1. Course Title: Bridge Resource Management

2. Scope With reference to convention Imo Model Course:

This course is designed to equip individual with skills, knowledge and attitudes required to -

- Contribute to safe cargo operation of oil and chemical tankers
- Take precautions to prevent hazards
- Contribute to safe operation of deck equipment and machinery
- Apply occupational health and safety precautions & measures.
- Apply precautions and contribute to the prevention of pollution of the marine environment.
- Carry out fire fighting operations
- Respond to emergencies
- Take precautions to prevent pollution of the environment from the release of oil or chemical

in accordance with maritime industry standards.

3. Objective:

After completing the course, the candidates should be able to acquire the knowledge, skills and attitude for the safe cargo operation of oil and chemical tankers, precautions to prevent hazards, prevention of pollution, fire fighting operations, emergencies, precautions to prevent pollution of the environment from the release of oil or chemical.

4. Course Outline Shore base & On board Training:

Sl No	**Knowledge, understanding and proficiency**	**Hours**
1.	Review of basic principles	1
2.	Familiarization with the bridge	1
3.	Standard manoeuvres	.5
4.	Wind and current effects	.5
5.	Attitude	1
6.	Cultural awareness	1
7.	Briefing and debriefing	1
8.	Challenge and response	1
9.	Shallow-water effects	.5
10.	Bank, channel and interaction effects	.5
11.	Planning	1
12.	Authority	1
13.	Management on the bridge	2
14.	Workload and stress	2
15.	Anchoring and single-buoy mooring	.5
16.	Human factor in error	1
17.	Decision making	1
18.	Crisis management	2
19.	Planning and carrying out a voyage in normal and emergency situations	1.5
	TOTAL	**20**

5. Competence Standard/Course Syllabus Checked with up-to-date STCW/IMO Model Course:

Sl No	**Knowledge, understanding and proficiency**
1	**1. Review of basic principles (2 hours)**
1.1	state the basic principles to be observed in keeping a navigational watch as set out in regulation VIII/2 of STCW

	convention and A-VIII/2 STCW code (watch keeping arrangements and principles to be observed):
	- planning prior to each voyage
	- verification and display of planned route
	- deviation from planned route
	- look-out
	- taking over the watch
	- watch keeping under different conditions
	and in different areas
1.2	state the datum used on chats
1.3	explain why corrections for datum shift must be applied to the position obtained by certain navigational aids to
	agree with the position obtained by visual or radar observations
1.4	list methods commonly available for position fixing, with an indication of their accuracy
1.5	state the accuracy of range and bearing measurements required by the performance standards for radar
	equipment
	a. describe factors affecting radar detection, including blind shadow sectors
1.7	explain how the characteristics of targets influence their detection rang
1.8	demonstrate how to obtain a fix based on radar observations and explain possible errors and how to minimize them
1.9	demonstrate the use of parallel indexing techniques for monitoring a ships movement
1.10	demonstrate the use of nautical publications, including:
	- tide tables
	- current charts
	- notices to mariners
	- list of lights
	- sailing directions
2.	**Familiarizations with the bridge (1 hour)**
2. 1	demonstrate the operation of the different bridge instruments
2.2	demonstrate the uses of the rudder and engine controls
2.3	describe and allows for the parallax in the visual system
3.	**standard manoeuvres (2.5 hours)**
3.1	carry out a turning-circle trial with given initial speed rudder angle in loaded condition
3.1	describe how to carry out zig-zag manoeuvres
3.2	carry out a crash stop in loaded condition
3.3	carry out a coasting stop in loaded condition
3.4	repeat one manoeuvre from 3.1 to 3.4 for the same ship in the ballast condition
3.5	record times, positions, headings, speed and other relevant data
3.6	plot the manoeuvres from the recorded data
3.7	compare plots for loaded and ballast conditions
3.8	describe how trim affects the pivot point during turns
3.9	demonstrate how to make a pilot card and a wheelhouse poster
3.10	explain how the information in the manoeuvring information booklet can be used when planning a manoeuvre
4.	**Wind and current effects (2.5 hours)**
4.1	repeat standard manoeuvre with wind and current present for the loaded condition
4.2	repeat the manoeuvre in objective 4.1 for the ballast condition
4.3	record times, positions, headings, speed and other relevant data
4.4	plot the manoeuvres from the recorded date
4.5	compare the result with of the same manoeuvre without wind and current
4.6	compare the results for loaded and ballast conditions
4.7	compare the difference in ship behaviour under the influence of wind, of current and of

