Maldives National Skills Development Authority

National Competency Standard for Marine Engineering

Standard Code: TRA-05L5-V1-24

Qualification Name: National Diploma in Marine Engineering

FOREWORD

The pivotal role of the Maldives National Skills Development Authority (MNSDA) in meticulously implementing and expanding Technical and Vocational Education & Training (TVET) exemplifies the steadfast commitment of the Maldives to build a skilled and resilient workforce. This commitment is evident from the strategic formulation of National Standards and the establishment of a comprehensive framework for training and certification.

Under the Higher Education and Training Act 7/2021, the MNSDA assumes an instrumental role, reflecting the government's unwavering dedication to streamlining TVET policies and procedures. This includes the establishment of a robust system for accrediting and registering both Institution Based Training (IBT) and Employer Based Training (EBT) providers. The MNSDA's active involvement in conducting the National Apprenticeship Program (NAP), National Trade Testing and Certification (NTTC), and the issuance of National Certificates reflects a comprehensive approach to ensure elevated quality standards and competency within the workforce.

The National Competency Standards (NCS) revised through the Maldives Enhancing Employability and Resilience of Youth (MEERY) project accentuates the commitment to updating and sustaining contemporary skill sets aligned precisely with industry demands. Deliberate efforts to revise existing NCS, coupled with the development of curriculum, teaching materials, resource books, and logbooks, attest to our dedication to ensuring the ongoing relevance and currency of the TVET system in the Maldives.

The active engagement of Technical Panels and Employment Sector Councils in the NCS development and approval process, coupled with alignment to the Maldives National Qualification Framework (MNQF) and accreditation by the Maldives Qualifications Authority (MQA), certifies that the TVET system not only remains highly responsive but also ensures the quality standards demanded by industries. This approach enables the system to effectively meet the diverse needs of industries and adapt to the evolving economic landscape.

The collaborative development of the National Diploma in Marine Engineering by the MNSDA, MEERY, and the Maldives Institute of Technology exemplifies the practical implementation of TVET initiatives. This training package represents a critical stride towards addressing the requisite skills while fostering opportunities to integrate sustainable economic development within the TVET framework.

Dr. Zahra Mohamed

Chief Executive Officer

Maldives National Skills Development Authority

EMPLOYMENT SECTOR COUNCILS			
#	Name	Designation	Organisation
01	Ahmed Shameem	Director General	Ministry of Transport and Civil Aviation
02	Mohamed Jamshad	Colonel	Maldives National Defence Force
03	Ahmed Shujau	Chief Inspector of Police	Police
04	Aishath Neesha Khaleel (Chair)	General Manager	Maldives Ports Limited
05	Mohamed Zaid	Head of Center for Maritime Studies	MNU / Maritime Center
06	Asiyath Haneef	Training Manager at Maldivian	Asiyath Haneef
07	Ahmed Shahid	Maritime Expert	Ahmed Shahid
08	Ismail Fariq	Chief Sales Officer	MTCC
09	Fathimath Haula	Program Officer	Maldives National Skills Development Authority

National Occupational Standard has been endorsed by:
Aishath Neesha Khaleel (Chair) Chairperson Transport Sector Council
Maldives National Skills Development Authority Umar Zahir Office Building, 5th Floor, Orchid Ma higun, HulhuMale' , Republic of Maldives.
Date of Endorsement: 29/5/2024

TECHNICAL SUPPORT			
#	Name	Designation	Organisation
01			
02			

TECHNICAL PANEL MEMBERS			
#	Name	Designation	Organisation
01	Ismail Zameel	Associate Engineer	Maldives Airports Company
02	Rilwan Mohamed	Lecturer	Maldives Polytechnic
03	Ahmed Abdul Rahman	Subinspector of Police	Maldives Police Services Asessor at MNSDA
04			
05			
06			
07			
08			
09			

VERSION	DEVELOPER	DATE	STANDARD CODE
V1	Maldives Institute of Technology	3/2/2024	TRA-05L5-V1-24

Standard Development Process

The development of the “National Diploma in Marine Engineering” Standard involved a comprehensive study of Marine Engineering occupations in Maldivian workplaces, with a focus on construction enterprises. Job descriptions and international occupational trends were analysed to draft an initial Occupational Standard. This draft will undergo further refinement through a Technical Panel (TP) from Maldivian workplaces, ensuring incorporation of competencies and edits. The TP will provide technical input, suggesting changes to the standard, until a final draft is agreed upon. The approved Final Draft will then be submitted to the Construction Employment Sector Council for endorsement and validation. A brief report detailing the compilation process will accompany the Standard for the Council's review, and any recommended changes will be addressed before final endorsement.

