



**Maldives National Skills Development Authority**



# **National Competency Standard for Computer Hardware and Networking**

**Standard Code: ICTS01V2/20**

**Qualification Name: National Certificate III in Computer Hardware and Networking**  
**Qualification Code: ICTS01Q1L3V2/20**

## PREFACE

Technical and Vocational Education and Training (TVET) Authority was established with the vision to develop a TVET system in the Maldives that is demand driven, accessible, beneficiary financed and quality assured, to meet the needs of society for stability and economic growth, the needs of Enterprise for a skilled and reliable workforce, the need of young people for decent jobs and the needs of workers for continuous mastery of new technology.

TVET system in the Maldives flourished with the Employment Skills Training Project (ESTP) funded by ADB with the objective of increasing the number of Maldivians, actively participating in the labor force, employed and self-employed. The Project supported expansion of demand driven employment-oriented skills training in priority occupations and to improve the capacity to develop and deliver Competency Based Skill Training (CBST). The project supported delivery of CBST programs to satisfy employer demand-driven needs. The National Competency Standards (NCS) provide the base for this training. Currently CBST is offered for five key sectors in the Maldives: Tourism, Fisheries and Agriculture, Transport, Construction and the Social sectors. These sectors are included as priority sectors that play a vital role in the continued economic growth of the country. The Ministry of Health has provided support to TVET Authority to develop National Competency Standard, instructional materials, assessment resource book and trainees log book for the National Competency Standard for "Assistant Computer Technician".

The NCS are developed in consultation with Employment Sector Councils representing employers. They are designed using a consensus format endorsed by the Maldives Qualifications Authority (MQA) to maintain uniformity of approach and the consistency of content amongst occupations. This single format also simplifies benchmarking the NCS against relevant regional and international standards. NCS specify the standards of performance of a competent worker and the various contexts in which the work may take place. NCS also describes the knowledge, skills and attitudes required in a particular occupation. They provide explicit advice to assessors and employers regarding the knowledge, skills and attitudes to be demonstrated by the candidates seeking formal recognition for the competency acquired following training or through work experience. By sharing this information, all participants in the training process have the same understanding of the training required and the standard to be reached for certification. Certification also becomes portable and can be recognized by other employers and in other countries with similar standards.

NCS are the foundation for the implementation of the TVET system in Maldives. They ensure that all skills, regardless of where or how they were developed can be assessed and recognized. They also form the foundation for certifying skills in the Maldives National Qualification Framework (MNQF).

NCS are developed by the TVET Section of Ministry of Higher Education, Employment and Social Security. The NCS are endorsed by the Employment Sector Councils of the respective sectors and validated by the Maldives Qualification Authority.



Mohamed Hashim  
Minister of State for Higher Education  
TVET Authority


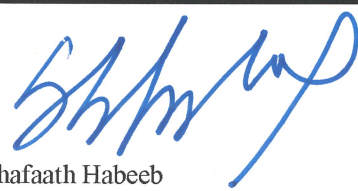


Ahmed Nisham  
Director, Standard Development & Statistics  
TVET Authority

TECHNICAL PANEL MEMBERS			
#	Name	Designation	Organization
01	Basim Abdulla	Lecturer	Faculty of Engineering, Science and Technology
02	Shazra Mohamed Saeed	Assistant IT Service Officer	National Centre for Information Technology
03	Mohamed Naseeh	Senior Human Capital Management Executive Officer	Civil Service Commission
04	Mohamed Musad	Director Digital Transformation	Dhiraagu
05	Mohamed Latheef	Senior Lecturer	Maldives Polytechnic
06	Aminath Sakha Saleem	Computer Technician	Ministry of Health
07	Hussain Samooh	Computer Programmer	Ministry of Health

VERSION	DEVELOPER	DATE	STANDARD CODE
V1	TVET Authority	2018	SOC02S17V2
V2	Mohamed Ishan	19 <sup>th</sup> October 2020	ICTS01V2/20

