COMPETENCY STANDARD

Web Design and Development for Freelancing

Level: 05

(ICT Sector)

Competency Standard Code: CS-ICT-WDDF-L5-EN-V1

National Skills Development Authority
Prime Minister's Office
Government of the People's Republic of Bangladesh

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This Competency Standard for Web Design and Development for Freelancing is a document for the development of curricula, teaching and learning materials, and assessment tools. It also serves as the document for providing training consistent with the requirements of industry in order to meet the qualification of individuals who graduated through the established standard via competency-based assessment for a relevant job.

This document has been developed by NSDA in association with ICT Sector ISC, industry representatives, academia, related specialist, trainer and related employee.

Public and private institutions may use the information contained in this standard for activities benefitting Bangladesh.

Introduction

The NSDA aims to enhance an individual's employability by certifying completeness with skills. NSDA works to expand the skilling capacity of identified public and private training providers qualitatively and quantitatively. It also aims to establish and operationalize a responsive skills ecosystem and delivery mechanism through a combination of well-defined set of mechanisms and necessary technical supports.

Key priority economic growth sectors identified by the government have been targeted by NSDA to improve current job skills along with existing workforce to ensure required skills to industry standards. Training providers are encouraged and supported to work with industry to address identified skills and knowledge to enable industry growth and increased employment through the provision of market responsive inclusive skills training program. "Web Design and Development for Freelancing" is selected as one of the priority occupations of ICT Sector. This standard is developed to adopt a demand driven approach to training with effective inputs from Industry Skills Councils (ISC's), employer associations and employers.

Generally, a competency standard informs curriculum, learning materials, assessment and certification of trainees enrolled in Skills Training. Trainees who successfully pass the assessment will receive a qualification in the National Skills Qualification Framework (NSQF) under Bangladesh National Qualification Framework (BNQF) and will be listed on the NSDA's online portal.

This competency standard is developed to improve skills and knowledge in accordance with the job roles, duties and tasks of the occupation and ensure that the required skills and knowledge are aligned to industry requirements. A series of stakeholder consultations, workshops were held to develop this document.

The document also details the format, sequencing, wording and layout of the Competency Standard for an occupation which is comprised of Units of Competence and its corresponding Elements.

Overview

A competency standard is a written specification of the knowledge, skills and attitudes required for the performance of an occupation, trade or job corresponding to the industry standard of performance required in the workplace.

The purpose of a competency standards is to:

- provide a consistent and reliable set of components for training, recognising and assessing people's skills, and may also have optional support materials
- enable industry recognised qualifications to be awarded through direct assessment of workplace competencies
- encourage the development and delivery of flexible training which suits individual and industry requirements
- encourage learning and assessment in a work-related environment which leads to verifiable workplace outcomes

Competency standards are developed by a working group comprised of representative from NSDA, Key Institutions, ISC, and industry experts to identify the competencies required of an occupation in Informal Sector.

Competency standards describe the skills, knowledge and attitude needed to perform effectively in the workplace. CS acknowledge that people can achieve technical and vocational competency in many ways by emphasizing what the learner can do, not how or where they learned to do it.

With competency standards, training and assessment may be conducted at the workplace or at training institute or any combination of these.

Competency standards consist of a number of units of competency. A unit of competency describes a distinct work activity that would normally be undertaken by one person in accordance with industry standards.

Units of competency are documented in a standard format that comprises of:

- unit title
- nominal duration
- unit code
- unit descriptor
- elements and performance criteria
- variables and range statement
- curricular content guide
- assessment evidence guides

Together, all the parts of a unit of competency:

- describe a work activity
- guide the assessor to determine whether the candidate is competent or not yet competent

The ensuing sections of this document comprise of a description of the relevant occupation, trade or job with all the key components of a unit of competency, including:

- a chart with an overview of all Units of Competency for the relevant occupation, trade or job including the Unit Codes and the Unit of Competency titles and corresponding Elements

the Competency Standard that includes the Unit of Competency, Unit Descriptor, Elements and Performance Criteria, Range of Variables, Curricular Content Guide and Assessment Evidence Guide.

