

# **National Technical and Vocational Qualifications Framework**

# **NTVQF**

**Competency Standards  
for  
Web Development,  
NTVQF Level – IV, V & VI**



**Bangladesh Technical Education Board (BTEB)**  
Agargaon, Sher-E-Bangla Nagar, Dhaka-1207

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## Introduction

These Competency Standards were developed by the Technical Sub Committee (TSC) that was established by **Information and Communication Technology Industry Skills Council**. The rules of Skill Development Policy are maintained to develop the standards. The competency standards are the foundation on which new competency-based curriculum will be developed that responds better to the needs of industry for skilled workers. The members of the TSC are primarily from industry and training institutes. The members were trained and guided by an International Expert and National Experts to develop the standard. Persons who will successfully complete the new TVET programs based on these competency standards will receive a qualification in the new National Technical and Vocational Qualification Framework (NTVQF).

Competency Standards are nationally agreed and industry-determined competencies required for effective work performance. These are presented in a consistent format following sequence such as:

- Unit Title
- Unit Code
- Nominal Hours
- Unit descriptor
- Elements and performance criteria
- Range of Variables
- Evidence Guide

The Competency Standards are the core element for training, assessment and certification of skilled workers. Candidates who are successful in the assessment will receive a qualification in the National Technical and Vocational Qualification Framework (NTVQF).

This document contains Course structures for each qualification. This structure contains the Unit code, Unit of Competency and nominal hours for the competencies.

The Competency Standard for Web development was developed by the Technical Sub Committee (TSC) that was established under the **Information and Communication Technology Industry Skills Council**. The technical support as well as financial support was provided by BTEB. The technical experts are primarily from industry nominated by Industry Skills Council with representatives from the Bangladesh Technical Education Board (BTEB), involved in this occupation. The Standards and Curriculum Development Committee (SCDC) of BTEB reviewed this document.

### Endorsed by

Industry Skills Council  
Date:

### Approved by

Bangladesh Technical Education Board (BTEB)  
Date:



## National Competency Standard for National Skill Certificate – IV, V & VI in Web Development in ICT Sector

### Bangladesh NTVQF with Job Classifications

NTVQF LEVELS	EDUCATION SECTORS			Job Classification
	Pre-Vocation Education	Vocational Education	Technical Education	
NTVQF 6			Diploma in engineering or equivalent	Middle Level Manager / Sub Assistant Engr. etc.
NTVQF 5		National Skill Certificate 5 (NSC 5)		Highly Skilled Worker / Supervisor
NTVQF 4		National Skill Certificate 4 (NSC 4)		Skilled Worker
NTVQF 3		National Skill Certificate 3 (NSC 3)		Semi-Skilled Worker
NTVQF 2		National Skill Certificate 2 (NSC 2)		Basic Skilled Worker
NTVQF 1		National Skill Certificate 1 (NSC 1)		Basic Worker
Pre-Voc 2	National Pre-Vocation Certificate 2 (NPVC 2)			Pre-Vocation Trainee
Pre-Voc 1	National Pre-Vocation Certificate 1 (NPVC 1)			Pre-Vocation Trainee

## Annex 1: NTVQF Level Descriptors

NTVQF Level	Knowledge	Skill	Responsibility	Job Class
6	<ul style="list-style-type: none"> <li>Comprehensive actual and theoretical knowledge within a specific study area with an awareness of the limits of that knowledge.</li> </ul>	<ul style="list-style-type: none"> <li>Specialised and restricted range of cognitive and practical skills required to provide leadership in the development of creative solutions to defined problems</li> </ul>	<ul style="list-style-type: none"> <li>Manage a team or teams in workplace activities where there is unpredictable change</li> <li>Identify and design learning programs to develop performance of team members</li> </ul>	Supervisor / Middle Level Manager / Sub Assistant Engr. etc.
5	<ul style="list-style-type: none"> <li>Very broad knowledge of the underlying, concepts, principles, and processes in a specific study area</li> </ul>	<ul style="list-style-type: none"> <li>Very broad range of cognitive and practical skills required to generate solutions to specific problems in one or more study areas.</li> </ul>	<ul style="list-style-type: none"> <li>Take overall responsibility for completion of tasks in work or study</li> <li>Apply past experiences in solving similar problems</li> </ul>	Highly Skilled Worker / Supervisor
4	<ul style="list-style-type: none"> <li>Broad knowledge of the underlying, concepts, principles, and processes in a specific study area</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Take responsibility, within reason, for completion of tasks in work or study</li> <li>Apply past experiences in solving similar problems</li> </ul>	Skilled Worker
3	<ul style="list-style-type: none"> <li>Moderately broad knowledge in a specific study area.</li> </ul>	<ul style="list-style-type: none"> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>Work or study under supervision with some autonomy</li> </ul>	Semi-Skilled Worker
2	<ul style="list-style-type: none"> <li>Basic underpinning knowledge in a specific study area.</li> </ul>	<ul style="list-style-type: none"> <li>Basic skills required to carry out simple tasks</li> </ul>	<ul style="list-style-type: none"> <li>Work or study under indirect supervision in a structured context</li> </ul>	Basic Skilled Worker
1	<ul style="list-style-type: none"> <li>Elementary understanding of the underpinning knowledge in a specific study area.</li> </ul>	<ul style="list-style-type: none"> <li>Limited range of skills required to carry out simple tasks</li> </ul>	<ul style="list-style-type: none"> <li>Work or study under direct supervision in a structured context</li> </ul>	Basic Worker
Pre-Voc 2	<ul style="list-style-type: none"> <li>Limited general knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Very limited range of skills and use of tools required to carry out simple tasks</li> </ul>	<ul style="list-style-type: none"> <li>Work or study under direct supervision in a well-defined, structured context.</li> </ul>	Pre-Vocation Trainee
Pre-Voc 1	<ul style="list-style-type: none"> <li>Extremely limited general knowledge</li> </ul>	<ul style="list-style-type: none"> <li>Minimal range of skills required to carry out simple tasks</li> </ul>	<ul style="list-style-type: none"> <li>Simple work or study exercises, under direct supervision in a clear, well defined structured context</li> </ul>	Pre-Vocation Trainee

## Acronyms


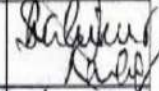
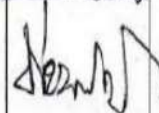
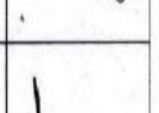
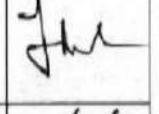

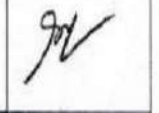
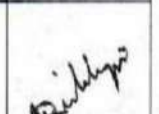
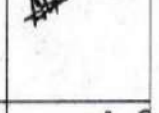
### General

BMET	Bureau of Manpower Employment and Training
BTEB	Bangladesh Technical Education Board
DTE	Directorate of Technical Education
ILO	International Labour Organization
ISC	Industry Skills Council
NPVC	National Pre-Vocation Certificate
NTVQF	National Technical and Vocational Qualification Framework
SSDC	Standards and Curriculum Development Committee
TVET	Technical Vocational Education and Training
UoC	Unit of Competency

### Occupation Specific Abbreviations

CMS	Content Management System
CSS	Cascading Style Sheets
DHTML	Dynamic Hyper Text Markup Language
FTP	File Transfer Protocol
HTML	Hyper Text Markup Language
IT	Information Technology
MS	Microsoft
MSDS	Material Safety Data Sheet
OSH	Occupational Safety and Health
PPE	Personal Protective Equipment
SEO	Search Engine Optimization
SOP	Standard Operating Procedures