With the endorsement from the Construction Employment Sector Council, the finalised National Occupational Standard for Marine Engineering will be submitted to the Maldives Qualification Authority (MQA) for final approval. Upon receiving MQA approval, the standard will be officially published on the Maldives National Skills Development Authority (MNSDA) website. This publication will enable training providers in the Maldives to utilise the standard for delivering the Marine Engineering program, ensuring its widespread implementation across the country.

Description of “Marine Engineering”

The "Marine Engineering" standard serves as a foundational guideline designed to enhance essential skills across diverse industries. This program is dedicated to equipping individuals with fundamental competencies crucial for effective environmental stewardship and sustainability in maritime settings. Participants will gain practical insights into core techniques and practices, emphasising the range of subjects, including marine propulsion systems, navigation, ship design, and maritime regulations.

The certification acts as an entry point for professionals venturing into the application of Marine Engineering principles, providing a robust foundation in the fundamental skills necessary for implementing and managing environmentally responsible practices specific to maritime operations and maintenance. This standard particularly valuable for individuals by furnishing them with specialised knowledge and hands-on skills, empowering them to explore a wide array of globally relevant career prospects in the maritime sector while actively contributing to safety, regulatory compliance, and technological advancements within the field.

Proposed Qualification Titles

Following are the recommended titles by the selected internal expert team of MIT for the National Diploma in Marine Engineering.

1. Nil

Job opportunities upon completion of “National Diploma in Marine Engineering”

Upon successful completion of the National Diploma in Marine Engineering, students can work in the following jobs.

1. *Marine Engineer*
2. *Maritime Operation Manager*

KEY FOR CODING

Coding Competency Standards and Related Materials

DESCRIPTION	REPRESENTED BY
Industry Sector as per ESC (Three letters)	Construction Sector (CON) Fisheries and Agriculture (FNA) Information, Communication and Technology (ICT) Transport Sector (TRN) Tourism Sector(TOU) Social Sector (SOC) Foundation (FOU)
Standard Number - Occupation with in an industry sector	Two digits 01-99
Common Competency	CM
Core Competency	CC
Unit Number - Occupation with in a Standard	Three digits 01-99
MNQF level of qualification	L1, L2, L3, L4 etc.
Version Number	V1, V2 etc.
Separator	-
Year of Last Review of standard, qualification	Two digits responding to the year of last review, example 23 for the year 2023
Qualification Code	Refers to Standard code in cover page

1. Endorsement Application for Qualification 01

2. NATIONAL DIPLOMA IN MARINE ENGINEERING

3. Qualification code: TRA-05L5-V1-24	**Total Number of Credits: 145**

4. Purpose of the qualification

This qualification is designed to equip individuals with the necessary knowledge, skills, and competencies essential for success in diverse roles within the field of Marine Engineering. Tailored for those involved in the dynamic and complex maritime industry, the qualification is meticulously structured to provide learners with practical skills and theoretical insights crucial for the effective implementation and management of engineering systems in marine environments. Successful completion of this qualification prepares individuals for roles requiring expertise in the maintenance, operation, and optimisation of marine engineering systems, contributing to the advancement and efficiency of maritime activities.

5. Regulations for the qualification	National Diploma in the occupation of Marine Engineering will be awarded to those who are competent in units 1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18+19

6. Schedule of Units

Unit No.	Unit Title	Code
Common Competencies		
01	Apply writing and ICT skills	TRA-04-CM01-V1-24
02	Manage customer experience and relationship	TRA-04-CM02-V1-24
03	Demonstrate leadership and management skills	TRA-04-CM03-V1-24
04	Conduct research methods and data management	TRA-04-CM04-V1-24
05	Apply engineering mathematics	TRA-04-CM05-V1-24
06	Apply engineering science	TRA-04-CM06-V1-24
Core Competencies		
07	Understand maritime legislation and regulations	TRA-05-CC01-V1-24
08	Undertake safety and emergency procedures	TRA-05-CC02-V1-24
09	Ensure compliance with pollution prevention requirements	TRA-05-CC03-V1-24
10	Apply drafting skills	TRA-05-CC04-V1-24
11	Perform welding, carpentry, and moulding	TRA-05-CC05-V1-24
12	Apply principles of marine mechanics	TRA-05-CC06-V1-24
13	Understand knowledge of marine diesel engines and systems	TRA-05-CC07-V1-24
14	Understand knowledge of marine auxiliary machinery and equipment	TRA-05-CC08-V1-24
15	Understand knowledge of marine electrical systems and electrotechnology	TRA-05-CC09-V1-24
16	Maintain and repair marine electrical and electronic equipment	TRA-05-CC10-V1-24