	both wind and current
4.8	for various conditions of loading, investigate the effect of wind in slow speed situations
5.	**Attitude (1 hour)**
5.1	demonstrate the establishment of minimum standards of safety margins
5.2	recognize the importance of using all available human resources
6.	**Cultural Awareness (1hour)**
6.1	be sensitive to cultural differences and similarities
6.2	be aware of methods for dealing with cultural differences
7.	**Briefing and debriefing (1 hour)**
7.1	**demonstrate that the master shall**:
7.1.1	lead a pre-departure briefing which includes:
	- presentation of the route plan
	- interaction with the bridge team
	- setting of stipulated requirements
	- identification of possible weak links on the route
	- establishing standards and guidelines to be met during the passage
	- setting the environment for an effective team oriented operation
7.1.2	brief the pilot on the ships characteristics and equipment Brief the pilot on the ships characteristics and equipment Using the pilot card
7.1.3	asks the pilot to present his route plan and give information on local conditions
7.1.4.	demonstrate responsibility to brief and coordinate operational factors with the bridge team
7.1.5	establish an open, interactive and closed loop communication style
7.1.6	during the voyage, brief the team on any significant situations encountered
7.1.7	during the voyage as soon as possible after the voyage, debrief the team on any significant situations encountered
7.2	**Demonstrate that pilot shall:**
7.2.1	present a route plan explaining his navigational intentions, Enabling the bridge team to monitor the progress of the Vessel along the planed track
7,2.2	brief the bridge team on local conditions and traffic Regulations
7.2.3	inform the bridge team before making any change of course and speed
7.2.4	inform the bridge team of any changes or expected changes regarding traffic, weather, visibility, current etc.
7.3	**demonstrate that the bridge team member shall:**
7.3.1	actively support and participate in all briefings and debriefings
7.3.2	ensure that good briefings and communications are used when changing over the watch
7.3.3	actively participate in a working environment that supports effective communications principles
7.3.4	should the principles of good briefings and communication not be used by the master or pilot, the officer on watch should point this out in a diplomatic way so as not to threaten the leadership or command
8	**Challenge and Response (1 hour)**
	8.1 demonstrate that the master shall:
	8.1.1 tablish an open communication style on the bridge that challenge and appropriate responses from the whole bridge team
	8.2 **demonstrate that the pilot shall:**
	8.2.1 request challenges if time permits validate or deny a received challenge, if time does not permit, respond cautiously
	8.3 **demonstrate that the bridge team member shall**:
	8.3.1 acknowledge or challenge concepts
	8.3.2 when conning the vessel, state and discuss his own concepts
	8.3.3 challenge whenever limits are exceeded or there is any doubt about the situation compared to the original concept