**Bangladesh Technical Education Board (BTEB)**  
**Standard and Curriculum Development Committee**  
**National Competency Standards & Course Accreditation Document**  
**for**  
**Web Development, Level – IV, V & VI for**  
**Information and Communication Technology Sector**  
**Meeting held on 21.10.2020, 9.30 AM**

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03.	Mr. Akm Rashedul Islam,	Managing Director, L2N Software Limited House # 294, Road # 04, Baridhara DOHS, Dhaka	Member		
04.	Mr. Hasan Mahamud Rana,	Manager & Lead Developer (Web / e-Commerce division), Fiftytwo Digital Ltd.	Member		
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08.	Dr. Md. Shah Alam Majumder,	Specialist (C.A), BTEB, Dhaka	Member		
09.	Mrs. Humyra Maisur,	Quality Assurance Officer, BTEB, Dhaka	Member		



## The Qualification of the Competency Standards

<b>1. Title of Qualification: National Skill Certificate – IV, V &amp; VI in Web Development in ICT Sector</b>	
<b>2. Qualification Code:</b>	<b>ICTWEB</b>
<b>3. Endorsement Date:</b>	<b>21<sup>st</sup> Oct, 2020</b>
<b>4. Purpose of the Qualification</b>	<p>The NSC - IV in Web Development Qualification consists of a set Web Design works of competencies that a person must achieve in order to work competently in the ICT Sector as a Junior Web Developer.</p> <p>In particular, he / she should be able to:</p> <ol style="list-style-type: none"> <li>1. Work in a team environment</li> <li>2. Use English in the workplace</li> <li>3. Maintain Occupational Safety and Health (OSH) in it workplace</li> <li>4. Interpret web technology and industry requirement</li> <li>5. Convert UI / UX to markup language</li> <li>6. Develop responsive website using framework</li> <li>7. Develop website using client side scripting language</li> <li>8. Develop dynamic website using CMS</li> <li>9. Deploy website</li> </ol> <p>The NSC – V in Web Development Qualification consists of a set Web Design works of competencies that a person must achieve in order to work competently in the ICT Sector as a Mid-Level Web Developer.</p> <p>In particular, he / she should be able to:</p> <ol style="list-style-type: none"> <li>1. Lead small team</li> <li>2. Practice negotiation skills</li> <li>3. Prepare a business plan</li> <li>4. Apply compliance and ethics in IT work place</li> <li>5. Develop website using client side scripting language framework</li> <li>6. Develop theme and plugin for CMS</li> <li>7. Implement web security</li> <li>8. Perform web analytics</li> <li>9. Maintain website</li> </ol> <p>The NSC – VI in Web Development Qualification consists of a set Web Design works of competencies that a person must achieve in order to work competently in the ICT Sector as a Web Developer.</p>

	<p>In particular, he / she should be able to:</p> <ol style="list-style-type: none"> <li>1. Practice creativity and innovation in workplace</li> <li>2. Develop dynamic website using framework</li> <li>3. Develop eCommerce website using eCommerce solution</li> <li>4. Manipulate data using data layer</li> <li>5. Prepare project proposal</li> </ol>
<b>5. Regulatory Arrangements</b>	The holder of this qualification should have been assessed by a BTEB certified assessor and found to be competent in the units listed.
<b>6. Accreditation Requirements</b>	The qualifications shall be offered in compliance with the accreditation requirements set by BTEB.
<b>7. Transition Arrangements</b>	In the absence of certified assessors, the BTEB shall appoint trainers who have undergone assessment trainings.
<b>8. Contact for Comments</b>	<p>Chairman          Bangladesh Technical Education Board (BTEB)          Agargaon, Sher-E-Bangla Nagar, Dhaka - 1207</p>

**National Competency Standards for National Skill Certificate Level – IV, V & VI  
in Web Development in ICT Sector**

## Course Structure

SL	Unit Code and Title		UoC Level	Nominal Duration (Hours)
The Generic Competencies (06 UoCs required)				190
1.	GN1003A2	Work in a Team Environment	1	20
2.	GN2003A1	Use English in the Workplace	2	70
3.	GN4007A2	Lead Small Team	4	20
4.	GN3011A1	Practice Negotiation Skills	3	20
5.	GN4015A1	Prepare a Business Plan	4	40
6.	GN5017A1	Practice Creativity and Innovation in Workplace	5	20
The Sector specific Competencies (02 UoCs required)				50
1.	ICTSS3005A1	Maintain Occupational Safety and Health (OSH) in IT workplace	3	30
2.	ICTSS2009A1	Apply Compliance and Ethics in IT Workplace	2	20
The Occupation Specific Competencies (15 UoCs required)				740
1.	ICTWEB4001A2	Interpret Web Technology and Industry Requirement	4	15
2.	ICTWEB4002A2	Convert UI / UX to Markup Language	4	40
3.	ICTWEB4003A2	Develop Responsive Website Using Framework	4	60
4.	ICTWEB4004A2	Develop Website Using Client Side Scripting Language	4	70
5.	ICTWEB4005A2	Develop Dynamic Website Using CMS	4	70
6.	ICTWEB4006A2	Deploy Website	4	15
7.	ICTWEB5007A2	Develop Website Using Client Side Scripting Language Framework	5	80
8.	ICTWEB5008A2	Develop Theme and Plugin for CMS	5	60

9.	ICTWEB5009A2	Implement Web Security	5	40
10	ICTWEB5010A2	Perform Web Analytics	5	25
11.	ICTWEB5011A1	Maintain Website	5	15
12.	ICTWEB6012A1	Develop Dynamic Website Using Framework	6	80
13.	ICTWEB6013A2	Develop eCommerce Website Using eCommerce Solution	6	90
14.	ICTWEB6014A2	Manipulate Data Using Data Layer	6	60
15.	ICTWEB6015A1	Prepare Project Proposal	6	20
<b>Total Nominal Learning Hours</b>				<b>980</b>



**National Competency Standards for National Skill Certificate Level – IV, V & VI  
in Web Development in ICT Sector**

**Course Structure – Level – IV**

SL	Unit Code and Title		UoC Level	Nominal Duration (Hours)
The Generic Competencies (02 UoCs required)				90
1.	GN1003A2	Work in a Team Environment	1	20
2.	GN2003A1	Use English in the Workplace	2	70
The Sector Specific Competency (01 UoC required)				30
1.	ICTSS3005A1	Maintain Occupational Safety and Health (OSH) in IT workplace	3	30
The Occupation Specific Competencies (06 UoCs required)				270
1.	ICTWEB4001A2	Interpret Web Technology and Industry Requirement	4	15
2.	ICTWEB4002A2	Convert UI / UX to Markup Language	4	40
3.	ICTWEB4003A2	Develop Responsive Website Using Framework	4	60
4.	ICTWEB4004A2	Develop Website Using Client Side Scripting Language	4	70
5.	ICTWEB4005A2	Develop Dynamic Website Using CMS	4	70
6.	ICTWEB4006A2	Deploy Website	4	15
Total Learning Hours				390
On-the Job Training				160
Total Nominal Hours				550

**National Competency Standards for National Skill Certificate Level – IV, V & VI  
in Web Development in ICT Sector**

**Course Structure - Level - V**

SL	Unit Code and Title		UoC Level	Nominal Duration (Hours)
The Generic Competency (03 UoC required)				80
1.	GN4007A2	Lead Small Team	4	20
2.	GN3011A1	Practice Negotiation Skills	3	20
3.	GN4015A1	Prepare a Business Plan	4	40
The Sector Specific Competency (01 UoCs required)				20
4.	ITSS2009A1	Apply Compliance and Ethics in IT Work Place	2	20
The Occupation Specific Competencies (05 UoCs required)				220
1.	ICTWEB5007A2	Develop Website Using Client Side Scripting Language Framework	5	80
2.	ICTWEB5008A2	Develop Theme and Plugin for CMS	5	60
3.	ICTWEB5009A2	Implement Web Security	5	40
4.	ICTWEB5010A2	Perform Web Analytics	5	25
5.	ICTWEB5011A1	Maintain Website	5	15
Total Learning Hours				320
On-the Job Training				216
Total Nominal Hours				536

