



Maldives National Skills Development Authority



National Competency Standard for Marine Mechanic

Standard Code: TRA-01L4-V3-24

Qualification Name: National Certificate IV in Marine Mechanic

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 Certificate IV in Marine Mechanic 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	Lieutenant colonel	Maldives National Defence Force
03	Ahmed Shujau	Inspector of Police	Police
04	Aishath Neesha Khaleel	Assistant General Manager	Maldives Ports Limited
05	Mohamed Zaid	Head of Center for Maritime Studies	MNU / Maritime Center
06	Ahmed Nazeer	Industry Expert	Industry Expert
07	Ahmed Shahid	Industry Expert	Industry Expert
08	Ismail Fariq	General Manager, Marine Transport Division	MTCC
09	Shakeeba Ali	Director General	Maldives National Skills Development Authority
National Occupational Standard has been endorsed by:			
<p>Aishath Neesha Khaleel Chairperson Transport Sector Council</p> <p>Maldives National Skills Development Authority Umar Zahir Office Building, 5th Floor, Orchid Ma higun, HulhuMale' , Republic of Maldives.</p>			
Date of Endorsement: 25/10/2023		Date of Revision: 25/10/2023	

TECHNICAL SUPPORT			
#	Name	Designation	Organisation
01			
02			

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	Maldives Police Services
04	Aishath Neesha Khaleel	General Manager	Maldives Ports Limited
05	Mohamed Zaid	Head of Center for Maritime Studies	MNU / Maritime Center
06	Asiyath Haneef	Training Manager at Maldivian	Maldivian
07	Ahmed Shahid	Maritime Expert	-
08	Ismail Fariq	Chief Sales Officer	Maldives Transport and Construction Company
09	Fathimath Haula	Programme Officer	Maldives National Skills Development Authority

National Occupational Standard has been endorsed by:



Aishath Neesha Khaleel
Chair person
Transport Sector Council

Maldives National Skills Development Authority
Umar Zahir Office Building, 5th Floor,
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Date of Endorsement: 25.10.2023

Date of Revision: 25.10.2023

TECHNICAL SUPPORT

#	Name	Designation	Organisation
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02			

TECHNICAL PANEL MEMBERS			
#	Name	Designation	Organisation
01	Ahmed Zubair Adam	Executive board member	National Boats Association of Maldives
02	Ismail Zameel	Director	Maldives Airports Company Limited
03	Rilwan Mohamed	Lecturer	Maldives Polytechnic
04	Ahmed Abdul Rahman	Sub Inspector of Police	Maldives Police Services
05			
06			
07			
08			
09			

VERSION	DEVELOPER	DATE	STANDARD CODE
V3	Maldives Institute of Technology	12/08/2023	TRA-01L4-V3-24

Standard Review Process

To begin with Marine Mechanic occupation competencies were profiled through study of the occupations across the Maldivian workplaces aligned to the principles of "Functional Analysis", a methodology used for reviewing Competency Standards. Referred occupational profiling process compared existing competency units incorporated within the National Competency Standard of Level IV in Marine Mechanic program.

Draft Review of the occupational standard is then compiled and submitted to the Technical Panel (TP) organised by the Maldives National Skills Development Authority (MNSDA). The Draft Standard is then edited based on comments from TP members under the direct observation of MNSDA. With series of reviewing and editings, TP approved standard is then tabled at Employment Sector Council (ESC) meeting for endorsement.

All the Standards of MNSDA are endorsed from the ESC before being published on its website.

Description of “Marine Mechanic”

Marine Mechanic is designed to equip individuals with sophisticated competencies essential for comprehensive marine mechanical maintenance. Participants will delve into advanced techniques and practices, gaining insights into complex diagnostics, repairs, and the intricate workings of marine engines and systems.

This certification serves as a pathway for professionals seeking to enhance their expertise in marine mechanics, providing advanced skills crucial for addressing the intricate demands of the field.

Recommended changes to the existing National Certificate IV in Marine Mechanic Standard

Following are the changes recommended by the selected Technical Panel and Employment Sector Council of MNSDA for the National Certificate IV in Marine Mechanic Standard.