9.	**Shallow-water effects (2,5 hours)**
	9.1 define shallow water
	9.2 state that, in shallow water, a ship:
	has increased directional stability
	- has an increase in turning radius
	- carries her way longer and responds slower to changes in engine speed
	- has a smaller fall of speed during turns
	- experiences a change of trim, usually by the head a full hull form
	9.3 state that shallow-water effects become more marked as the depth decreases
	9.4 define squat
	9.5 determine the squat in a given set of circumstances from the manouvering information supplied
	9.6 repeat a standard manoeuvere in shallow water
	9.7 record times, position, headings, speed and other relevant data
	9.8 plot the manoeuvre from the recorded date
	9.9 compare the resulting plot with that of the same manoeuvre carried out in deep water
	9.10 describe the reduction in under-keel clearance resulting from rolling and pitching
10.	**Bank, channel and interaction effects (2.5 hours)**
	10.1 describe the moments and forces affecting a ships behavior when navigating close to a bank or in a narrow channel
	10.2 state that speed should be moderate in rivers, estuaries and similar channels to reduce shallow-water effects
	and to provide reserve power for correcting a sheer
	10.3 explain the need for speed reduction to prevent damage being caused by the ships bow wave or stem wave
	10.4 describe how a passing ship affects a moored ship
	10.5 describe the interaction between passing and overtaking ships
	10.6 describe how to pass or overtake another ship safety in a narrow channel
	10.7 apply a knowledge of bank effect and international in exercises in confined channels
11	**Planning (1hour)**
	11.1 demonstrate that the master shall:
	11.1.1 create an emergency plan, whenever time permits, for
	problems not covered by a standard operating procedure. Such strategy shall consist of specific steps:
	- identify the problem
	- build plans to deal with the problem
	- check the plans with the bridge team members by an interactive briefing
	- perform a summary briefing on the mutually agreed combined plan
	- monitor that the combined is followed
	11.1.2 modify and update the combined plan if conditions change
	11.1 demonstrate that the bridge team members, including the pilot shall:
	11.1.1 actively support the master in his efforts to develop and start an emergency plan
	11.1.2 start development of an emergency plan, when necessary
12	**Authority (1hour)**
	12.1 demonstrate that the master shall:
	12.1.1 coordinate bridge activity so as to bridge about an appropriate balance between his authority and the assertiveness of the bridge team members
	12.1.2 provide corrective management actions when an imbalance occurs
	12.1.3 when pilot is on board, the master shall coordinate bridge activity so as to bridge about appropriate balance between the pilots authority and the assertiveness of the bridge team
	12.2 demonstrate that the bridge team members, including the pilot shall:

	12.2.1 seek to achieve an appropriate balance between assertiveness and authority
	12.2.2 if the level of the masters authority is so low as to threaten the safety of the voyage, the bridge team shall
	increase the level of assertiveness to get essential tasks done and essential decisions made
	12.2.3 if the level of the masters authority is so high as to create excessive stress and workload, the bridge team may- to avoid interpersonal conflicts – lower their level of assertiveness unless safety is threatened
13	**Management on the bridge (2 hour)**
	13.1 demonstrate that the master shall:
	13.1.1 manage using a balance between performance-and people-oriented styles
	13.1.2 vary management style, within the balanced range, as appropriate
	13.1.3 encourage officers to ask for challenging duties
	13.2 demonstrate that the bridge team members, including the pilot shall:
	13. 2.1 normally use a balanced management style
	13.2.2 demonstrate the ability to work with managers of different styles, so as to maintain safe working conditions, without threatening the command or leadership roles
14	**Workload and stress (2 hours)**
	14.1 demonstrate that the master shall:
	14.1.1 pre-plan, anticipating too high or too low workload, taking corrective actions to prevent their development
	14.1.2 use delegation to correct too high workload and too low workload
	14.1.3 set priorities to escape from an overload situation
	14.1.4 manage the total workload, including the of the pilot
	14.1.5 maintain workload at a reasonable level of activity avoiding a false feeling of confidence and habitual thinking
	14.1.6 reduce the pilots high workload by all meads available
	14.1.7 use delegation as a method for training of subordinates
	14.2 demonstrate that the bridge team members shall:
	14.2.1 support the master in maintaining a reasonable workload, especially if the bridge team member tends to deviate towards high or low workload
	14.2.2 maintain workload at a reasonable level of activity avoiding a false feeling of confidence and habitual thing
	14.2.3 reduce pilots high workload by all means available
	14.2.4 assist the master in pre-planning
	14.2.5 encourage delegation and assist the master at the start during delegation
	14.2.6 when appropriate, delegate to other officers correctly, but not lose responsibility for important tasks normally under his/her control
	14.3 demonstrate that the pilot shall:
	14.3.1 support the bridge team in maintaining a reasonable workload
	14.3.2 assist the bridge team at the start and during delegation
	14.3.3 when appropriate, delegate to other officers, but not lose responsibility for important tasks normally under his/her
15	**Anchoring and single-buoy mooring (2,5 hours)**
	15.1 select the position to anchor in a given area
	15.2 take account of advice contained in sailing directions, of the wind and of current or tidal stream in the approach to the anchorage
	15.3 using the ships manoeuvering data, prepare an anchoring plan containing
	- approach tracks and courses to steer
	- wheel-over positions
	- points at which to reduce speed
	- the position at which to reverse the engine
	- the position to drop the anchor