**National Competency Standards for National Skill Certificate Level – IV, V & VI  
in Web Development in ICT Sector**

**Course Structure - Level - VI**

SL	Unit Code and Title			UoC Level	Nominal Duration (Hours)
The Generic Competency (01 UoC required)					20
1	GN5017A1	Practice Creativity and Innovation in Workplace		5	20
The Occupation Specific Competencies (04 UoCs required)					250
1.	ICTWEB6012A1	Develop Dynamic Website Using Framework		6	80
2.	ICTWEB6013A2	Develop eCommerce Website Using eCommerce Solution		6	90
3.	ICTWEB6014A2	Manipulate Data Using Data Layer		6	60
4.	ICTWEB6015A1	Prepare Project Proposal		6	20
Total Learning Hours					270
On-the Job Training					216
Total Nominal Hours					486

## **The Generic Competencies**



## National Technical and Vocational Qualifications Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Work in a Team Environment</b>
<b>Unit Code</b>	<b>GN1003A2</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to work in a team environment. It includes interpreting team objectives and work processes, defining team role and scope, working as a team member, and communicating and cooperating with team members.
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Interpret team objectives and work processes	1.1 Objectives of team are defined from available <b>sources of information</b> . 1.2 Work plan is interpreted. 1.3 Working processes are clearly interpreted.
2. Define team role and scope	2.1 Team structure and reporting relationship within the team are identified and interpreted. 2.2 <b>Role and responsibilities</b> of team members are defined according to job description. 2.3 Scopes of jobs for <b>team members</b> are identified and interpreted according to job requirements.
3. Work as a team member	3.1 Individual duties, responsibilities, authorities are clarified. 3.2 Tasks of team members are identified as per workplace standards. 3.3 Effective <b>forms of communication</b> are used to interact with team members. 3.4 Communication channels are maintained as per <b>workplace context</b> .
4. Communicate and cooperate with team members	4.1 Effective <b>interpersonal skills</b> are applied to interact with team members. 4.2 Views and opinions of other team members are respected and reflected accurately. 4.3 Appropriate <b>workplace terminology</b> is used for effective communication.

	4.4 Ideas related to team plans are contributed and recommendations for improving team work are move forward.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Sources of information	1.1 Standard Operating Procedures (SOP) 1.2 Job description 1.3 Operations Manuals 1.4 Organizational structures
2. Role and responsibilities	2.1 Contributing to overall team objectives 2.2 Completing individual deliverables 2.3 Providing expertise 2.4 Documenting the process 2.5 Mutual accountability
3. Team members	3.1 Employee / workers 3.2 Supervisor / manager 3.3 Peers / colleagues 3.4 Employee representative 3.5 Coach / mentors
4. Forms of communication	4.1 Verbal communication 4.2 Written communication 4.3 Nonverbal communication
5. Workplace context	5.1 National Laws and Statutes 5.2 Standard Operating Procedures 5.3 Workplace Rules and Regulations
6. Interpersonal skills	6.1 Listening skills 6.2 Negotiation 6.3 Problem-solving 6.4 Decision-making 6.5 Assertiveness 6.6 Work Ethic 6.7 Body Language 6.8 Collaboration 6.9 Positive Attitude 6.10 Workplace Etiquette
7. Workplace terminology	7.1 Sector 7.2 Occupation 7.3 Profession 7.4 Career

	7.5 Field 7.6 Job 7.7 Task 7.8 Position 7.9 Master Craft Person (MCP) 7.10 Administrator 7.11 Manager 7.12 Annual Confidential Report (ACR)
<b>Evidence Guide</b> 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 evidences that the candidate: 1.1 demonstrated knowledge in working in a team environment; 1.2 interpreted work plan; 1.3 maintained communication channels; and 1.4 viewed and respected other team member's opinions.
2. Underpinning knowledge	2.1 Team objective, sources of information and work process. 2.2 Team structure, reporting relation, role and responsibilities, and scope of job. 2.3 Individual duties, responsibilities and authorities. 2.4 Tasks requirements, effective form of communication and workplace context. 2.5 Interpersonal skills, views and opinion of team members and workplace terminologies. 2.6 Idea related to team plan and recommendation.
3. Underpinning skills	3.1 Identifying role and responsibilities of team. 3.2 Identifying roles and responsibilities of individual members. 3.3 Participating in team discussion. 3.4 Working as a team member.
4. Required attitudes	4.1 Promptness in carrying out activities. 4.2 Sincere and honest to duties. 4.3 Eagerness to learn. 4.4 Positive attitude. 4.5 Tidiness and timeliness. 4.6 Environmental concerns. 4.7 Respect for rights of peers and seniors at workplace. 4.8 Communication with peers and seniors at workplace. 4.9 Loyal to the senior colleagues

5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 operations manual, job description manuals and organogram; and</p> <p>5.3 sample case studies documents.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated work place after completion of the training module.</p> <p>7.2 Assessment should be done by BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	



## National Technical and Vocational Qualifications Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Use English in the Workplace</b>
<b>Unit Code</b>	<b>GN2004A2</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to use English in the workplace. It includes practicing to prepare simple sentence, read and interpret workplace documents in English, writing simple routine workplace documents in English, listen conversation in English, and performing conversation in English.
<b>Nominal Hours</b>	<b>70 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Practice to prepare simple sentence	1.1 Common vocabulary is identified usually used in the workplace. 1.2 Spelling and correct punctuation of the identified vocabulary are checked and learned. 1.3 Correct sentences are formed and practiced in written and spelled orally.
2. Read and interpret workplace documents in English	2.1 <b><i>Workplace documents</i></b> are collected. 2.2 Workplace documents are read and interpreted. 2.3 <b><i>Visual information</i></b> is interpreted in English.
3. Write simple routine workplace documents in English	3.1 Simple routine workplace documents are prepared using key words, phrases, simple sentences and visual aids where appropriate. 3.2 Key information is written in the appropriate places in standard forms.
4. Listen conversation in English	4.1 Way of active listening are interpreted. 4.2 Conversation text is interpreted / written correctly after active listening. 4.3 Attention to the speaker is created / communicated through <b><i>non-verbal means</i></b> . 4.4 Appropriate response and feedback are provided in English.