17	Understand knowledge of marine control systems and automation	TRA-05-CC11-V1-24
18	Understand knowledge of ships and ship routines	TRA-05-CC12-V1-24
19	Operate and maintain marine engine	TRA-05-CC13-V1-24
7. Accreditation requirements	The training provider should have made arrangements to ensure students are provided with adequate theory and practicals for them to develop all the required knowledge and skills stipulated in the National Competency Standard.	
8. Recommended sequencing of units	As appearing under the section 06	

Unit Details

Unit No.	Unit Title	Code	Level	No. of credits	Credit hours	Contact hours
01	Apply writing and ICT skills	TRA-04-CM01-V1-24	V	10	100	50
02	Manage customer experience and relationship	TRA-04-CM02-V1-24	V	10	100	50
03	Demonstrate leadership and management skills	TRA-04-CM03-V1-24	V	10	100	50
04	Conduct research methods and data management	TRA-04-CM04-V1-24	V	10	100	50
05	Apply engineering mathematics	TRA-04-CM05-V1-24	V	15	150	75
06	Apply engineering science	TRA-04-CM06-V1-24	V	10	100	50
07	Understand maritime legislation and regulations	TRA-05-CC01-V1-24	IV	08	80	40
08	Undertake safety and emergency procedures	TRA-05-CC02-V1-24	IV	08	80	40
09	Ensure compliance with pollution prevention requirements	TRA-05-CC03-V1-24	V	03	30	15
10	Apply drafting skills	TRA-05-CC04-V1-24	V	06	60	30
11	Perform welding, carpentry, and moulding	TRA-05-CC05-V1-24	V	06	60	30
12	Apply principles of marine mechanics	TRA-05-CC06-V1-24	V	07	70	35
13	Understand knowledge of marine diesel engines and systems	TRA-05-CC07-V1-24	V	08	80	40
14	Understand knowledge of marine auxiliary machinery and equipment	TRA-05-CC08-V1-24	V	07	70	35
15	Understand knowledge of marine electrical systems and electrotechnology	TRA-05-CC09-V1-24	V	06	60	30
16	Maintain and repair marine electrical and electronic equipment	TRA-05-CC10-V1-24	V	06	60	30
17	Understand knowledge of marine control systems and automation	TRA-05-CC11-V1-24	V	05	50	25
18	Understand knowledge of ships and ship routines	TRA-05-CC12-V1-24	V	04	40	20
19	Operate and maintain marine engine	TRA-05-CC13-V1-24	V	06	60	30
Total				145	1450	725

Packaging of National Qualifications:

National Diploma in Marine Engineering will be awarded to those who are competent in units 1+2+3+4+5+6+7+8+9+10+11+12+13+14+15+16+17+18+19

Qualification Code: TRA-05L5-V1-24

COMPETENCY BASED ASSESSMENT

The final assessment of the National Competency-Based Programmes conducted by the Maldives National Skills Development Authority (MNSDA) is a competency-based assessment.

The Competency-Based Assessment ensures that the students' performance meets the requirements specified in the National Competency Standards (NCS). This assessment approach is designed to verify that graduates are job-ready and meet established occupational competency requirements within their respective fields.

Eligibility for Final Assessment

To be eligible for the final Competency-Based Assessment, students must fulfil the following conditions:

- achieve a **minimum of 80%** attendance
- deemed competent in each of the units of the programme in the pre-assessment

Competency-Based Assessment Process

Upon submission of the Pre-assessment report by the training provider, MNSDA will check for all the necessary supporting documents and conduct Competency-Based Assessment through a National Assessor registered with MNSDA. It is important to note that any trainer involved in the training process is **not permitted** to conduct the assessment to maintain impartiality and integrity of the process.

The final Competency-Based Assessment conducted by MNSDA includes both:

- **Theory**: Evaluating students' knowledge and understanding of key theoretical aspects of the competency.
- **Practical:** Assessing hands-on skills and application of knowledge in real-world or simulated environments.

Once the assessment is completed, the National Assessor will send the Competency-Based Assessment Report to MNSDA.

Competency Status Requirement

For certification to be granted, the student must be officially declared **"Competent"** in each of the units of the programme by the National Assessor.

Conclusion

Competency-Based Assessment is a critical component in ensuring the quality and credibility of technical and vocational skills-based training. By adhering to the outlined procedure, MNSDA upholds the standards required to certify students who are fully prepared to meet industry demands.