



Maldives National Skills Development Authority



National Competency Standard for Naval Architecture

Standard Code: CON-09L4-V1-24

Qualification Name: National Certificate IV in Naval Architecture

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 Naval Architecture 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 Thalhath	Director General	Ministry of National Planning, Housing and Infrastructure
02	Zeeniya Ahmed Hameed	Permanenet Secretary	Ministry of Housing, Land and Urban Development
03	Adnan Haleem	Secretary General	Maldives National Association of Construction Industry
04	Mohamed Rasheed	Director	Housing Development Corporation
05	Mohamed Waheed	Assistant Lecturer	Maldives Polytechnic
06	Hussain Shiyam	Civil Engineer	Civil Engineers Association
07	Ibrahim Shareef Hassan	Training Expert	Ibrahim Shareef Hassan
08	Mohamed Yoosuf	Professional Member	Architects Association of Maldives
09	Shakeeba Ali	Director General	Maldives National Skills Development Authority

National Occupational Standard has been endorsed by:



Adnan Haleem
Chairperson
Construction Sector Council

Maldives National Skills Development Authority
Umar Zahir Office Building, 5th Floor,
Orchid Ma higur, HulhuMale', Republic of Maldives.

Date of Endorsement: 29.05.2024

TECHNICAL SUPPORT

#	Name	Designation	Organisation
01			
02			

TECHNICAL PANEL MEMBERS			
#	Name	Designation	Organisation
01	Ashwal Rasheed	Founder	Naarehi marine
02	Moahmed Yoosuf	Lectuer	Freelance
03	Naseef Mohamed	-	-

VERSION	DEVELOPER	DATE	STANDARD CODE
V1	Maldives Institute of Technology	3/02/2024	CON-09L4-V1-24

Standard Development Process

The development of the “National Certificate IV in Naval Architecture” Standard involved a comprehensive study of Naval Architecture occupations in Maldivian workplaces, with a focus on construction sector. 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 Naval Architecture 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 Naval Architecture program, ensuring its widespread implementation across the country.

Description of “Naval Architecture”

The "Naval Architecture" standard is a foundational guideline meticulously crafted to enhance essential skills in the field of naval engineering and ship design. This program is dedicated to equipping individuals with fundamental competencies crucial for designing, constructing, and maintaining various marine structures and vessels. Participants will gain practical insights into core techniques and practices, emphasising the significance of naval design principles, structural integrity, and hydrodynamic performance.

The certification serves as a mid-level career for professionals venturing into the application of naval architecture principles, providing a robust foundation in the fundamental skills necessary for implementing and managing efficient naval design and engineering systems. This standard is particularly valuable for individuals aiming to establish proficiency in contributing to the innovation and optimisation of marine structures within the maritime industry.

Proposed Qualification Titles

Following are the recommended titles by the selected internal expert team of MIT for the National Certificate IV in Naval Architecture.

1. Nil-

Job opportunities upon completion of “National Certificate IV in Naval Architecture”

Upon successful completion of the National Certificate IV in Naval Architecture, students can work in the following jobs.

1. *Naval Architect (Apprentice)*
2. *Boat Building Carpenters*

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 CERTIFICATE IV IN NAVAL ARCHITECTURE		
3. Qualification code: CON-09L4-V1-24		Total Number of Credits: 130
4. Purpose of the qualification National Certificate IV in Naval Architecture shall develop the required knowledge and skills for designing boats to perform the missions and to meet the requirements laid down by the prospective owners and operators. It involves knowledge of mechanics, hydrostatics, hydrodynamics, steady and unsteady body motion, strength of materials, and design of structures. In addition, this qualification will ensure boat design and construction shall always be aligned to the relevant Boat Building Codes and regulation of the Maldives, ensuring safety across the Maldivian seas with reduced and unexpected incidents and emergencies.		
5. Regulations for the qualification		National Certificate IV in Naval Architecture 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
6. Schedule of Units		
Unit No.	Unit Title	Code
Common Competencies		
01	Participate in sustainable work practices	CON-09-CM01-V1-24
02	Enhance customer service experience	CON-09-CM02-V1-24
03	Lead and manage people	CON-04-CM03-V2-24
04	Apply work ethics and manage diversity in the workplace	CON-04-CM04-V2-24
05	Respond to emergency situations	CON-05-CM01-V2-24
06	Apply engineering science	CON-09-CM03-V1-24
07	Apply engineering mathematics	CON-09-CM03-V1-24
Core Competencies		
08	Apply basic principles of naval architecture	CON-09-CC01-V1-24
09	Understand the fundamentals of ship structure	CON-09-CC02-V1-24
10	Understand and select materials	CON-09-CC03-V1-24
11	Utilise CAD for technical drawing and modelling	CON-09-CC04-V1-24
12	Investigate shipbuilding	CON-09-CC05-V1-24
13	Analyse vessel hydrostatics and stability	CON-09-CC06-V1-24
14	Assess ship resistance characteristics	CON-09-CC07-V1-24
15	Understand vessel response to external forces	CON-09-CC08-V1-24
16	Interpret vessel performance factors	CON-09-CC09-V1-24

17	Analyse structural integrity in shipbuilding	CON-09-CC10-V1-24
18	Contribute to maritime engineering	CON-09-CC11-V1-24
7. Accreditation requirements		The training provider should have a workshop or similar training facility to provide the trainees the hands-on experience related to this qualification and arrangements for relevant industrial experience.
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	Participate in sustainable work practices	CON-09-CM01-V1-24	IV	04	40	20
02	Enhance customer service experience	CON-09-CM02-V1-24	IV	10	100	50
03	Lead and manage people	CON-04-CM03-V2-24	IV	10	100	50
04	Apply work ethics and manage diversity in the workplace	CON-04-CM04-V2-24	IV	15	150	75
05	Respond to emergency situations	CON-05-CM01-V2-24	III	05	50	25
06	Apply engineering science	CON-09-CM03-V1-24	IV	10	100	50
07	Apply engineering mathematics	CON-09-CM03-V1-24	IV	10	100	50
08	Apply basic principles of naval architecture	CON-09-CC01-V1-24	IV	04	40	20
09	Understand the fundamentals of ship structure	CON-09-CC02-V1-24	IV	04	40	20
10	Understand and select materials	CON-09-CC03-V1-24	IV	04	40	20
11	Utilise CAD for technical drawing and modelling	CON-09-CC04-V1-24	IV	05	50	25
12	Investigate shipbuilding	CON-09-CC05-V1-24	IV	05	50	25
13	Analyse vessel hydrostatics and stability	CON-09-CC06-V1-24	IV	08	80	40
14	Assess ship resistance characteristics	CON-09-CC07-V1-24	IV	08	80	40
15	Understand vessel response to external forces	CON-09-CC08-V1-24	IV	05	50	25
16	Interpret vessel performance factors	CON-09-CC09-V1-24	IV	06	60	30
17	Analyse structural integrity in shipbuilding	CON-09-CC10-V1-24	IV	10	100	50
18	Contribute to maritime engineering	CON-09-CC11-V1-24	IV	07	70	35
Total				130	1300	650

Packaging of National Qualifications:

National certificate IV in Naval Architecture 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

Qualification Code: CON-09L4-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.