5. Perform conversation in English	<p>5.1 Conversation / dialogue is performed in English as per job requirements with peers, customers and management.</p> <p>5.2 Good gesture and posture are used during conversation.</p> <p>5.3 Clear and simple sentences are used during conversation.</p> <p>5.4 Pauses are used for emphasizing the important portion of the dialogue.</p> <p>5.5 Information is communicated to the clients.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Workplace documents	<p>1.1 Schedules and itineraries</p> <p>1.2 Agenda</p> <p>1.3 Meeting minutes</p> <p>1.4 progress and incident reports</p> <p>1.5 Job sheets</p> <p>1.6 Operational manuals</p> <p>1.7 Brochures and promotional material</p> <p>1.8 Visual and graphic materials</p> <p>1.9 Standards</p> <p>1.10 Occupational Safety and Health (OSH) information</p>
2. Visual information	<p>2.1 Signs</p> <p>2.2 Maps</p> <p>2.3 Diagrams</p> <p>2.4 Forms</p> <p>2.5 Labels</p> <p>2.6 Graphs</p> <p>2.7 Charts</p>
3. Non-verbal means	<p>3.1 Sings</p> <p>3.2 Symbols</p> <p>3.3 Touch</p> <p>3.4 Physical expression</p> <p>3.5 Eye contact</p> <p>3.6 Facial expression</p>
<b>Evidence Guide</b>	
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	<p>Assessment required evidences that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 interpreted workplace documents;</li> <li>1.2 interpreted visual information;</li> <li>1.3 prepared workplace documents in English;</li> <li>1.4 interpreted / written the text of conversation correctly after active listening;</li> <li>1.5 provided responses and feedback; and</li> <li>1.6 used good gesture and posture during conversation.</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 Workplace documents.</li> <li>2.2 Technique of writing workplace documents in English.</li> <li>2.3 Listening techniques in English.</li> <li>2.4 Conversation and dialogue procedure in English.</li> <li>2.5 Interaction skills, job roles, responsibilities and compliances issues in English.</li> </ul>
3. Underpinning skills	<ul style="list-style-type: none"> <li>3.1 Reading and interpreting workplace documents in English.</li> <li>3.2 Using vocabulary and grammar, and standard spelling and punctuation.</li> <li>3.3 Writing simple routine workplace documents in English, such as: schedules and agendas, job sheets, operational manuals and brochures, and promotional material.</li> <li>3.4 Demonstrating listen English language to required workplace standard.</li> <li>3.5 Performing conversation in English with peers, customers and management.</li> <li>3.6 Working effectively with others.</li> <li>3.7 Listening and questioning skills.</li> <li>3.8 Following simple directions.</li> </ul>
4. Required attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational safety and health.</li> <li>4.2 Promptness in carrying out activities.</li> <li>4.3 Sincere and honest to duties.</li> <li>4.4 Eagerness to learn.</li> <li>4.5 Tidiness and timeliness.</li> <li>4.6 Environmental concerns.</li> <li>4.7 Respect for rights of peers and seniors at workplace.</li> <li>4.8 Communication with peers and seniors at workplace.</li> </ul>
5. Resources implication	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>5.1 workplace (actual or simulated);</li> <li>5.2 tools, equipment and physical facilities appropriate to perform activities; and</li> <li>5.3 materials, consumables needed to perform activities.</li> </ul>

6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training centre or in an actual or simulated workplace after completing of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualifications Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Lead Small Team</b>
<b>Unit Code</b>	<b>GN4007A2</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to lead small team. It includes providing team leadership, assigning responsibilities, setting performance expectations for team members, supervising team performance and practicing problem solving within the team.
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Provide team leadership	1.1 <b><i>Work requirements</i></b> are identified and presented to team members. 1.2 Reasons for instructions and requirements are communicated with team members. 1.3 <b><i>Team members' queries and concerns</i></b> are recognized, discussed and dealt with team members.
2. Assign responsibilities	2.1 Duties, and responsibilities are allocated properly considering the assigned task. 2.2 Duties are allocated regarding individual preference, domestic and personal considerations whenever possible.
3. Set performance expectations for team members	3.1 Performance expectations are set based on individual team member duties and area of responsibilities. 3.2 Performance expectations are discussed and directed to implement at workplace. 3.3 Performance expectations are established based on client needs and according to assignment requirements.
4. Supervise team performance	4.1 <b><i>Monitoring of performance</i></b> are taken place against defined performance criteria 4.2 Assignment instructions and corrective action are taken if required. 4.3 Team members are provided <b><i>feedback</i></b> , positive support and advice on strategies to overcome the deficiencies.

	<p>4.4 <b>Performance issues</b> which cannot be rectified or addressed within the team are referenced to designated person.</p> <p>4.5 Team members are kept informed of any changes in the priority allocated to assignments or tasks Team operations are monitored to ensure that employer / client needs and requirements are met.</p> <p>4.6 Follow-up communication is provided on all issues affecting the team.</p>
5. Practice problem solving within the team	<p>5.1 Problems faced at the individual and team level are identified and shown the root causes of the problems.</p> <p>5.2 Range of solutions and courses of action are identified together with benefits, costs, and risks associated with each.</p> <p>5.3 Good ideas of others to help develop solutions are recognized and advice sought from those who have solved similar problems.</p> <p>5.4 Recommendations for improving team work are put forward.</p> <p>5.5 Current and potential problems faced by team are identified.</p> <p>5.6 Procedures for avoiding and managing problems are identified.</p> <p>5.7 <b>Problems solving activities</b> are applied effectively and, in a manner, which supports the team.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but are not limited to):
1. Work requirements	<p>1.1 Client Profile</p> <p>1.2 Assignment instructions</p>
2. Team member's queries and concerns	<p>2.1 Roster</p> <p>2.2 Shift details</p>
3. Monitoring of performance	<p>3.1 Formal process</p> <p>3.2 Informal process</p>
4. Feedback	<p>4.1 Formal process</p> <p>4.2 Informal process</p> <p>4.3 Sandwich process</p>
5. Performance issues	<p>5.1 Work output</p> <p>5.2 Work quality</p>

	5.3 Team participation 5.4 Compliance with workplace protocols 5.5 Safety 5.6 Customer service
6. Problems solving activities	6.1 Identifying the problem 6.2 Consider solutions 6.3 Action 6.4 Follow-up
<b>Evidence Guide</b> 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 evidences that the candidate: 1.1 identified and presented work requirements; 1.2 allocated duties and responsibilities considering task requirements; 1.3 established performance expectations as per assignment requirements; 1.4 monitored performance, provided feedback and positive support; and 1.5 applied problem-solving activities.
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. 2.7 Understanding the root causes of problem and problem-solving strategies.
3. Underpinning skills	3.1 Counseling informal performance skills. 3.2 Building team skills. 3.3 Negotiating skills. 3.4 Problem analysis. 3.5 Applying problem solving activities. 3.6 Providing feedback and positive support.
4. Required attitudes	4.1 Commitment to occupational safety and health. 4.2 Promptness in carrying out activities. 4.3 Sincere and honest to duties. 4.4 Eagerness to learn. 4.5 Tidiness and timeliness. 4.6 Environmental concerns. 4.7 Communicate with peers and seniors in workplace. 4.8 Respect for rights of peers and seniors in workplace.



5. Resource implications	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 relevant standards and reference manual; and</p> <p>5.3 sample case study documents.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

**National Technical and Vocational Qualifications Framework for Bangladesh**  
**Unit of Competency**

<b>Unit Title</b>	<b>Practice Negotiation Skills</b>
<b>Unit Code</b>	<b>GN3011A1</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to practice negotiation skills. It includes planning negotiations and participating in negotiations.
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Plan negotiations	1.1 Information on <b><i>preparing for negotiation</i></b> is identified and included in the plan. 1.2 Information on creating <b><i>non-verbal environments</i></b> for positive negotiating is identified and included in the plan. 1.3 Information on <b><i>active listening</i></b> is identified and included in the plan. 1.4 Information on different <b><i>questioning techniques</i></b> is identified and included in the plan. 1.5 Information is checked to ensure it is correct and up-to-date.
2. Participate in negotiations	2.1 Criteria for successful outcome are agreed upon by all parties. 2.2 Desired outcome of all parties is considered. 2.3 Appropriate language is used throughout the negotiation. 2.4 A variety of questioning techniques are used. 2.5 The issues and processes are documented and agreed upon by all parties. 2.6 Possible solutions are discussed and their viability assessed. 2.7 Areas for agreement are confirmed and recorded. 2.8 Follow-up action is agreed upon by all parties.
<b>Range of Variables</b>	