Competency Standards for National Skills Certificate – Level-5 in Web Design and Development for Freelancing in ICT Sector

Level Descriptors of BNQF 1-6

Level & Job Classification	Knowledge Domain	Skills Domain	Responsibility Domain
6-Mid-Level Manager/ Sub Assistant Engineer	Comprehensive actual and theoretical knowledge within a specific work or study area with an awareness of the validity and limits of that knowledge, able to analyse, compare, relate and evaluate.	Specialised and wider range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems. Communicate professional issues and solutions to the team and to external partners/users.	Work under broad guidance and self-motivation to execute strategic and operational plan/s. Lead lower-level management. Diagnose and resolve problems within and among work groups.
5-Supervisor	Broad knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to scrutinize and break information into parts by identifying motives or causes.	Broad range of cognitive and practical skills required to generate solutions to specific problems in one or more work or study areas. Communicate practice-related problems and possible solutions to external partners.	Work under guidance of management and self-direction to resolve specific issues. Lead and take responsibility for the work and actions of group/team members. Bridge between management.
4-Highly Skilled Worker	Broader knowledge of the underlying, concepts, principles, and processes in a specific work or study area, able to solve problems to new situations by comparing and applying acquired knowledge.	A range of cognitive and practical skills required to accomplish tasks and solve problems by selecting and applying the full range of methods, tools, materials and information. Communicate using technical terminology and IT technology with partners and users as per workplace requirements.	Work under minimal supervision in specific contexts in response to workplace requirements. Resolve technical issues in response to workplace requirements and lead/guide a team/ group.
3-Skilled Worker	Moderately broad knowledge in a specific work or study area, able to perceive ideas and abstract from drawing and design according to workplace requirements.	Basic cognitive and practical skills required to use relevant information in order to carry out tasks and to solve routine problems using simple rules and tools. Communicate with his team and limited external partners upholding the values, nature and culture of the workplace	Work or study under supervision with considerable autonomy. Participate in teams and responsible for group coordination.
2-Semi Skilled Worker	Basic understanding of underpinning knowledge in a specific work or study area, able to interpret and apply common occupational terms and instructions.	Skills required to carry out simple tasks, communicate with his team in the workplace presenting and discussing results of his work with required clarity.	Work or study under supervision in a structured context with limited scope of manipulation
1 –Basic Skilled Worker	Elementary understanding of ability to interpret the underpinning knowledge in a specific study area, able to interpret common occupational terms and instructions.	Specific Basic skills required to carry out simple tasks. Interpret occupational terms and present the results of own work within guided work environment/ under supervision.	Work under direct supervision in a structured context with limited range of responsibilities.

List of Abbreviations

General	
NSDA	National Skills Development Authority
BMET	Bureau of Manpower Employment and Training
ILO	International Labor Organization
ISC	Industry Skills Council
NPVC	National Pre-Vocation Certificate
NSQF	National Skills Qualifications Framework
PPP	Public Private Partnership
SCVC	Standards and Curriculum Validation Committee
SEIP	Skills for Employment Investment Program
STP	Skills Training Provider
UoC	Unit of Competency
Occupation Specific	
ICT	Information Communication Technology (ICT)
LCD	Liquid Crystal Display
OSH	Occupational safety and health
PPE	Personal protective equipment
WDDF	Web Design and Development for Freelancing
WD	Web Design

Approval of Competency Standard

Approved by
---Executive Committee (EC) Meeting of NSDA
Held on ----

Deputy Director (Admin)
and
Officer of Secretarial Duties for EC Meeting
National Skills Development Authority

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Competency Standards for National Skill Certificate – 5 in Web Design and Development for freelancing in ICT Sector

Course Structure

SL No	Unit Code and Title		UoC Level	Nominal (Hours)
Generic Competencies				**40**
1	GU-010-L3-V1	Demonstrate Work Values	3	20
2	GU-011-L4-V1	Lead Small Team	4	20
Occupation Specific Competencies				**230**
1	OU-WDDF-01-L5-V1	Develop Website Frontend using Client-side Scripting Language Framework	5	70
2	OU-WDDF-02-L5-V1	Develop Website Backend using Server-side Framework	5	70
3	OU-WDDF-03-L5-V1	Develop E-Commerce Website using E-Commerce Platform	5	70
4	OU-WDDF-04-L5-V1	Prepare Project Proposal	5	20
		Total Nominal Learning Hours		**270**

Units & Elements at Glance

Generic Competencies

Code	Unit of Competency	Elements of Competency	Duration (Hours)
GU-010-L3-V1	Demonstrate work values	1. Define the purpose of work 2. Apply work values / ethics 3. Deal with ethical problems 4. Maintain integrity of conduct in the workplace	20
GU-011-L4-V1	Lead small team	1. Provide team leadership 2. Assign responsibilities 3. Set performance expectations for team members 4. Supervise team performance	20
		Total Hours:	40