EMPLOYMENT SECTOR COUNCILS			
#	Name	Designation	Organization
01	Dr. Ali Fawaz Shareef	Rector	Cyryx College
02	Shafaath Habeeb	Director	Ministry of Communication, Science and Technology
03	Hussain Shifau	IT Executive	National Centre for Information Technology
04	Mariyam Asna	Executive Board Member	Women in Tech
05	Mohamed Latheef	Senior Lecturer	Maldives Polytechnic
06	Mohamed Jailam	CEO	Javaabu
07	Ibrahim Zameel	Senior Manager, Training and Development	Ooredoo

National Occupational Standard has been Endorsed by:	
 Dr. Ali Fawaz Shareef Chairperson ICT Employment Sector Council	 Shafaath Habeeb Vice-Chairperson ICT Employment Sector Council
Technical and Vocational Education and Training Authority Ministry of Higher Education Handhuvaree Hingun, M. World Dream Male', Maldives	
Date of Endorsement: 2017	Date of Revision: 19 <sup>th</sup> October 2020

## Standard Development Process

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To ensure the standard meets the ICT sector job requirements, the process was divided into three phases. A research phase, data analysis phase and drafting phase. First, ICT standards of Maldives and some foreign countries were reviewed. After that, Maldives ICT sector's job requirements were reviewed. Based on the data gathered, ICT standard contents were constructed. By completion of this process, the first Draft of the standard was developed.

For strengthening the development of the National Occupational Standard, a panel with technical experts was formed. The members provide technical support which needs to be included or excluded in the developed standard. If any amendment is brought to the standard, a new draft is constructed and reviewed by the technical panel, until the whole National Occupational Standard caters the needs of the ICT sector.

Once the standard is finalized among the technical panel, the standard then is submitted to the ICT Sector Council. A brief report on how National Occupational Standard for Computer Hardware and Networking was developed is presented to the Sector council. Council members then ensure that the industry need has been catered in the standard and once the standard fully fills the recommendation the standard has been endorsed by the council.

After endorsing the standard from the ICT Sector Council, the final document is submitted to Maldives Qualification Authority (MQA) for approval. After the approval of MQA the National Occupational Standard for Computer Hardware and Networking is published, which would then be used by training providers.

## Description of “Computer Hardware and Networking”

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Like all other, qualification of the Maldivian TVET system, this occupational standard document focuses a very important segment of skilled occupations across the Maldives.

Competency standard presented here refers to an important occupation within the Information Communication Technology (ICT) Sector, which is Computer Hardware & Networking.

ICT sector plays an important role in establishing communication between individuals and corporations. Moreover, in this era of information, ICT is considered as the leading sector of securing sensitive data in digital world. Since the opportunities in ICT sector is “infinite”, there are plenty of room for those who are interested to reach higher levels in this sector. For this reason, this standard is designed to cater the needs of the candidates who are interested to proceed in the field of computer hardware & networking.

From an economical aspect, it's not an option for ICT sector to be strong. Instead, it has to be strong to an extent the sector should be capable of competing at international levels. Today, ICT personally need to play an important role in every field. Financial sector and National Security sector count among highly sensitive areas. Highly trained ICT professionals are needed to secure these sectors. And it's true for all other sectors. Individuals who work as computer hardware and network technician or administrator are the ones that lay the backbone of the digital communication network, thus there are the ones who work at the frontline of defending the organizations from cyber-attacks and other various threats.

## Job opportunities upon completion of “National Certificate-3 in Computer Hardware and Networking”

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Upon successful completion of the National Certificate III in Computer Hardware and Networking, student can work in the following jobs.

