1. Course Title: Advance training for liquefied gas tanker cargo operation

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 GAS tankers
- Knowledge of liquefied gas tanker design, systems, and equipment
- Contribute to Loading, unloading, care and handling of cargo
- Take precautions to prevent hazards & safety relevant to liquefied gas tankers.
- Proficiency to calibrate and use of monitoring and gas-detection systems, instruments and equipment
- 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 gas.

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 gas tankers, precautions to prevent hazards, prevention of pollution, firefighting operations, Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL), emergencies, precautions to prevent pollution of the environment from the release of gas.

4. Course Outline Shore base & On board Training:

Sl No	**Knowledge, understanding and proficiency**	**Hours**
1.	Knowledge of liquefied gas tanker design, systems, and equipment	8.0 hrs
2.	Loading, unloading, care and handling of cargo	8.0 hrs
3.	Continue…Loading, unloading, care and handling of cargo	8.0 hrs
4.	•Knowledge and understanding of basic chemistry and physics and the relevant definitions related to the safe carriage of liquefied gases in bulk in ships •Understanding of Information on a Material Safety Data Sheet (MSDS) •Proficiency to calibrate and use of monitoring and gas-detection systems, instruments and equipment. •Knowledge and understanding of dangers of non-compliance with relevant rules/regulations	8.0 hrs
5.	•Knowledge and understanding of the hazards and control measures associated with liquefied gas tanker cargo operations. •Knowledge and understanding of safe working practices including risk assessment and personal shipboard safety relevant to liquefied gas tankers.	8.0 h
6.	•Knowledge and understanding of liquefied gas tanker emergency procedures •Understanding of procedures to prevent pollution of the environment •Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations	6.0 h

	as commonly applied	
7.	Assessment and debrief	2.0 h
	Total	**48h**

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

Knowledge, understanding and proficiency	Lecture, demo, Practical
Day One	
Knowledge of liquefied gas tanker design, systems, and equipment, including: .1 types of liquefied gas tankers .2 general arrangement and construction .3 Cargo containment systems, including materials of construction and insulation .4 cargo handling equipment and instrumentation .5 emergency shutdown system .6 knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation	 1.0h 1.0h 2.0h 2.0h 1.0h 1.0h 8.0 hrs
Day Two	
Loading, unloading, care and handling of cargo: .1 knowledge of the effect of bulk liquid cargoes on trim and stability and structural integrity .2 proficiency in tanker safety culture and implementation of safety management requirements .3 proficiency to apply safe preparations, procedures and checklists for all cargo operations	 2.0h 2.0h 4.0h 8.0 hrs
Day Three	
Continue…Loading, unloading, care and handling of cargo: .4 loading, unloading and care in transit, explain pre-docking preparation-warm up, inerting, gas freeing. .5 proficiency to perform cargo measurements and calculations.	 6.0h 2.0h 8.0 hrs
Day Four	
Knowledge and understanding of basic chemistry and physics and the relevant definitions related to the safe carriage of liquefied gases in bulk in ships, including: .1 properties and characteristics .2 pressure and temperature, including vapour pressure/temperature relationship. .3 types of electrostatic charge generation .4 chemical symbols **Understanding of Information on a Material Safety Data Sheet (MSDS)** **Proficiency to calibrate and use of monitoring and gas-detection systems, instruments and equipment. Knowledge and understanding of dangers of non-compliance with relevant rules/regulations**	4.0h 2.0 h 2.0 h 8.0 hrs

Day Five	
Knowledge and understanding of the hazards and control measures associated with liquefied gas tanker cargo operations, including: .1 health hazard .2 environmental hazards .3 reactivity hazards .4 explosion and flammability hazards .5 corrosion hazard .6 source of ignition .7 electrostatic hazard .8 toxicity hazard .9 vapour, leaks and clouds .10 extremely low temperature .11 pressure hazards Hazard Control .1 inerting, drying and monitoring techniques .2 anti-static measure .3 ventilation .4 segregation .5 cargo inhibition .6 importance of cargo compatibility .7 atmospheric control .8 gas testing	3.0 h 3.0 h
Knowledge and understanding of safe working practices including risk assessment and personal shipboard safety relevant to liquefied gas tankers	2.0 h
Day Six	
Respond to emergencies **Knowledge and understanding of liquefied gas tanker emergency procedures, including:** Actions to be taken following collision, grounding or spillage and envelopment of the ship in toxic or flammable vapour	2.0 h
Pollution prevention **Understanding of procedures to prevent pollution of the environment**	2.0 h
Rules and regulations **Knowledge and understanding of relevant provisions of the International Convention for the Prevention of Pollution from Ships (MARPOL) and other relevant IMO instruments, industry guidelines and port regulations as commonly applied**	2.0 h
Assessment and debrief	2.0 h
	TOTAL = 48 hrs