Variable	Range (may include but not limited to):
1. Preparing for negotiation	1.1 Background information on other parties to the negotiation 1.2 Good understanding of topic to be negotiated 1.3 Clear understanding of desired outcome/s 1.4 Personal attributes <ul style="list-style-type: none"> <li>▪ Self esteem</li> <li>▪ Self esteem</li> <li>▪ Objectivity</li> <li>▪ Empathy</li> <li>▪ Respect for others</li> </ul> 1.5 Interpersonal skills <ul style="list-style-type: none"> <li>▪ Listening / reflecting</li> <li>▪ Non-verbal communication</li> <li>▪ Assertiveness</li> <li>▪ Behavior labeling</li> <li>▪ Testing understanding</li> <li>▪ Seeking information</li> <li>▪ Self-disclosure</li> </ul> 1.6 Analytic skills <ul style="list-style-type: none"> <li>▪ Observing differences between content and process</li> <li>▪ Identifying bargaining information</li> <li>▪ Applying strategies to manage process</li> <li>▪ Applying steps in negotiating process</li> <li>▪ Strategies to manage conflict</li> <li>▪ Steps in negotiating process</li> <li>▪ Options within organization and externally for resolving conflict</li> </ul>
2. Non-verbal environments	2.1 Friendly reception 2.2 Warm and welcoming room 2.3 Refreshments offered 2.4 Lead in conversation before negotiation begins
3. Active listening	3.1 Attentive 3.2 Don't interrupt 3.3 Good posture 3.4 Maintain eye contact 3.5 Reflective listening
4. Questioning techniques	4.1 Direct 4.2 Indirect 4.3 Human Open-ended

**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	<p>Assessment required evidences that the candidate:</p> <p>1.1 demonstrated sufficient knowledge of the factors influencing negotiation to achieve agreed outcome; and</p> <p>1.2 participated in negotiation with at least one person to achieve an agreed outcome.</p>
2. Underpinning knowledge	<p>2.1 Codes of practice and guidelines for the organization.</p> <p>2.2 Organization policy and procedures for negotiations.</p> <p>2.3 Decision making and conflict resolution strategies procedures.</p> <p>2.4 Problem solving strategies on how to deal with unexpected questions and attitudes during negotiation.</p> <p>2.5 Flexibility.</p> <p>2.6 Empathy.</p>
3. Underpinning skills	<p>3.1 Interpersonal skills to develop rapport with other parties.</p> <p>3.2 Communication skills (verbal and listening).</p> <p>3.3 Observation skills.</p> <p>3.4 Negotiation skills.</p>
4. Required attitudes	<p>4.1 Commitment to occupational safety and health.</p> <p>4.2 Promptness in carrying out activities.</p> <p>4.3 Sincere and honest to duties.</p> <p>4.4 Environmental concerns.</p> <p>4.5 Eagerness to learn.</p> <p>4.6 Tidiness and timeliness.</p> <p>4.7 Respect to rights of peers and seniors at workplace.</p> <p>4.8 Communication with peers and seniors at workplace.</p>
5. Resource implications	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated), and</p> <p>5.2 human resources (negotiators).</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>

7. Context of assessment	<p>7.1 Competency assessment must be done in a training centre or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualifications Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Prepare a Business Plan</b>
<b>Unit Code</b>	<b>GN4015A1</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to prepare a business plan. It includes preparing a marketing plan, calculating cost, identifying require workforce/staff, preparing financial plan and completing business plan for presentation/submission.
<b>Nominal Hours</b>	<b>40 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Prepare a marketing plan	1.1 Concept of marketing is interpreted. 1.2 Products, services and target market are identified. 1.3 Concepts of marketing mix (4Ps) are interpreted. 1.4 Available <b><i>marketing tools and medium</i></b> are identified. 1.5 Marketing costs are identified. 1.6 Potential competitors are identified. 1.7 Marketing plan preparation guidelines is analyzed and a business plan is prepared.
2. Calculate cost	2.1 Concept of costing is interpreted. 2.2 <b><i>Types of cost</i></b> are identified. 2.3 Total fixed cost is identified 2.4 Total operational cost is identified considering raw materials and other related cost. 2.5 Per unit cost is calculated.
3. Identify require workforce/staff	3.1 Concept of staffing are interpreted. 3.2 Need for staff is identified. 3.3 Required skills and payment structure are defined. 3.4 Recruitment and selection process are defined. 3.5 Roles and responsibilities of staff are defined. 3.6 <b><i>Decent work issues</i></b> are ensured.
4. Prepare financial plan	4.1 Concepts of financial planning and its importance are interpreted. 4.2 Concepts of profit and loss analysis is interpreted. 4.3 Income and expenses analysis is conducted. 4.4 Capital/initial investment and operational expenses are

	<p>identified.</p> <p>4.5 Basic concepts of budget and financial forecast are interpreted.</p> <p>4.6 Concepts of financial institutions, loan and its related factors are interpreted.</p> <p>4.7 Feasibility study is conducted.</p>
5. Complete business plan for presentation/sub mission	<p>5.1 Competitive advantages are identified.</p> <p>5.2 Potential risks are identified.</p> <p>5.3 Business plan formats are analyzed.</p> <p>5.4 Draft business plan is prepared.</p> <p>5.5 Draft business plan is reviewed by <b>experts</b>.</p> <p>5.6 Business plan is finalized and presented in front of experts.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Marketing tools and medium	<p>1.1 Social Media</p> <p>1.2 Website</p> <p>1.3 Banner</p> <p>1.4 Festoon</p> <p>1.5 Trade fair</p> <p>1.6 Leaflet</p>
2. Types of cost	<p>2.1 Fixed cost</p> <p>2.2 Variable cost</p> <p>2.3 Direct cost</p> <p>2.4 Indirect cost</p>
3. Decent work issues	<p>3.1 Minimum wage</p> <p>3.2 Defined work hour</p> <p>3.3 Overtime</p> <p>3.4 Leave</p> <p>3.5 Work-place safety</p> <p>3.6 Other benefits</p>
4. Experts	<p>4.1 Banker</p> <p>4.2 Consultant</p> <p>4.3 Trainer</p> <p>4.4 Assessor</p> <p>4.5 Investor</p> <p>4.6 Successful entrepreneur</p>
<b>Evidence Guide</b>	
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	<p>Assessment required evidences that the candidate:</p> <p>1.1 identified product, services and target market;  1.2 calculated per unit cost;  1.3 identified competitive advantages; and  1.4 finalised business plan.</p>
2. Underpinning knowledge	<p>2.1 Marketing tools and medium.  2.2 Types cost.  2.3 Decent work issues.  2.4 Profit loss analysis.  2.5 Concepts of marketing mix.  2.6 Require human resources.  2.7 Procedure of recruitment and selection process.  2.8 Income and expenses analysis.</p>
3. Underpinning skills	<p>3.1 Identifying marketing tools and medium.  3.2 Identifying products, services and target market for business.  3.3 Calculating per unit cost.  3.4 Analyzing profit loss.  3.5 Identifying initial investment and operational expenses.  3.6 Identifying potential competitor and risk.  3.7 Carrying out feasibility study.  3.8 Preparing and presenting a business plan.</p>
4. Required attitudes	<p>4.1 Commitment to occupational safety and health.  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 to rights of peers and seniors at workplace.  4.8 Communication with peers and seniors at workplace.</p>
5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated); and  5.2 business planning template.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited:</p> <p>6.1 written test;  6.2 demonstration;  6.3 oral questioning; and  6.4 portfolio</p>



7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated work place after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualifications Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Practice Creativity and Innovation in Workplace</b>
<b>Unit Code</b>	<b>GN5017A1</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to practice creativity and innovation in workplace. It includes interpreting creativity and innovation, recognizing innovative idea, participating to workplace innovation, creating action plan for innovation, accomplishing innovative action plan and adapting innovation with workplace practices.
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Interpret creativity and innovation	1.1 Creativity and innovation process are interpreted. 1.2 Innovation and invention is differentiated. 1.3 Types and <b><i>sources of innovation</i></b> are identified. 1.4 <b><i>Creativity and innovation techniques</i></b> and steps of creative process are identified, 1.5 Models of innovation and innovation process are identified. 1.6 Obstacles to progress in implementing flexible and innovative ways in working are recognized.
2. Recognize innovative idea	2.1 Need for innovation in workplace is identified. 2.2 Innovative and creative ideas are recognized. 2.3 Individuals' access to flexible and innovative ways of working is supported. 2.4 Creativity and innovation technique is selected as per workplace situation. 2.5 Creativity and innovation techniques are applied for recognizing innovative idea.
3. Participate to workplace innovation	3.1 Opportunities for betterment and continuous improvement are identified. 3.2 Opportunities for innovation practices in workplace are identified. 3.3 Ideas for improvement and innovation are discussed with others. 3.4 Ideas for changes are integrated within workplace.

4. Create action plan for innovation	<p>4.1 Work procedures, processes and systems in terms of innovative practices are assessed.</p> <p>4.2 Practical action plans for improving work procedures, processes are generated.</p> <p>4.3 Effectiveness of the proposed action plans is evaluated.</p>
5. Accomplish innovative action plan	<p>5.1 Existing workplace practices is reviewed and analyzed.</p> <p>5.2 Innovation practices in the workplace is examined by comparing with created innovative action plan.</p> <p>5.3 Fine tuning in innovation is made according to the need of the organization.</p> <p>5.4 Innovative action plan is implemented as a pilot works / project.</p>
6. Adapt innovation with workplace practices	<p>6.1 Lesson learn from the implementation of innovative works/ project is documented.</p> <p>6.2 Standards, procedures and processes of innovative works / project is modified as per lesson learn from pilot implementation.</p> <p>6.3 Potential resistance against innovation are identified and mitigated.</p> <p>6.4 Coaching culture for learning and innovative practices in the organization is established.</p> <p>6.5 Direction to maintain culture of learning and innovation practices in organization is set.</p> <p>6.6 Modified innovative works / project is adopted.</p> <p>6.7 Continuous improvement in innovative works /project are practiced and adapted.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Sources of innovation	<p>1.1 Unexpected occurrences</p> <p>1.2 Incongruities of various kinds</p> <p>1.3 Process needs</p> <p>1.4 Changes in an industry or market</p> <p>1.5 Demographic changes</p> <p>1.6 Changes in perceptions</p> <p>1.7 New knowledge</p>
2. Creativity and innovation techniques	<p>2.1 Diverging techniques</p> <p>2.1.1 Attribute listing</p> <p>2.1.2 Checklist</p> <p>2.1.3 Brainstorming</p>

	2.2 Converging techniques 2.2.1 Weighted selection 2.3 Open & Closed problems analysis 2.4 Products & Services situations analysis
3. Potential resistance	3.1 Fear of change 3.2 Job loss 3.3 Lack of knowledge 3.4 Loss of authority 3.5 Limited thinking
<b>Evidence Guide</b> 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 evidences that the candidate: 1.1 identified opportunities for continuous improvement and innovation; 1.2 recognized obstacles to progress; 1.3 used techniques to finalized idea; 1.4 discussed ideas for improvement and innovation; 1.5 examined innovation practices in the workplace; and 1.6 identified and mitigated potential resistance against innovation.
2. Underpinning knowledge	2.1 Differentiated innovation and invention. 2.2 Types and sources of innovation. 2.3 Steps of creative process. 2.4 Models of innovation. 2.5 Innovation process. 2.6 Divergent and convergent techniques. 2.7 Cause of resistance. 2.8 Procedure of reducing resistance. 2.9 Gap analyzing process.
3. Underpinning skills	3.1 Identifying opportunities for continuous improvement and innovation. 3.2 Recognizing obstacles to progress. 3.3 Analyzing gathered information and gaps. 3.4 Applying techniques of finalizing data. 3.5 Modifying idea. 3.6 Evaluating existing standards, procedures and processes. 3.7 Maintaining culture of learning.

4. Required attitudes	4.1 Commitment to occupational safety and health. 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 to rights of peers and seniors at workplace. 4.8 Communication with peers and seniors at workplace.
5. Resource implication	The following resources must be provided: 5.1 workplace (actual or simulated); and 5.2 relevant material and resources.
6. Methods of assessment	Methods of assessment may include but not limited: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated work place after completion of the training module. 7.2 Assessment should be done by a BTEB certified assessor.
<b>Accreditation Requirements</b> Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

## **The Sector Specific Competencies**

**National Technical and Vocational Qualifications Framework for Bangladesh**  
**Unit of Competency**

<b>Unit Title</b>	<b>Maintain Occupational Safety and Health (OSH) in IT Workplace</b>
<b>Unit Code</b>	<b>ICTSS3005A1</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to maintain Occupational Safety and Health (OSH) in IT Workplace. It includes identifying safety and health issues and applying personal safety and health practices for IT workplace, identifying and reporting hazards and risks, following emergency response procedures, and maintaining and improving safety and health at workplace.
<b>Nominal Hours</b>	<b>30 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the Range of Variables
1. Identify safety and health issues in IT workplace	1.1 <b><i>Personal Protective Equipment (PPE)</i></b> for IT related jobs are identified. 1.2 <b><i>Type of IT workplace</i></b> are determined as per requirement. 1.3 <b><i>Safety and health issues for IT workplace</i></b> are clarified. 1.4 <b><i>Safety signs and tags</i></b> are identified.
2. Apply personal health and safety practices for IT workplace	2.1 <b><i>Safe and hygiene work environment</i></b> are established. 2.2 Personal health and hygiene are interpreted. 2.3 Personal Health and hygiene are maintained according to health and hygiene procedures. 2.4 Personal Protective Equipment (PPE) are worn correctly and stored after use. 2.5 Clean and tidy workplace is maintained regularly. 2.6 Workplace safety conditions are regularly inspected and reported to designated authority.
3. Identify and report hazards and risks	3.1 Immediate work area is routinely checked for hazards and risks prior to commencing and during work. 3.2 <b><i>Hazards</i></b> and risks are identified. 3.3 Corrective actions are taken to mitigate hazards and risks within the level of responsibilities.

	<p>3.4 Incidents arising from hazards and risks are reported to designated authority.</p> <p>3.5 Details of incidents are recorded accurately and clearly.</p>
4. Follow emergency response procedures	<p>4.1 <b>Emergency situations</b> are identified and reported according to workplace requirements.</p> <p>4.2 <b>Workplace emergency procedures</b> are followed as appropriate to the nature of the emergency and according to workplace procedures.</p> <p>4.3 Workplace procedures for dealing with accidents, fires and emergencies are followed.</p> <p>4.4 Emergency response plans and procedures are implemented.</p>
5. Maintain and improve health and safety in the workplace	<p>5.1 <b>Preventive measures</b> are taken for OSH regularly.</p> <p>5.2 Corrective actions are taken to correct unsafe conditions in the workplace.</p> <p>5.3 Recommendations arising from risk assessments are implemented within level of responsibility.</p> <p>5.4 Opportunities for improving OSH performance are identified and reported to relevant personnel.</p> <p>5.5 Social media and internet addition are prevented and ensured.</p> <p>5.6 Safety records are maintained according to company policies.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Personal Protective Equipment (PPE)	<p>1.1 Aprons</p> <p>1.2 Ear plugs</p> <p>1.3 Face mask</p> <p>1.4 Hand gloves</p> <p>1.5 Light and clean antistatic shoes</p>
2. Type of IT workplace	<p>2.1 Hardware, system and network servicing workshop</p> <p>2.2 Software development lab/room</p>
3. Safety and Health issues for IT workplace	<p>3.1 Ergonomics impairment</p> <p>3.2 Eye Stress / Eyesight impairment</p> <p>3.3 Hearing outage</p> <p>3.4 Pain in the limb</p> <p>3.5 Hypertension / Blood pressure</p> <p>3.6 Obesity</p> <p>3.7 Carpal tunnel syndrome</p> <p>3.8 Thrombosis</p> <p>3.9 Repetitive strain injury</p> <p>3.10 Radiation</p>



	3.11 Interest addiction
4. Safety signs and tags	4.1 Direction signs 4.2 First aid signs 4.3 Danger tags 4.4 Hazard signs 4.5 Safety tags 4.6 Warning signs
5. Safe and hygiene work environment	5.1 Insulated Anti-Static mat for protecting from electric shock and accident 5.2 Comfortable seating arrangement of PC and computer screen 5.3 Adjustable healthy chair and table with proper height and angle 5.4 Proper ventilation and lighting system 5.5 Standard electrical fittings
6. Hazards	6.1 Ergonomic 6.2 Radiation 6.3 Heat and cold stress 6.4 Low or high intensity Light 6.5 Direct sun light 6.6 Noise
7. Emergency situations	7.1 Earth quake 7.2 Fires 7.3 Explosions
8. Workplace emergency procedures	8.1 Fire fighting 8.2 First aid 8.3 Emergency treatment 8.4 Evacuation
9. Preventive measures	9.1 Healthy settings of the Chair and Table 9.2 Time management during works 9.3 Avoiding internet and social media addiction 9.4 Providing work interval with computer screen and software 9.5 Ensuring availabilities of oxygen and light in the workplace
<b>Evidence Guide</b> 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 evidences that the candidate: 1.1 identified safety and health issues for IT workplace; 1.2 identified safety signs and symbols; 1.3 established safe and hygiene work environment; 1.4 identified hazards and risks and followed safe workplace

	<p>operating procedure;</p> <p>1.5 identified and reported emergency situations;</p> <p>1.6 taken preventive and correctives measures for maintaining safe conditions in the workplace; and</p> <p>1.7 prevented from social media and internet addiction.</p>
2. Underpinning knowledge	<p>2.1 Importance of maintaining OSH in IT workplace.</p> <p>2.2 Personal protective equipment requirements for IT related jobs.</p> <p>2.3 Type of IT workplace and Safe and hygiene work environment.</p> <p>2.4 Safety and Health issues for IT workplace:</p> <p>2.4.1 ergonomics impairment</p> <p>2.4.2 eye Stress / Eyesight impairment.</p> <p>2.4.3 hearing outage</p> <p>2.4.4 pain in the limb</p> <p>2.4.5 hypertension / blood pressure</p> <p>2.4.6 obesity</p> <p>2.4.7 carpal tunnel syndrome</p> <p>2.4.8 thrombosis</p> <p>2.4.9 repetitive strain injury</p> <p>2.4.10 radiation</p> <p>2.4.11 internet addiction.</p> <p>2.5 Health and hygiene precaution requirement in IT workplace.</p> <p>2.6 OSH policies and procedures for IT workplace.</p> <p>2.7 Types of incidents and risk in IT workplace.</p> <p>2.8 Emergency situations and Workplace emergency procedures.</p> <p>2.9 Safety sign and tags.</p> <p>2.10 Types of hazards.</p> <p>2.11 Reporting and recording procedure.</p> <p>2.12 Internet and social media addiction and its impact in health and safety.</p>
3. Underpinning skills	<p>3.1 Identifying safety and health issues in IT workplace.</p> <p>3.2 Applying personal health and safety practices for IT workplace.</p> <p>3.3 Identifying and reporting hazards and risks.</p> <p>3.4 Following and responding in emergency response procedures.</p> <p>3.5 Maintaining and improving health and safety in the IT workplace.</p> <p>3.6 Preventing from Social media and internet addiction.</p>

4. Required attitudes	<p>4.1 Commitment to occupational health and safety in workplace and personal life.</p> <p>4.2 Promptness in carrying out activities.</p> <p>4.3 Maintaining cleanliness and safe work environment.</p> <p>4.4 Sincere and honest to duties.</p> <p>4.5 Eagerness to learn.</p> <p>4.6 Tidiness and timeliness.</p> <p>4.7 Environmental concerns in workplace.</p> <p>4.8 Respect for rights of peers and seniors at workplace.</p> <p>4.9 Communication with peers and seniors at workplace.</p> <p>4.10 Following IT ethics and preventing from internet and social media addiction.</p>
5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 equipment and outfits appropriate in applying safety measures;</p> <p>5.3 tools, materials and documentation required; and</p> <p>5.4 relevant specifications or work instructions.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

**National Technical and Vocational Qualifications Framework for Bangladesh**  
**Unit of Competency**

<b>Unit Title</b>	<b>Apply Compliance and Ethics in IT Workplace</b>
<b>Unit Code</b>	<b>ICTSS2009A1</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to apply compliance and ethics in IT workplace. It includes prepare for applying compliance, protecting client interests, producing quality products and services, and demonstrating correct representation.
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> words are detailed in the Range of Variables
1. Prepare for applying compliance	1.1 Safe work practices are observed according to workplace procedures. 1.2 Occupational Safety and Health (OSH) hazards and incidents are reported to appropriate personnel according to workplace procedures. 1.3 Workplace code of conduct is followed.
2. Protect the interests of clients	2.1 Integrity and security of other information are demonstrated, as required by organizational <b><i>guidelines</i></b> , policies, <b><i>legislation and standards</i></b> . 2.2 Potential conflicts of interest are identified and relevant parties of potential conflicts are notified. 2.3 Confidentiality and proprietary rights of <b><i>client</i></b> interest are maintained. 2.4 <b><i>Indicators of personal ethical behavior</i></b> are demonstrated.
3. Produce quality products and services	3.1 Products and services are provided that match the operational and financial needs of clients. 3.2 Work is completed to industry and international <b><i>standards</i></b> . 3.3 Quality processes are implemented when developing products and services.

4. Demonstrate correct representation	<p>4.1 Skills, knowledge and qualifications are presented in a professional manner.</p> <p>4.2 Services and products developed by self and others are correctly acknowledged.</p> <p>4.3 Unbiased and objective information are provided to clients.</p> <p>4.4 Realistic estimates are demonstrated of time / money for work completed.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to):
1. Guidelines	<p>1.1 Legal, ethical and security issues</p> <p>1.2 Pre-requisites for membership</p> <p>1.3 Conflict of interest guidelines</p> <p>1.4 Customer service guidelines</p>
2. Legislation and standards	<p>2.1 Occupational Safety and Health (OSH)</p> <p>2.2 BSTI Legislation</p> <p>2.3 Industry codes of practice, such as the Bangladesh computer council Code of Ethics</p> <p>2.4 International Guidelines for Consumer Protection in E-commerce</p> <p>2.5 Access and equity</p> <p>2.6 Copyright laws</p> <p>2.7 Defamation laws</p> <p>2.8 Privacy legislation</p> <p>2.9 Intellectual property, confidentiality requirements</p> <p>2.10 Legal and regulatory policies affecting e-business</p>
3. Clients	<p>3.1 Internal departments</p> <p>3.2 External organizations</p> <p>3.3 Individual people</p> <p>3.4 Colleagues</p> <p>3.5 Employer and internal employees.</p>
4. Indicators of personal ethical behavior	<p>4.1 Must not allow dishonesty, personal prejudice or bias to influence conduct of employment.</p> <p>4.2 Should not accept gifts, benefits or hospitality if their nature and value may be seen as compromising objectivity and influencing in official capacity.</p> <p>4.3 Actions should be fair, honest, and truthful.</p> <p>4.4 Should avoid actual or perceived conflicts of interest.</p> <p>4.5 Should not condone the use of any statement that is misleading, false or deceptive.</p> <p>4.6 Should conduct self with care and skill, and ensure actions do not conflict with the requirements of integrity</p>

	<p>and objectivity.</p> <p>4.7 Should not use confidential or other information for personal advantage or for the advantage of another.</p>
5. Standards	<p>5.1 ISO standards</p> <p>5.2 IEC standards</p> <p>5.3 AS standards</p> <p>5.4 BSTI Standard</p> <p>5.5 Organizational standards</p> <p>5.6 Project standards (for further information refer to the Standards Australia website at: <a href="http://www.standards.com.au">www.standards.com.au</a>)</p>
<p><b>Evidence Guide</b></p> <p>The evidence must be authentic, valid, sufficient, reliable, consistent, recent and meet all requirements of current version of the Unit of Competency.</p>	
1. Critical aspects of competency	<p>Assessment required evidences that the candidate:</p> <p>1.1 confidentiality and property rights of clients are maintained;</p> <p>1.2 quality process is implemented when developing products and services; and</p> <p>1.3 realistic estimate is demonstrated of time / money for work completed.</p>
2. Underpinning Knowledge	<p>2.1 Computer Society Code of Ethics.</p> <p>2.2 Organizational requirements for customer service.</p> <p>2.3 Occupational Safety and Health (OSH) legislation.</p> <p>2.4 Copyright and intellectual property legislation and principles.</p> <p>2.5 Relevant privacy legislation and principles.</p> <p>2.6 Access and equity legislation and principles.</p>
3. Underpinning skills	<p>3.1 Application of standards and legislation to policy and procedure development and monitoring.</p> <p>3.2 Professional development skills in relation to identifying personal skills requiring.</p> <p>3.3 Upgrading and updating.</p> <p>3.4 Researching and identifying relevant courses, seminars or industry information to maintain currency.</p>
4. Required attitudes	<p>4.1 Commitment to occupational safety and health.</p> <p>4.2 Promptness in carrying out activities.</p> <p>4.3 Sincere and honest to duties.</p> <p>4.4 Environmental concern.</p> <p>4.5 Eagerness to learn.</p> <p>4.6 Tidiness and timeliness.</p> <p>4.7 Respect for rights of peers and seniors in workplace.</p> <p>4.8 Communicate with peers and seniors in workplace.</p>



5. Resource implications	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 relevant tools, software and facilities need to perform activities; and</p> <p>5.3 required learning materials.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completing of module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## **The Occupational Specific Competencies**



**National Technical and Vocational Qualifications Framework for Bangladesh**  
**Unit of Competency**

<b>Unit Title</b>	<b>Interpret Web Technology and Industry Requirement</b>
<b>Unit Code</b>	<b>ICTWEB4001A2</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to interpret web technology and industry requirement. It includes interpreting web technology, identifying career opportunities and performing requirement analysis for setting development environment
<b>Nominal Hours</b>	<b>15 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Interpret web technology	1.1 Web technology, web development is interpreted. 1.2 Front end and back end, full stack developer is stated. 1.3 UI/UX design layout is interpreted. 1.4 Roles of web developer is stated.
2. Identify career opportunities	2.1 Personal strengths and weaknesses are identified and analyzed. 2.2 Personal strengths and weaknesses are mapped according to purpose and objectives. 2.3 Trends of IT industry - its past, present and future are identified. 2.4 <b><i>Career opportunities</i></b> of a web developer are identified.
3. Perform requirement analysis for setting development environment	3.1 <b><i>IT infrastructure</i></b> and e-mail is ensured. 3.2 <b><i>Operating system</i></b> is selected. 3.3 <b><i>Version control software</i></b> is installed as required. 3.4 <b><i>Webserver tools and webserver</i></b> is installed. 3.5 <b><i>Browser</i></b> and <b><i>browser extension</i></b> are selected and <b><i>IDE</i></b> (Integrated Development Environment) is ensured. 3.6 <b><i>Task management tools</i></b> are selected and ensured as per job requirement

	<p>3.7 <b>Communication channel</b> are identified and used as per customer requirement.</p> <p>3.8 Test is performed to ensure all the setup is work effectively.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to:)
1. Career opportunities	1.1 Web developer 1.2 Web designer 1.3 Full stack web developer 1.4 Frontend developer 1.5 Backend developer
2. IT infrastructure	2.1 Workstation 2.2 Power 2.3 Data centre 2.4 Internet facilities
3. Operating system	3.1 Windows 3.2 Linux 3.3 Mac
4. Version control software	4.1 GIT 4.2 TFS 4.3 SVN
5. Webserver tools	5.1 XAMPP 5.2 WAMP 5.3 LAMP
6. Webserver	6.1 IIS 6.2 Apache 6.3 Tomcat
7. Browser	7.1 Google Chrome 7.2 EDGE 7.3 Firefox 7.4 Safari 7.5 Opera
8. Browser extension	8.1 Web developer (GC) 8.2 Json Formatter 8.3 MOZ 8.4 Wappalyzer

9. IDE	9.1 Visual Studio Code 9.2 Sublime text 9.3 Notepad 9.4 Eclipse
10. Task management tools	10.1 Jira 10.2 Trello 10.3 Asana
11. Communication channel	11.1 Skype 11.2 Slack
<b>Evidence Guide</b> 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 evidences that the candidate: 1.1 mapped personal strengths and weaknesses; 1.2 identified career opportunities; 1.3 installed version control software; 1.4 identified communication channel; and 1.5 performed test for all setup.
2. Underpinning knowledge	2.1 Get idea about web technology, web development. 2.2 Understanding about front end and back end, full stack developer. 2.3 UI/UX design layout interpreting process. 2.4 Roles of web developer. 2.5 Trends of IT enabled industries. 2.6 Career opportunities of a web developer. 2.7 Necessary IT infrastructure. 2.8 Relevant operating system. 2.9 Related browser and browser extension. 2.10 Essential integrated development environment. 2.11 Necessary communication channel.
3. Underpinning skills	3.1 Analyzing and mapping Personal strengths and weaknesses. 3.2 Identifying career opportunity. 3.3 Creating e-mail. 3.4 Installing version control software and webserver. 3.5 Performing test to ensure all the setup is work effectively. 3.6 Setting up work environment for work.

4. Required attitudes	4.1 Commitment to occupational safety and health. 4.2 Promptness in carrying out activities. 4.3 Sincere and honest to duties. 4.4 Eagerness to learn. 4.5 Tidiness and timeliness. 4.6 Environmental concerns. 4.7 Respect for rights of peers and seniors at workplace. 4.8 Communication with peers and seniors at workplace.
5. Resource implication	The following resources must be provided: 5.1 workplace (actual or simulated); 5.2 internet connectivity; and 5.3 relevant equipment and software.
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Contexts of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module. 7.2 Assessment should be done by a BTEB certified assessor.
<b>Accreditation Requirements</b> