Part B
Course Outline

MTI shall ensure that all trainees shall be given sufficient time to learn, understand and perform the practical training component of this course. It is understood that the number of hours for demonstration/practical work specified in the table below is indicative and allocated per group. Training hours shall be extended depending on trainees' successful acquisition of the required competence.

Topics	Time Allotment *(in hours)*	
	Theoretical	**Demonstration/ Practical Work**
Course Introduction	0.5	-
Competence: Plan a voyage and conduct navigation		
1. Voyage planning and navigation for all conditions	1.5	1.5
2. Routeing in accordance with the General Provisions on Ships' Routeing	1.5	-
3. Reporting in accordance with the General principles for Ship Reporting Systems and with VTS procedures	1.5	1.5
Competence: Determine position and the accuracy of resultant position fix by any means		
4. Position determination in all conditions	-	1.5
Competence: Determine and allow for compass errors		
5. Errors of the magnetic and gyro-compasses	1.5	1.5
6. Principles of magnetic and gyro compasses	1.0	-
7. Systems under the control of the master gyro, and operation and care of the main types of gyro-compass	1.5	-
Competence: Coordinate search and rescue operations		
8. Procedures contained in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual	2.5	2.5
Competence: Establish watchkeeping arrangements and procedures		
9. Content, application and intent of the International Regulations for Preventing Collisions at Sea, 1972, as amended	3.0	-
10. Content, application and intent of the	1.5	-

Topics	Time Allotment *(in hours)*	
	Theoretical	**Demonstration/ Practical Work**
Principles to be observed in keeping a navigational watch		
Competence: Maintain safe navigation through the use of information from navigation equipment and systems to assist command decision making		
11. System errors and operational aspects of navigational systems	-	1.0
12. Blind pilotage planning	1.5	1.0
13. Navigational information derived from all sources	1.5	1.0
14. The interrelationship and optimum use of all navigational data available for conducting navigation	-	
Competence: Maintain the safety of navigation through the use of ECDIS and associated navigation systems to assist command decision making		
15. Management of operational procedures, system files and data • Procurement, licensing and updating of chart data and system software	1.0	-
• System and information update	1.0	-
• Creation and maintenance of system configuration and backup files	-	2.0
• Creation and maintenance log files	-	
• Creation and maintenance route plan files	-	
• Using ECDIS log-book and track history functions for inspection of system functions, alarm settings and user responses	-	
16. ECDIS playback functionality	1.0	1.5
Competence: Forecast weather and oceanographic conditions		
17. Synoptic chart and forecast area weather	0.5	1.0
18. Characteristics of various weather systems	1.0	-
19. Ocean current systems	1.0	-
20. Tidal conditions	1.0	1.5
21. Nautical publications on tides and currents	1.0	1.0
Competence: Manoeuvre and handle a ship in all conditions		

Topics	Time Allotment *(in hours)*	
	Theoretical	**Demonstration/ Practical Work**
22. Manoeuvring and handling a ship in all conditions 22.1 Approaching pilot stations and embarking or disembarking pilots	2.5	2.5
22.2 Handling ship in rivers, estuaries and restricted water	1.5	2.5
22.3 Application of constant-rate-of-turn techniques	1.0	2.5
22.4 In shallow water and under-keel clearance	1.0	2.0
22.5 Interaction between passing ships and between own ship and nearby banks (canal effect)	1.5	2.0
22.6 Berthing and unberthing in all conditions	1.5	4.0
22.7 Ship and tug interaction	-	1.0
22.8 Propulsion and manoeuvring systems	1.0	2.0
22.9 Anchoring	1.5	2.5
22.10 Dragging anchor	1.5	
22.11 Dry-docking	1.0	2.0
22.12 Management and handling of ships in heavy weather	2.0	2.0
22.13 Precautions in manoeuvring to launch rescue boats or survival craft in bad weather	1.0	-
22.14 Methods of taking on board survivors from rescue boats and survival craft	1.0	-
22.15 Manoeuvring and propulsion characteristics of common types of ships	1.0	2.0
22.16 Navigating at reduced speed	1.0	-
22.17 Navigating in or near ice or in conditions of ice accumulation on board	1.0	-
22.18 Manoeuvring in and near, traffic separation schemes and in vessel traffic service (VTS) areas	1.0	2.0

Topics	Time Allotment *(in hours)*	
	Theoretical	**Demonstration/ Practical Work**
Competence: Respond to navigational emergencies		
23. Precautions when beaching a ship	1.0	2.0
24. Action to be taken if grounding is imminent, and after grounding	1.0	2.0
25. Refloating a grounded ship with or without assistance	1.0	
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	1.0	1.5
27. Assessment of damage control	1.0	-
28. Emergency steering	1.0	-
29. Emergency towing arrangements and towing procedure	1.0	-
Competence: Operate remote controls of propulsion plant and engineering systems and services		
30. Operating principles of marine power plants	0.5	-
31. Ships' auxiliary machinery	0.5	
32. General knowledge of marine engineering terms	0.5	
Sub-total	**57.0**	**53.0**
Total Training Hours	**110.0**	

Assessment		

Notes:

1. *It is the responsibility of the MTI to determine the number of hours needed for the conduct of assessment both theoretical and practical as maybe applicable taking into account the number of trainees, number of assessors, number of equipment, vis-à-vis the number of test items for theoretical and the number of exercises for practical assessment.*
2. *Time allotted in the practical demonstration shall be construed as the time allotted for 24 trainees, provided that all trainees have demonstrated the task or scenario specific for management level responsibility, and if the practical exercises are conducted by group, the rotation of roles is required.*