

## Table of Specifications (TOS)

Topics (Knowledge Dimension)	Time Allotment (hrs.)	% of Teaching Time	Thinking Skills (Learning Process Dimension)						No. of Test Items
			Remember	Understand	Apply	Analyze	Evaluate	Create	
Course Introduction	0.5	0.45							0
1. Voyage planning and navigation for all conditions	3.0	2.73		1			2		3
2. Routeing in accordance with the General Provisions on Ships' Routeing	1.5	1.36					1		1
3. Reporting in accordance with the General principles for Ship Reporting Systems and with VTS procedures	3.0	2.73		1	1		1		3
4. Position determination in all conditions	1.5	1.36				1			1
5. Errors of the magnetic and gyro-compasses	3.0	2.73			1		2		3
6. Principles of magnetic and gyro compasses	1.0	0.91					1		1
7. Systems under the control of the master gyro, and operation and care of the main types of gyro-compass	1.5	1.36		1					1
8. Procedures contained in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual	5.0	4.55			3	2			5
9. Content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended	3.0	2.73			3				3

Topics (Knowledge Dimension)	Time Allotment (hrs.)	% of Teaching Time	Thinking Skills (Learning Process Dimension)						No. of Test Items
			Remember	Understand	Apply	Analyze	Evaluate	Create	
10. Content, application and intent of the Principles to be observed in keeping a navigational watch	1.5	1.36				1			1
11. System errors and operational aspects of navigational systems	1.0	0.91				1			1
12. Blind pilotage planning	2.5	2.27			1	1			2
13. Navigational information derived from all sources	2.5	2.27							2
14. The interrelationship and optimum use of all navigational data available for conducting navigation					1		1		
15. Management of operational procedures, system files and data	1.0	0.91		1					1
<ul style="list-style-type: none"> <li>Procurement, licensing and updating of chart data and system software</li> </ul>	1.0	0.91		1					1
<ul style="list-style-type: none"> <li>System and information update</li> </ul>	1.0	0.91		1					1
<ul style="list-style-type: none"> <li>Creation and maintenance of system configuration and backup files</li> </ul>	2.0	1.82							2
<ul style="list-style-type: none"> <li>Creation and maintenance log files</li> </ul>									
<ul style="list-style-type: none"> <li>Creation and maintenance route plan files</li> </ul>									
<ul style="list-style-type: none"> <li>Using ECDIS log-book and track history functions for inspection of system functions, alarm settings and</li> </ul>									

Topics (Knowledge Dimension)	Time Allotment (hrs.)	% of Teaching Time	Thinking Skills (Learning Process Dimension)					No. of Test Items	
			Remember	Understand	Apply	Analyze	Evaluate		Create
user responses									
16. ECDIS playback	2.5	2.27			1	1			2
17. Synoptic chart and forecast area weather	1.5	1.36				1			1
18. Characteristics of various weather systems	1.0	0.91		1					1
19. Ocean current systems	1.0	0.91				1			1
20. Tidal conditions	2.5	2.27				1	1		2
21. Nautical publications on tides and currents	2.0	1.82				2			2
22. Manoeuvring and handling a ship in all conditions									
22.1 Approaching pilot stations and embarking or disembarking pilots	5.0	4.55			2		3		5
22.2 Handling ship in rivers, estuaries and restricted water	4.0	3.64		2	2				4
22.3 Application of constant-rate-of-turn techniques	3.5	3.18		1	3				3
22.4 In shallow water and under-keel clearance	3.0	2.73			2	1			3
22.5 Interaction between passing ships and between own ship and nearby banks (canal effect)	3.5	3.18		1	2				3

Topics (Knowledge Dimension)	Time Allotment (hrs.)	% of Teaching Time	Thinking Skills (Learning Process Dimension)						No. of Test Items
			Remember	Understand	Apply	Analyze	Evaluate	Create	
22.6 Berthing and unberthing in all conditions	5.5	5.00			2	3			5
22.7 Ship and tug interaction	1.0	0.91				1			1
22.8 Propulsion and manoeuvring systems	3.0	2.73		1	2				3
22.9 Anchoring	5.5	5.00		2	2				4
22.10 Dragging anchor									
22.11 Dry-docking	3.0	2.73			2		1		3
22.12 Management and handling of ships in heavy weather	4.0	3.64		1	2				4
22.13 Precautions in manoeuvring to launch rescue boats or survival craft in bad weather	1.0	0.91		1					1
22.14 Methods of taking on board survivors from rescue boats and survival craft	1.0	0.91		1					1
22.15 Manoeuvring and propulsion characteristics of common types of ships	3.0	2.73		1	2				3
22.16 Navigating at reduced speed	1.0	0.91		1					1
22.17 Navigating in or near ice or in conditions of ice accumulation on board	1.0	0.91		1					1

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			Remember	Understand	Apply	Analyze	Evaluate		Create
22.18 Manoeuvring in and near, traffic separation schemes and in vessel traffic service (VTS) areas	3.0	2.73		1	2				3
23. Precautions when beaching a ship	3.0	2.73		1			2		3
24. Action to be taken if grounding is imminent, and after grounding	4.0	3.64		1	1		2		4
25. Refloating a grounded ship with or without assistance									
26. Action to be taken if collision is imminent and following a collision or impairment of the watertight integrity of the hull by any cause	2.5	2.27		1			1		2
27. Assessment of damage control	1.0	0.91					1		1
28. Emergency steering	1.0	0.91		1					1
29. Emergency towing arrangements and towing procedure	1.0	0.91				1			1
30. Operating principles of marine power plants	0.5	0.45							0
31. Ships' auxiliary machinery	0.5	0.45							0
32. General knowledge of marine engineering terms	0.5	0.45							0
<b>TOTAL</b>	<b>110.0</b>	<b>100</b>							<b>100</b>

*Notes:*

- 1. The MTI may add the required number of test items for Multiple Choice type of Questions.*
- 2. For Essay type of test, the MTI should provide rubrics.*