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

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
1st Day	Knowledge of oil tanker design, systems and equipment			Tea Break	Knowledge of oil tanker design, systems and equipment			Launch Break	Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation	
2nd Day	Knowledge of oil tanker design, systems and equipment				Loading, unloading, care and handling of cargo				Proficiency in tanker safety culture and implementation of safety-management system	
3rd Day	Knowledge and understanding of oil cargo related operations				Knowledge of oil tanker design, systems and equipment				Knowledge and understanding of monitoring and safety systems	
4th Day	Knowledge and understanding of oil cargo related operations				Knowledge and understanding of oil cargo related operations				Development and application of cargo-related operation	
5th Day	Knowledge and understanding of the physical and chemical properties of oil cargoes				Knowledge and understanding of oil cargo related operations				Ability to calibrate and use monitoring and gas-detection systems	
6th Day	Hazards and control measures associated with oil tanker cargo operations				Actions to be taken following collision, grounding, or spillage		MARPOL		Ability to manage and supervise personnel with cargo-related responsibilities	
7th Day	Hazards and control measures associated with oil tanker cargo operations				Knowledge of pump theory and characteristics, including types of cargo pumps and their safe operation		Loading, unloading, care and handling of cargo		Knowledge of the effect of bulk liquid cargoes on trim, stability and structural integrity	
8th Day	Knowledge of medical first aid procedures on board oil tankers		MARPOL		Proficiency in tanker safety culture and implementation of safety-management system		Physical and chemical properties of oil cargoes		safe working practices, including risk assessment and personal shipboard safety relevant to oil tankers:	
9th Day	Practical				Practical				Practical	
10th Day	Knowledge and understanding of monitoring and safety systems		Preventing pollution		Oil tanker emergency procedures		Preventing pollution		Assessment	

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

Training period is of 06 days, (48 Hours)

a. Theory - 42 Hours

b. Practical - 06 Hours

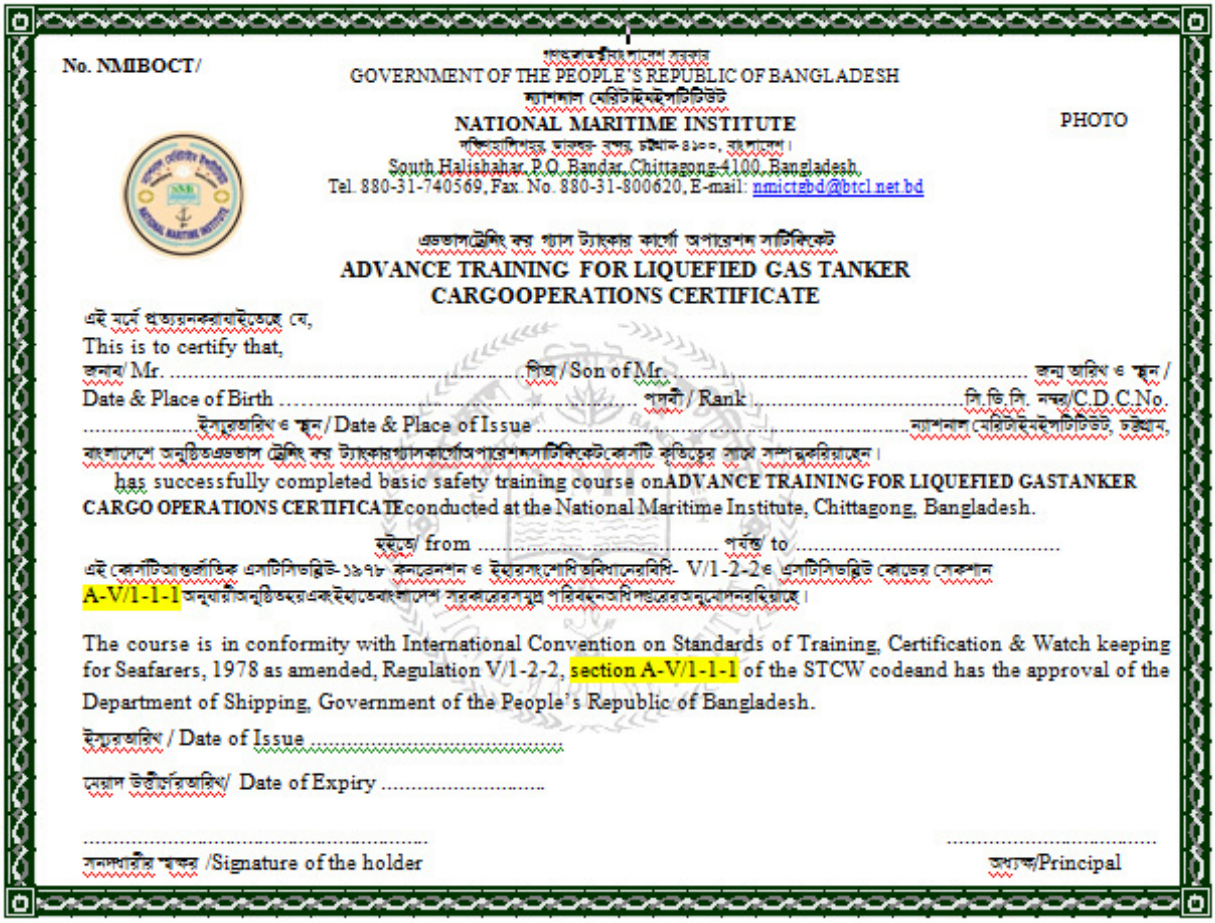
13. Assessment procedure, whether independent of instruction or continuous performance evaluation:

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:

Annex- 02



No. NMIBOCT/

গণপ্রজাতন্ত্রীবাংলাদেশসরকার
GOVERNMENT OF THE PEOPLE'S REPUBLIC OF BANGLADESH
ন্যাশনাল মেরিটাইমইন্সটিটিউট
NATIONAL MARITIME INSTITUTE
PHOTO
দক্ষিণহালিশহর, বন্দর, চট্টগ্রাম-৪১০০, বাংলাদেশ।
South Halishahar, P.O. Bandar, Chittagong-4100, Bangladesh.
Tel. 880-31-740569, Fax. No. 880-31-800620, E-mail: nmictgbd@btcl.net.bd

এডভান্সট্রেনিং ফর গ্যাস ট্যাংকার কার্গো অপারেশন সার্টিফিকেট
ADVANCE TRAINING FOR LIQUEFIED GAS TANKER CARGOOPERATIONS CERTIFICATE

এই মর্মে প্রত্যয়নকরাযাইতেছে যে,
This is to certify that,
জনাব/ Mr. ..... পিতা / Son of Mr. ..... জন্ম তারিখ ও স্থান /
Date & Place of Birth ..... পদবী / Rank ..... সি.ডি.সি. নম্বর/C.D.C.No.
..... ইস্যুরতারিখ ও স্থান / Date & Place of Issue ..... ন্যাশনাল মেরিটাইমইন্সটিটিউট, চট্টগ্রাম,
বাংলাদেশে অনুষ্ঠিতএডভান্স ট্রেনিং ফর ট্যাংকারগ্যাসকার্গোঅপারেশনসার্টিফিকেটকোর্সটি কৃতিত্বের সাথে সম্পন্নকরিয়াছেন।
has successfully completed basic safety training course onADVANCE TRAINING FOR LIQUEFIED GASTANKER CARGO OPERATIONS CERTIFICATEconducted at the National Maritime Institute, Chittagong, Bangladesh.

হইতে/ from ..... পর্যন্ত/ to .....
এই কোর্সটিআন্তর্জাতিক এসোসিনভল্বিউ- ১৯৭৮ কনভেনশন ও ইহারসংশোধিতবিধানেরবিধি- V/1-2-2ও এসোসিনভল্বিউ কোডের সেকশন A-V/1-1-1অনুযায়ীঅনুষ্ঠিতহয়এবংইহাতেবাংলাদেশ সরকারেরনৌ পরিবহনঅধিদপ্তরেরঅনুমোদনরহিয়াছে।

The course is in conformity with International Convention on Standards of Training, Certification & Watch keeping for Seafarers, 1978 as amended, Regulation V/1-2-2, section A-V/1-1-1 of the STCW codeand has the approval of the Department of Shipping, Government of the People's Republic of Bangladesh.

ইস্যুরতারিখ / Date of Issue .....

মেয়াদ উত্তীর্ণেরতারিখ/ Date of Expiry .....

....
ধারকের স্বাক্ষর /Signature of the holder অধ্যক্ষ/Principal

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.

Annex- 03

NATIONAL MARITIME INSTITUTE

TRAINING RECORD

Instructor:

Venue:

Subject:

Brief description on training material:

Attendance:

Name & rank	Sign	Name & rank	Sign	Name & rank	Sign

Signature
Management Representative

Signature
Principal