Occupation Specific Competencies

Code	Unit of Competency	Elements of Competency	Duration (Hours)
OU-WDDF-01-L5-V1	Develop Website Frontend using Client-side Scripting Language Framework	1. Plan framework for website 2. Develop website frontend 3. Test the site	70
OU-WDDF-02-L5-V1	Develop Website Backend using Server-side Framework	1. Plan framework for website backend 2. Develop website backend 3. Test the web backend	70
OU-WDDF-03-L5-V1	Develop E-Commerce Website using E-commerce Platform	1. Plan for E-Commerce platform 2. Develop and customize E-commerce website 3. Test the E-commerce site	70
OU-WDDF-04-L5-V1	Prepare Project Proposal	1. Interpret client's requirements 2. Plan and prepare project proposal 3. Submit the proposal	20
		Total Hours:	230

Generic Competencies

Unit code and Title	GU-010-L3-V1: Demonstrate Work Values
Nominal Hours	**20 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to demonstrate work values. It specifically includes – define the purpose of work; apply work values / ethics; deal with ethical problems; and maintain integrity of conduct in the workplace.
Elements of Competency	**Performance Criteria** **Bold & Underlined** terms are elaborated in the Range of Variables Training Components
1. Define the purpose of work	1.1 One's unique sense of purpose for working and the why's of work are identified, reflected on and clearly defined for one's development as a person and as a member of society 1.2 Personal mission is in harmony with industry values are defined
2. Apply work values / ethics	2.1 **Work values / ethics / concepts** are classified and reaffirmed in accordance with the transparent industry ethical standards, policies and guidelines 2.2 **Work practices** are undertaken in compliance with industry work ethical standards, industry policy and guidelines 2.3 Personal behavior and relationships with co-workers are maintained as per standards, policy and guidelines 2.4 **Company resources** are used in accordance with transparent company ethical standard, policies and guidelines
3. Deal with ethical problems	3.1 Industry ethical standard, organizational policy and guidelines on the prevention and reporting of unethical conduct are accessed and applied in accordance with transparent company ethical standard, policies and guidelines 3.2 Work **incidents / situations** are reported and/or resolved in accordance with company protocol / guidelines 3.3 Resolution and / or referral of ethical problems identified are used as learning opportunities
4. Maintain integrity of conduct in the workplace	4.1 Personal work practices and values are demonstrated consistently with acceptable ethical conduct and company's core values 4.2 **Instructions** to co-workers are provided based on ethical, lawful and reasonable directives 4.3 Company values / practices are shares with co-workers using appropriate behavior and language

Range of Variables	
Variable	**Range** (may include but not limited to):
1. Work values / ethics / concepts	1.1 Commitment / Dedication 1.2 Sense of urgency 1.3 Sense of purpose 1.4 Love for work 1.5 High motivation 1.6 Orderliness 1.7 Reliability 1.8 Competence 1.9 Dependability 1.10 Goal-oriented 1.11 Sense of responsibility 1.12 Being knowledgeable 1.13 Loyalty to work/company 1.14 Sensitivity to others 1.15 Compassion/Caring attitude 1.16 Balancing between family and work 1.17 Benjamin spirit/teamwork 1.18 Sense of nationalism 1.19 Gender awareness
2. Work practices	2.1 Quality of work 2.2 Punctuality 2.3 Efficiency 2.4 Effectiveness 2.5 Productivity 2.6 Resourcefulness 2.7 Innovativeness / Creativity 2.8 Cost consciousness 2.9 5S 2.10 Attention to details
3. Company resources	3.1 Consumable materials 3.2 Equipment / Machineries 3.3 Human 3.4 Time 3.5 Financial resources
4. Incidents / situations	4.1 Violent / intense dispute or argument 4.2 Gambling 4.3 Use of prohibited substances 4.4 Pilferages 4.5 Damage to person or property 4.6 Vandalism