	- means of monitoring progress and determining arrival at critical points
	- prepare a contingency plan outlining the actions to take in the
	event of an engine failure or steering failure at various stages of the approach
	15.4 use a checklist for readiness for anchoring
	15.5 carry out the prepared anchoring plan
	15.6 modify the plan, in necessary, to take account of other ships already anchored
	15.7 maintain a record of engine movements and make appropriate entries in the log-book
	15.8 when anchoring is complete, fix the ships position and check bearings in the log-book
	15.9 prepare a planned approach to a single-buoy mooring, taking account of relevant factors
16	**Human Factor in Error (1 hour)**
	16.1 demonstrate that the master shall:
	16.1.1 take the initiative to apply bridge Resource Management throughout each Voyage
	16.1.2 establish specific preventive measures to guard against external and internal errors
	16.1.3 establish an open climate for debriefing and learning from errors
	16.2 demonstrate that the bridge team members, including the pilot, shall support the master in all aspects above
17	**Decision Making (1hour)**
	17.1 demonstrate that the master shall:
	17.1.1 assess the quality of information- verity its relevance and accuracy
	17.1.2 search for missing information that might influence the decision
	17.1.3 involve bridge team members in the process (if time permits)
	17.1.4 be aware of elements of hidden pressure
	17.1.5 respond appropriately to hidden pressure keeping safety the number one priority
	17.2 demonstrate that the bridge team members, including the pilot, shall actively participate in the process if time permits
18	**Crisis Management (2 hours)**
	18.1 demonstrate that the master shall:
	18.1.1 monitor his/her own and officers stress level during crises
	18.1.2 make sure that bridge team members are aware of the dangers of extreme stress and set standards procedures in place that allow bridge team members to cover for a fellow team member
19	**Planning and carrying out a voyage in normal and emergency situations (10, 5 hours)**
	19.1 prepare a complete passage plan from harbour to harbour, taking account of the following:
	- information from sailing directions and other navigational publications
	- draught, squat and depth of water
	- tide and current
	- weather
	- available of monitoring progress and determining arrival at critical points
	- expected traffic
	- traffic separation schemes
	- contingency plans for critical points of the passage
	19.1 make use of checklists for departure, for arrival and for coastal waters
	19.2 use the ships manoeuvring information, prepare a detailed plan for approach to and departure from a station
	19.3 carry out the planned passage and monitor the progress
	19.4 comply at all times with the requirements of regulation VIII/2 and section A-VIII/2 of the STCW 1995 and COLREG 1972

	19.5 demonstrate compliance with Rule 10 of COLREG 1972 when joining, leaving or navigating in a traffic separation scheme
	19.6 demonstrate skill in approaching or leaving berths under various conditions of wind and tide
	19.7 maintain a record of engine movements and make appropriate entries in the log-book

6. Entry Standard, Selection Criteria of Students:

Trainees or students wishing to gain entry into this course should possess the following requirements:

- **Age:** be not less than 16 years of age.
- **Education & Training:** must have valid seafaring documents.

7. Intake limitation, with specific mention Instructor-student ratio:

The number of trainees should not exceed 24 and the practical training should be undertaken in small groups of more than eight.

8. Qualification and experience of instructors:

Minimum qualification of any instructor or assessor must be Class- I Deck/Engine Officers with tanker knowledge.

9. Qualification and experience of assessors:

Minimum qualification of any instructor or assessor must be Class- I Deck/Engine Officers with tanker knowledge.

10. Details Facilities & Equipment, materials and resources available for the training; Visual aids lecture Notes, Library facilities, Rental documents, Workshops Training Equipment: Navigational, Engineering, Communication, Seamanship etc:

- Projectors and slides
- Multimedia and videos
- Advanced audio visual systems
- Tanker simulator
- Dummy tanker ships, tank lid, manifold
- Pump model Room
- 02 nos Generator set
- Synchronizing panel board