1. *Assistant Computer Technician*
2. *IT Support Technician*
3. *Assistant IT Technician*

## 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)
Competency Standard	S
Occupation with in an industry sector	Two digits 01-99
Unit	U
Common Competency	CR
Core Competency	CM
Optional / Elective Competency	OP
Assessment Resources Materials	A
Learning Resources Materials	L
Curricular	C
Qualification	Q1, Q2 etc.
MNQF level of qualification	L1, L2, L3, L4 etc.
Version Number	V1, V2 etc.
Year of endorsement of standard, qualification	By “/” followed by two digits responding to the year of last review, example /20 for the year 2020



1. Endorsement Application for Qualification 01		
2. NATIONAL CERTIFICATE III IN COMPUTER HARDWARE AND NETWORKING		
3.Qualification code: ICTS01Q1L3/20		Total Number of Credits: 40
<b>4. Purpose of the qualification</b> This standard describes the performance outcomes, skills and knowledge required to work professionally in an ICT environment. This standard focuses on the application of skills and knowledge to solve a given problem in ICT field efficiently.		
<b>5. Regulations for the qualification</b>		National Certificate III in Computer Hardware and Networking, 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
<b>6. Schedule of Units</b>		
No.	Unit Title	Unit Code
<b>Common Competencies</b>		
01	Work effectively in an information technology environment	ICTS01CR01V2/20
02	Apply occupational health and safety procedures	ICTS01CR02V2/20
03	Install software applications	ICTS01CR03V2/20
<b>Core Competencies</b>		
04	Operate computer hardware	ICTS01CR04V2/20
05	Connect hardware peripherals	ICTS01CR05V2/20
06	Diagnose and Troubleshoot Computer Systems	ICTS01CR06V2/20
07	Determine client computing problems and actions	ICTS01CR07V2/20
08	Install and configure other IT related electronic devices	ICTS01CR08V2/20
09	Create and Manage Technical Documentation	ICTS01CR09V2/20
10	Maintain equipment/Software inventory	ICTS01CR10V2/20
11	Maintain System integrity	ICTS01CR11V2/20
12	Basic Computer Network configuration	ICTS01CR12V2/20
13	Install and configure Computer Networks	ICTS01CR13V2/20
14	Configure and test network security	ICTS01CR14V2/20
15	Maintain Computer Systems and Network	ICTS01CR15V2/20
16	Diagnose and Troubleshoot Computer Networks	ICTS01CR16V2/20
<b>7.Accreditation Requirements</b>		The training provider should demonstrate hands-on experience related to this qualification. In addition to this simulated, or actual organizational work environment should be provided.
<b>8. Recommended Sequencing</b>		As appearing under the section 06



NO	Unit Title	Code	Level	No Of Credits	Credit hours	Contact hours
01	Work effectively in an information communication technology environment	ICTS01CR01V2/20	III	01	10	5
02	Apply occupational health and safety procedures	ICTS01CR02V2/20	III	01	10	5
03	Operate computer hardware	ICTS01CR04V2/20	III	02	20	10
04	Work hardware peripherals	ICTS01CR05V2/20	III	02	20	10
05	Install software applications	ICTS01CR03V2/20	III	03	30	15
06	Diagnose and Troubleshoot Computer Systems	ICTS01CR06V2/20	III	03	30	15
07	Determine client computing problems and actions	ICTS01CR07V2/20	III	02	20	10
08	Install and configure other IT related electronic devices	ICTS01CR08V2/20	III	04	40	20
09	Create and Manage Technical Documentation	ICTS01CR09V2/20	III	02	20	10
10	Maintain equipment/Software inventory	ICTS01CR10V2/20	III	01	10	5
11	Maintain System integrity	ICTS01CR11V2/20	III	03	30	15
12	Basic Computer Network configuration	ICTS01CR12V2/20	III	03	30	15
12	Install and configure Computer Networks	ICTS01CR13V2/20	III	04	40	20
13	Configure and test network security	ICTS01CR14V2/20	III	03	30	15
14	Maintain Computer Systems and Network	ICTS01CR15V2/20	III	03	30	15
15	Diagnose and Troubleshoot Computer Networks	ICTS01CR16V2/20	III	03	30	15
Total				40	400	200

### Packaging of National Qualifications:

National Certificate III in Computer Hardware and Networking 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

Qualification Code: ICTS01Q1L3/20

## 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.