	4.7 Falsification
	4.8 Bribery
	4.9 Sexual Harassment
	4.10 Blackmail
5. Instructions	5.1 Verbal
	5.2 Written

Evidence Guide

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency

	Assessment required evidence that the candidate:
1. Critical Aspects ofCompetency	1.1 defined one's unique sense of purpose for working
	1.2 clarified and affirmed work values / ethics / concepts consistently in the workplace
	1.3 demonstrated work practices satisfactorily and consistently in compliance with industry work ethical standards, organizational policy and guidelines
	1.4 demonstrated personal behavior and relationships with co-workers and / or clients consistent with ethical standards policy and guidelines
	1.5 used company resources in accordance with company ethical standard, policies and guidelines
	1.6 followed company ethical standards, organizational policy and guidelines on the prevention and reporting of unethical conduct / behavior
	1.7 participated in negotiation with at least one person to achieve an agreed outcome.
2. Underpinning Knowledge	2.1 Occupational safety and health.
	2.2 Work values and ethics.
	2.3 Company performance and ethical standards.
	2.4 Company policies and guidelines.
	2.5 Fundamental rights at work including gender5sensitivity.
	2.6 Work responsibilities / job functions.
	2.7 Corporate social responsibilities.
	2.8 Company code of conduct / values.
	2.9 Balancing work and family responsibilities.
	2.10 Codes of practice and guidelines for the organization.
	2.11 Organization policy and procedures for negotiations.
	2.12 Decision making and conflict resolution strategies procedures.
	2.13 Problem solving strategies on how to deal with unexpected questions and attitudes during negotiation

3. Underpinning Skills	3.1	Developing interpersonal skills to strengthen rapport with other parties
	3.2	Planning for own work activities
	3.3	Communicating with others (verbal and listening)
	3.4	Self-awareness, understanding and acceptance
	3.5	Applying good manners and right conduct
	3.6	Observation skills
	3.7	Negotiation skills
4. Underpinning Attitude	4.1	Commitment to occupational health and safety
	4.2	Promptness in carrying out activities
	4.3	Sincere and honest to duties
	4.4	Environmental concerns
	4.5	Eagerness to learn
	4.6	Tidiness and timeliness
	4.7	Respect for rights of peers and seniors in workplace
	4.8	Communication with peers, sub-ordinates and seniors in workplace
5. Resource Implications	The following resources must be provided:	
	5.1	Tools, equipment and physical facilities appropriate to perform activities
	5.2	Materials, consumables to perform activities
6. Methods of Assessment	6.1	Written Test
	6.2	Demonstration
	6.3	Oral Questioning
	6.4	Portfolio
7. Context of Assessment	7.1.	Competency assessment will be done in NSDA accredited center or in online platform
	7.2.	Assessment should be done by NSDA certified/ nominated assessor

Accreditation Requirements

Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Unit Code and Title	GU-011-L4-V1: Lead Small Team
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to lead small team. It specifically includes – provide team leadership; assign responsibilities; set performance expectations for team members; and supervised team performance.
Nominal Hours	20 Hours
Elements of Competency	Performance Criteria **Bold & Underlined** terms are elaborated in the Range of Variables
1. Provide team leadership	1.1 **Work requirements** are identified and presented to team members 1.2 Reasons for instructions and requirements are communicated to team members 1.3 **Team members' queries and concerns** are recognized, discussed and dealt with
2. Assign responsibilities	2.1 Duties, and responsibilities are allocated having regard to the skills, knowledge and attitudes required to properly undertake the assigned task 2.2 Duties are allocated having regard to individual preference, domestic and personal considerations, whenever possible
3. Set performance expectations for team members	3.1 Performance expectations are established based on client needs and according to assignment requirements 3.2 Performance expectations are based on individual team members' duties and area of responsibility 3.3 Performance expectations are discussed and directed to implement in the workplace
4. Supervise team performance	4.1 **Monitoring of performance** are taken place against defined performance criteria and / or assignment instructions and corrective action taken if required 4.2 Team members are provided **feedback**, positive support and advice on strategies to overcome any deficiencies 4.3 **Performance issues** which cannot be rectified or addressed within the team are referenced to appropriate personnel 4.4 Team members are kept informed of any changes in the priority allocated to assignments or tasks which might impact on clients' / customers' needs and satisfaction 4.5 Team operations are monitored to ensure that employer / client needs and requirements are met

| | 4.6 Follow-up communication is provided on all issues affecting the team |
| | 4.7 All relevant documentation is completed |

Range of Variables

Variable	**Range** (may include but are not limited to):
1. Work requirements	1.1 Client Profile 1.2 Assignment instructions
2. Team member's queries and concerns	2.1 Roster 2.2 Shift details
3. Monitoring of performance	3.1 Formal process 3.2 Informal process
4. Feedback	4.1 Formal process 4.2 Informal process 4.3 Sandwich process
5. Performance issues	5.1 Work output 5.2 Work quality 5.3 Team participation 5.4 Compliance with workplace protocols 5.5 Safety 5.6 Customer service

Evidence Guide

The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.

