of resources .2 effective communication .3 assertiveness and leadership .4 obtaining and maintaining situational awareness .5 consideration of team experience	bridge resource management *Note that this section is intended to ensure that trainees can apply the generic leadership, teamwork and resource management competence developed in Function 3 to the bridge environment.* Describes the basic principles of bridge resource management Explains how responsibility for the safety is clearly defined at all times, including periods when the master is on the bridge and while under pilotage Demonstrates clear, concise communications and acknowledgements (at all times) in a seaman-like manner Demonstrates the allocation, assignment and prioritisation of resources Demonstrates the importance of ensuring the effectiveness of communication between bridge team members Explains the importance of ensuring the effectiveness of information exchange with pilot Demonstrates effective information exchange	8

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
		Defines “situational leadership” Explains the relationship between assertiveness and leadership Explains the importance of challenge and response Explains the importance of obtaining and maintaining situational awareness Demonstrates appropriate challenges and responses Demonstrates the ability to maintain situational awareness in complex situations	
	The use of information from navigational equipment for maintaining a safe navigational watch	Speed measurement *Speed Logs* States describes the difference between ground-reference speed and water-reference speed Describes the basic principles of the electromagnetic speed log Describes the basic principles of the pressure-tube log Explains the necessity of withdrawal of the tube before entering port Describes the basic principles of the acoustic-correlation log Describes the basic principles of the Doppler speed log Explains the "Janus" configuration to counteract the effect of ship's trim Explains the dual-axis configuration and its use during docking operations Lists the main error sources on the various types of logs States describes the accuracies of the various systems Explains calibration of the log	18

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
		Describes how ship's speed is transmitted to remote displays Draws a schematic diagram showing how an indication of distance run is derived from a speed log	
		Operational use of AIS (*See IMO Model Course No 1.34*) AIS system concepts A basic description of AIS at a systems level: – AIS objectives of the Organization – System concepts – Comparison of AIS with radar Detailed description of AIS data at a user level including safety/security related messages, AIS Aids to Navigation and AIS Binary Messages. AIS ship installations AIS configuration description, including: – Carriage requirements – MKD based configuration – Radar/ECDIS configuration – Overview of operational problems caused by installation issues The safe use of AIS at sea: – Bridge procedures – Data input and checking – UN/LOCODES – Use of safety and security related messages – Use of AIS Binary Messages – Use of AIS in areas with security or piracy implications – Use of AIS in oil terminals – AIS alarms – Cautions of use of AIS	

COMPETENCE	KNOWLEDGE, UNDERSTANDING AND PROFICIENCY	TOPICS/PERFORMNCE	APPROX HOURS
		– Use of ATS to increase situational awareness in for both MKD only and radar/ECDIS installations – Implications of COLREGS – Use of AIS AtoN data – Manual setting of regional operating settings	
	Knowledge of blind pilotage techniques	Knowledge of navigational techniques used for safe navigation in restricted visibility Explains the importance of using parallel index techniques using Radar Describes the provisions for using video mapping on Radar/ARPA	2
	The use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures	The use of reporting in accordance with the General Principles for Ship Reporting Systems and with VTS procedures Describes the use of reporting in accordance with the general principles for ship reporting systems and with VTS procedures	2
		TOTAL	42