11. Conduct of Training with number of classroom lectures, practical work use of simulator, video etc:

Period → Day ↓	0900-0945	0945-1030	1030-1115	1115-1145	1145-1230	1230-1315	1315-1400	1400-1500	1500-1545	1545-1630	1630-1715	1715-1800
1st Day	Review of basic principles	Familiarization with the bridge	Standard manoeuvres	Tea Break	Wind and current effects	Attitude	Cultural awareness	Launch Break	Briefing and debriefing	Challenge and response	Workload and stress	
2nd Day	Shallow-water effects	Bank, channel and interaction effects	Planning		Management on the bridge		Authority		Anchoring and single-buoy mooring	Human factor in error	Planning and carrying out a voyage in normal and emergency situations	
3rd Day	Practical				Crisis management		Decision making		Assessment			

12. Total duration of Training; Duration of Practical's:

Training period is of 03 days, (20 Hours)

a. Theory - 16 Hours
b. Practical - 04 Hours

13. Assessment procedure, whether independent of instruction or continuous performance evaluation:

Course end assessment shall be carried out to ensure adequate knowledge, understanding & competence of the candidate.

A variety of source of evidence are used which include evidence of candidate's ability, under realistic condition. Short answers, multiple choice, fill in the blanks and true/false type questions in a written test are used for assessment includes direct observation, oral questioning and role play.

14. Formats of certificate to be issued with correct reference to STCW and reference to approval and authorization by the Department of Shipping and contact point of the issuing institution for verifying authenticity:

Cert No: 2016.02.064.0000814 DoS Reg. No: 2016.02.064.0023994

গণপ্রজাতন্ত্রী বাংলাদেশ সরকার

GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH

ন্যাশনাল মেরিটাইম ইন্সটিটিউট

NATIONAL MARITIME INSTITUTE

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Phone : +88-031-740569, Fax : +88-031-800620, E-mail : info@nmi.gov.bd

Course Completion Certificate

BRIDGE RESOURCE MANAGEMENT AND APPLICATION OF LEADERSHIP AND MANAGERIAL SKILLS

This is to certify that, Mr. MOHAMMED KHASRU UDDIN Son of Mr. JALAL UDDIN AHMED, Date & Place of Birth 01-01-1963 & CHITTAGONG, C.D.C.No. C/O/01192 has successfully completed course on **BRIDGE RESOURCE MANAGEMENT AND APPLICATION OF LEADERSHIP AND MANAGERIAL SKILLS** conducted from **26-09-2016** to **03-10-2016** at the National Maritime Institute, Chittagong, Bangladesh

Issue Date: 05-10-2016 and Expiry Date 05-10-2021

Has been duly qualified and satisfied the condition in accordance with the provisions of Regulation A-11/2 of Annex to the international convention on standards of training, certification and watch keeping for seafarers(STCW),1978 as amended.

CERTIFIED TRAINING INSTITUTE

Signature of the Holder

Principal

to verify this certificate visit- **www.nmi.gov.bd**

15. Maintenance of records in Data-base for facilitation of checking including assessments:
NMI will maintain a data-base of all the students who have completed the course. The following records for each individual will be kept so as to ensure that the certificate is issued to a candidate who has met the requirements as laid down by the governing authority regarding issuance of a certificate on Bridge Resource Management.

- Application form
- Assessment papers after completion of course
- Attendance Sheet
- Attested Xerox copy of the issued certificates & licenses
- A registered data-base in hard copy and soft form

16. Internal Quality Standard System if any. Students Impressions, past results:
The institute maintains quality standard system ISO 9001:2008, Certified by DNV GL

17. Course notice served, course conducted as per course notice, progression report served:
Will be complied as per DOS Instruction.

18. Attendance of Students and Instructors:
Students and Instructor attendance sheet attached.

NATIONAL MARITIME INSTITUTE

TRAINING RECORD

Instructor: ATAUR RAHMAN

Batch No: 01

Subject: BRIDGE RESOURSE MANAGEMENT & APPLICATION OF LEADERSHIP AND TAEM WORKING SKILLS

Course Duration: 18-09-2016 to 24-09-2016

Attendance:

Name & rank	Sign		Name & rank	Sign
A B M DELEAR HOSSAIN				
SHEIKH MOHAMMED MOHIUDDIN CHOWDHURY				
MD. MOZIBUR RAHMAN				
MD. MOZAMMEL HUSSAIN TIPU				
MOHAMMAD TANVIR RAHMAN				

Signature
Management Representative

Signature
Principal