| 1. Critical aspects of competency | Assessment required evidence that the candidate:
1.1 Maintained or improved individuals and / or team performance given a variety of possible scenario
1.2 Assessed and monitored team and individual performance against set criteria
1.3 Represented concerns of a team and individual to next level of management or appropriate specialist and to negotiate on their behalf
1.4 Allocated duties and responsibilities, having regard to individual's knowledge, skills and attitude and the needs of the tasks to be performed
1.5 Set and communicated performance expectations for a range of tasks and duties within the team and provided feedback to team members |

2. Underpinning knowledge	2.1 Company policies and procedures
	2.2 Relevant legal requirements
	2.3 How performance expectations are set
	2.4 Methods of Monitoring Performance
	2.5 Client expectations
	2.6 Team members' duties and responsibilities
3. Underpinning skills	3.1 Informal performance counselling skills
	3.2 Planning for own work activities
	3.3 Team building skills
	3.4 Negotiating skills
4. Required attitudes	4.1 Commitment to occupational health and safety
	4.2 Promptness in carrying out activities
	4.3 Sincere and honest to duties
	4.4 Environmental concerns
	4.5 Eagerness to learn
	4.6 Tidiness and timeliness
	4.7 Respect for rights of peers and seniors in workplace
	4.8 Communicate with peers and seniors in workplace
5. Resource implications	The following resources must be provided:
	5.1 Workplace (actual or simulated)
	5.2 Tools, equipment and facilities appropriate to processes or activity
	5.3 Materials relevant to the proposed activity
	5.4 Equipment and outfits appropriate in applying safety measures
	5.5 Relevant drawings, manuals, codes, standards and reference material
6. Methods of assessment	Methods of assessment may include but not limited to:
	6.1 Written test
	6.2 Demonstration
	6.3 Oral questioning
	6.4 Portfolio
7. Context of assessment	7.1. Competency assessment will be done in NSDA accredited center or in online platform
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Accreditation Requirements

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Occupation Specific Units of Competencies

Unit Code and Title	**OU-WDDF-01-L5-V1: Develop website frontend using client-side scripting language framework**
Nominal Hours	**70 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to develop website frontend using client-side scripting language framework. It specifically includes planning framework for website, developing website frontend using a framework and testing the site
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables
1. Plan framework for website	1.1 The purpose and intended audience of the website are identified 1.2 Functional requirements and constraints are identified 1.3 Design patterns are selected as per job requirements 1.4 Coding plan is developed 1.5 Necessary **software** is installed and checked for requirement
2. Develop website frontend using a framework	2.1 Client-side scripting language framework is installed as per standard procedure 2.2 Client-side scripting language framework is coded as per functional requirements 2.3 Website frontend is executed as per standard procedure
3. Test the site	3.1 Rendering is performed in **common browsers** and devices 3.2 Form validation is performed 3.3 Business logic is validated 3.4 Integration testing with back end is performed 3.5 The website is confirmed as per client specification and requirement
Range of Variables	
Variables	**Range** (may include but not limited to):
1. Software	1.1 Node.js 1.2 IDE 　　　1.2.1 Sublime 　　　1.2.2 Brackets 　　　1.2.3 VS code 　　　1.2.4 Notepad++

2. Common browsers	2.1 Google Chrome 2.2 Opera 2.3 Microsoft edge 2.4 Mozilla Firefox 2.5 Safari

Evidence Guide

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency

1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Selected design pattern 1.2 Developed coding plan 1.3 Executed website frontend 1.4 Tested website
2. Underpinning knowledge	2.1 Basic concept of Front-end Framework 2.2 Basic concept of Node.js 2.3 Basic concept of NPM 2.4 Client-side scripting language 2.5 Design patterns 2.6 Coding planning procedure 2.7 Software installing procedure 2.8 Framework 2.9 Testing of a website
3. Underpinning Skills	3.1 Operating personal computer/laptop 3.2 Planning for own work activities 3.3 Operating computer peripherals 3.4 Communicating with clints 3.5 Working with JavaScript 3.6 Working with JSON 3.7 Planning for own work activities
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace
5. Resource Implication	The following resources must be provided: 5.1 Well-equipped computer lab with audio visual accessories 5.2 Uninterrupted internet facilities 5.3 Relevant tools, Equipment, software and facilities needed to perform the activities

	5.4 Uninterrupted powers supply source
	5.5 Required learning materials
6. Methods of Assessment	Methods of assessment may include but not limited to:
	6.1 Written test
	6.2 Demonstration
	6.3 Oral questioning
	6.4 Portfolio
7. Context of Assessment	7.1. Competency assessment will be done in NSDA accredited center or in online platform
	7.2. Assessment should be done by NSDA certified/ nominated assessor