1. *To prepare participants holistically, units such as writing technical reports and technical drawing are included into the standard.*
2. *Besides that, conceptual engineering knowledge is also strengthened with inclusion mathematics and science units into the standard.*
3. *Knowledge and skills of remaining units are similar although few changes are brought into the name and scope of the knowledge and skills to be taught as using the reviewed and revised standard.*
4. *Additional unit on providing care to the environments is also included into the reviewed and revised standard.*
5. *Competency unit mapping is made to align with the MQA standards and protocols on course development.*

Job opportunities upon completion of “National Certificate IV in Marine Mechanic”

Upon successful completion of the National certificate IV in Cashiering, students can work in the following jobs.

1. *Marine Mechanic*
2. *Marine Technician*
3. *Boat Repair Technician*
4. *Marine Engineering Assistant*

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 an 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 CERTIFICATE IV IN MARINE MECHANIC		
3. Qualification code: TRA-01L4-V3-24		Total Number of Credits: 120
4. Purpose of the qualification The holders of this qualification will be will be competent to work in the Maritime Sector as a Marine Mechanic. The level one qualification presented here will facilitate preparing students to the entry-level workplace tasks and the competency units are mapped in such a way to fulfil the knowledge and skills requirements of the “Mechanic” occupation within the local Maritime Industry. Referred mechanics can undertake general functional assessment of the marine engines and its systems and perform necessary repair and maintenance tasks.		
5. Regulations for the qualification		National Certificate IV in the Marine Mechanic Qualification 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
6. Schedule of Units		
Unit No.	Unit Title	Code
Common Competencies		
01	Write technical reports	TRA-01-CM07-V3-24
02	Apply mathematics for marine mechanic	TRA-01-CM08-V3-24
03	Apply science for marine mechanic	TRA-01-CM09-V3-24
04	Prepare basic technical drawing	TRA-01-CM10-V3-24
05	Plan to undertake a routine task	TRA-01-CM11-V3-24
Core Competencies		
06	Understand maritime legislation and regulations	TRA-01-CC10-V3-24
07	Undertake safety and emergency procedures	TRA-01-CC11-V3-24
08	Apply environmental regulations in the marine service industry	TRA-01-CC12-V3-24
09	Repair and maintain marine engine systems	TRA-01-CC13-V3-24
10	Remove, repair and install marine transmission systems	TRA-01-CC14-V3-24
11	Dismantle, repair and assemble marine AC generators & pumps	TRA-01-CC15-V3-24
12	Repair and install marine electronic systems and components	TRA-01-CC16-V3-24
13	Diagnose and repair marine fuel systems	TRA-01-CC17-V3-24
14	Service and repair of marine HVAC systems	TRA-01-CC18-V3-24
15	Inspect, repair and maintenance of hulls	TRA-01-CC19-V3-24
16	Repair and maintain RO Plant	TRA-01-CC20-V3-24

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
1	Write technical reports	TRA-01-CM07-V3-24	IV	04	40	20
2	Apply mathematics for marine mechanic	TRA-01-CM08-V3-24	IV	08	80	40
3	Apply science for marine mechanic	TRA-01-CM09-V3-24	IV	08	80	40
4	Prepare basic technical drawing	TRA-01-CM10-V3-24	IV	08	80	40
5	Plan to undertake a routine task	TRA-01-CM11-V3-24	IV	08	80	40
6	Understand maritime legislation and regulations	TRA-01-CC10-V3-24	IV	05	50	25
7	Undertake safety and emergency procedures	TRA-01-CC11-V3-24	IV	05	50	25
8	Apply environmental regulations in the marine service industry	TRA-01-CC12-V3-24	IV	05	50	25
9	Repair and maintain marine engine systems	TRA-01-CC13-V3-24	IV	08	80	40
10	Remove, repair and install marine transmission systems	TRA-01-CC14-V3-24	IV	08	80	40
11	Dismantle, repair and assemble marine AC generators & pumps	TRA-01-CC15-V3-24	IV	10	100	50
12	Repair and install marine electronic systems and components	TRA-01-CC16-V3-24	IV	08	80	40
13	Diagnose and repair marine fuel systems	TRA-01-CC17-V3-24	IV	10	100	50
14	Service and repair of marine HVAC systems	TRA-01-CC18-V3-24	IV	10	100	50
15	Inspect, repair and maintenance of hulls	TRA-01-CC19-V3-24	IV	10	100	50
16	Repair and maintain RO Plant	TRA-01-CC10-V3-24	IV	05	50	25
Total				120	1200	600

Packaging of National Qualifications:

National certificate IV in Marine Mechanic 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

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.