Accreditation Requirements

Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Unit Code and Title	**OUWDF002L5V1: Develop Website Backend using Server-side Framework**
Nominal Hours	**70 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to develop website backend using server-side framework. It specifically includes planning framework for website backend, developing website backend using a framework, testing the website backend and integrating standard security measures
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables
1. Plan framework for website backend	1.1 The purpose and intended audience of the website are identified 1.2 Functional requirements and constraints are identified 1.3 Design patterns are selected as per job requirement 1.4 Coding plan is developed 1.5 Necessary **software** is installed and checked for requirement
2. Develop website backend using a framework	2.1 Server-side framework is installed as per standard procedure 2.2 Server-side framework is used and coded as per functional requirements 2.3 Website backend is executed
3. Test the website backend	3.1 Architectural design of Website backend is tested 3.2 Database schema design testing is performed 3.3 Integration testing is performed 3.4 Coding standard is checked 3.5 Business logic of the website is checked and corrected as required 3.6 The website backend is confirmed as per client specification and requirement
4. Integrate standard security measures	4.1 User authentication and authorization are applied 4.2 SQL injection prevention method is integrated 4.3 Cross Site Scripting (XSS) is checked and prevented
Range of Variables	
Variables	**Range** (may include but not limited to):

1. Software	1.1 local server
	1.2 IDE
	    1.2.1 PHPStorm
	    1.2.2 VS code
	    1.2.3 Sublime

| | 1.2.4 Brackets |
| | 1.2.5 Notepad++ |

Evidence Guide

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency

1. Critical aspects of competency	Assessment required evidence that the candidate:
	1.1 Developed coding plan
	1.2 Used and coded server-side framework
	1.3 Saved and executed website backend
	1.4 Checked and corrected the website backend
	Note: Critical aspects will cover only for one of the following server-side frameworks:
	Laravel/Django/.net/Spring/Express/Ruby on Rails
2. Underpinning knowledge	2.1 Website backend
	2.2 Server-side framework
	2.3 Scripting language
	2.4 Design patterns
	2.4.1 Factory pattern
	2.4.2 Adaptor pattern
	2.4.3 Singleton pattern
	2.5 Functional requirements and constraints
	2.6 Coding and coding plan
	2.7 Database
	2.8 Testing procedure
3. Underpinning Skills	3.1 Handling personal computer/laptop
	3.2 Planning for own work activities
	3.3 Parsing websites
	3.4 Handling clients
	3.5 Working with programming language
	3.6 Working with scripting language
	3.7 Planning for framework
4. Required attitude	4.1 Commitment to occupational health and safety
	4.2 Promptness in carrying out activities
	4.3 Sincere and honest to duties
	4.4 Environmental concerns
	4.5 Eagerness to learn
	4.6 Tidiness and timeliness
	4.7 Respect for rights of peers and seniors in workplace
	4.8 Communication with peers and seniors in workplace
5. Resource Implication	The following resources must be provided:
	5.1 Well-equipped computer lab with audio visual accessories
	5.2 Uninterrupted internet facilities

	5.3 Relevant tools, Equipment, software and facilities needed to perform the activities
	5.4 Uninterrupted powers supply source
	5.5 Required learning materials
6. Methods of Assessment	Methods of assessment may include but not limited to:
	6.1 written test
	6.2 demonstration
	6.3 oral questioning
	6.4 portfolio
	Note: Assessment will cover only one of the following server-side frameworks: Laravel/Django/.net/Spring/Express/Ruby on Rails as per demand of STPs/assessment center.
7. Context of Assessment	7.1. Competency assessment will be done in NSDA accredited center or in online platform
	7.2. Assessment should be done by NSDA certified/ nominated assessor

Accreditation Requirements

Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Unit Code and Title	OU-WDDF-03-L5-V1: Develop E-Commerce website using E-commerce platform
Nominal Hours	**70 Hours**
Unit Descriptor	This unit covers the knowledge, skills and attitudes required to develop E-commerce website using E-commerce platform. It specifically includes planning for E-commerce website, developing and customizing E-commerce website and testing the E-commerce website.
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variables
1 Plan for E-Commerce website	1.1 Purpose and use of E-commerce website is identified as per client's requirement 1.2 **E-commerce platforms** are selected based on purpose and intended uses 1.3 **Payment gateways** are identified and selected as per client requirement 1.4 **Shipping gateways** is identified and selected as per client requirement 1.5 **Notification gateways** is identified and selected as per client requirement 1.6 E-commerce website is planned according to client's business model 1.7 HTTPS is identified and selected
2 Develop and customize E-commerce website	2.1 E-Commerce platform is evaluated and selected 2.2 E-commerce site is customized and developed as per client requirement 2.3 Payment gateway is integrated and implemented as per client requirement 2.4 Shipping gateway is integrated and implemented as per client requirement 2.5 Notification gateway is integrated and implemented as per client requirement 2.6 Website is secured as per standard procedure 2.7 SSL certificate is installed and ensured as per standard procedure
3 Test the E-commerce website	3.1 Website is checked and **tested** 3.2 Website is corrected and adjusted as required

Range of Variables	
Variables	**Range** (may include but not limited to):
1. E-Commerce platform	1.1 WooCommerce 1.2 Shopify 1.3 Magento 1.4 Opencart
2. Payment gateway	2.1 Paypal 2.2 Stripe 2.3 2checkout 2.4 Internet banking 2.5 Mobile banking 2.6 Cash on delivery
3. Shipping gateway	3.1 Expedite Mailing System (EMS) 3.2 DHL 3.3 FedEx 3.4 UPS 3.5 USPS
4. Notification gateways	4.1 Email 4.2 SMS 4.3 Phone call 4.4 Social Media 4.5 Push notification

5. Tested	5.1 Validation
	5.2 Usability
	5.3 Interface
	5.4 Performance
	5.5 Security
	5.6 API testing
	    5.6.1 Payment gateway
	    5.6.2 Shipping gateway
	    5.6.3 Notification
	5.7 Functionality
	    5.7.1 Product upload
	    5.7.2 Cart functionality
	        5.7.2.1 Add to cart
	        5.7.2.2 Check out
	        5.7.2.3 Order confirmation

Evidence Guide

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency

1. Critical aspects of competency	Assessment required evidence that the candidate: 1.1 Planed for E-Commerce website 1.2 Evaluated and selected E-Commerce platform 1.3 Implemented payment gateway 1.4 Implemented shipping gateway 1.5 Implemented notification gateway 1.6 Secured website 1.7 Ensured HTTPS 1.8 Checked and tested website
2. Underpinning knowledge	2.1 E-commerce platforms 2.2 Payment gateways 2.3 Shipping gateways 2.4 Notification gateways 2.5 HTTPS 2.6 Testing procedure 2.7 Cart functionalities 2.8 Security standards for online shopping 2.9 Process of testing cart
3. Underpinning Skills	3.1 Handling personal computer/laptop 3.2 Planning for own work activities 3.3 Handling computer peripherals 3.4 Parsing websites 3.5 Communicating and handling clients 3.6 Working with programming language 3.7 Working with scripting language 3.8 Planning for own work activities
4. Required attitude	4.1 Commitment to occupational health and safety 4.2 Promptness in carrying out activities 4.3 Sincere and honest to duties 4.4 Environmental concerns 4.5 Eagerness to learn 4.6 Tidiness and timeliness 4.7 Respect for rights of peers and seniors in workplace 4.8 Communication with peers and seniors in workplace
5. Resource Implication	The following resources must be provided: 5.1 Well-equipped computer lab with audio visual accessories 5.2 Uninterrupted internet facilities 5.3 Relevant tools, Equipment, software and facilities needed to perform the activities 5.4 Uninterrupted powers supply source 5.5 Required learning materials

6. Methods of Assessment	6.1 Written test 6.2 Demonstration 6.3 Oral questioning 6.4 Portfolio
7. Context of Assessment	7.1. Competency assessment will be done in NSDA accredited center or in online platform 7.2. Assessment should be done by NSDA certified/ nominated assessor

Accreditation Requirements

Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Unit Code and Title	OU-WDDF-04-L5-V1: Prepare Project Proposal
Nominal Hours	**20 hours**
Unit Descriptor	This unit of competency covers the knowledge, skills and attitude to prepare project proposal. It specifically includes interpreting client's requirements, planning and preparing project proposal and submitting the proposal.
Elements of Competency	**Performance Criteria** **Bold and Underlined** terms are elaborated in the Range of Variable
1. Interpret client's requirement	1.1 Requirements from the client are collected through standard data/information gathering techniques 1.2 Requirements are assessed 1.3 Requirements are reviewed and confirmed in consultation with clients
2. Plan and prepare project proposal	2.1 **Web development options** are identified as per client requirement 2.2 **Elements of project proposal** are determined as per client requirement 2.3 Development effort, resources, time and cost estimation are identified as per web development options 2.4 Risk management is analyzed and addressed in the proposal 2.5 Project proposal is prepared as per client requirements
3. Submit the proposal	3.1 Project proposal is presented to clients as per standard procedure 3.2 Client's feedback is evaluated 3.3 Proposal is reviewed and adjusted as required 3.4 Final project proposal is submitted as per standard procedure
Range of Variables	
Variable	**Range** (May include but not limited to:)
1. Web development options	1.1 Open-source software 1.2 Close-source software
2. Elements of project proposal	2.1 Background of the project 2.2 Project objectives 2.3 Project schedule

	2.4 Functional requirement
	2.5 Risk management
	2.6 Project budget
	2.7 Resources
	2.8 Overall benefits
	2.9 Future improvement
	2.10 Service agreement

Evidence Guide

The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet the requirements of the current version of the Unit of Competency.

1. Critical aspects of competency	Assessment required evidence that the candidate:
	1.1 Assessed clients' requirements
	1.2 Determined elements of project proposal
	1.3 Estimated development effort, resources, time and cost
	1.4 Prepared project proposal
	1.5 Evaluated client's feedback
	1.6 Reviewed and adjusted proposal
2. Underpinning knowledge	2.1. Project proposal
	2.2. Open-source software
	2.3. Close-source software
	2.4. Web development options
	2.5. Elements of project proposal
	2.6. Costing procedure of development.
	2.7. Project proposal preparing procedure
	2.8. Proposal submitting procedure
3. Underpinning skills	3.1. Handling personal computer/laptop
	3.2. Handling computer peripherals
	3.3. Analyzing client's requirement
	3.4. Communicating and handling clients
	3.5. Planning for own work activities
	3.6. Writing skills in English

4. Required attitude	4.1	Commitment to occupational health and safety
	4.2	Promptness in carrying out activities
	4.3	Sincere and honest to duties
	4.4	Environmental concerns
	4.5	Eagerness to learn
	4.6	Tidiness and timeliness
	4.7	Respect for rights of peers and seniors in workplace
	4.8	Communication with peers, sub-ordinates and seniors in workplace
5. Resource implication	The following resources must be provided:	
	5.1	Well-equipped computer lab with audio visual accessories
	5.2	Uninterrupted internet facilities
	5.3	Relevant tools, Equipment, software and facilities needed to perform the activities
	5.4	Uninterrupted powers supply source
	5.5	Required learning materials
6. Methods of assessment	6.1	Demonstration with oral questioning
	6.2	Direct observation
	6.3	Written test
	6.4	Portfolio
7. Context of Assessment	7.1.	Competency assessment will be done in NSDA accredited center or in online platform
	7.2.	Assessment should be done by NSDA certified/ nominated assessor

Accreditation Requirements

Training Providers must be accredited by National Skills Development Authority (NSDA), the National Quality Assurance Body, or a body with delegated authority for quality assurance to conduct training and assessment against this unit of competency for credit towards the award of qualification under NSQF. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by NSDA.

Development of First Draft of Competency Standard

The Competency Standards for National Skills Certificate, level-05 in **Web Design and Development for Freelancing** by the following members and approved by NSDA.

Respectable members:

	Web Design and Development for Freelancing	
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3.	Mirza Md. Hasan, Captain Themefic, Cell: 01916499260, Email: info@themefic.com	Member
4.	Imam Hossain, Software Developer Digicon Technologies Ltd, Cell: 01716491735, Email: imam2889@gmail.com	Member
5.	Rakibul Kabir, Business & web Developer, Innovate, Cell: 01819162909, Email: taposkabir1234@gmail.com	Member
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14.	Engr. B.M. Shariful Islam, Deputy Director (Skill Standard), NSDA Cell: +88 01715010321, Email: sharif9375@gmail.com	Member

Development of Second Draft of Competency Standard

The Competency Standards for National Skills Certificate, level-05 in **Web Design and Development for Freelancing** by the following members and approved by NSDA.

Respectable members

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Validation of Competency Standard by SCVC

The Competency Standards for National Skills Certificate Level-05 in **Web Design and Development for Freelancing,** is validated by SCVC on 30 and 31 May 2021 and approved by NSDA.

Respectable members of the SCVC:

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5.	Syed Salman Bin Kader, Assistant Programmer (Planning and Development), DoICT, ICT Division. Cell: 01787440110, Email: salmankaderrakin@gmail.com	Member
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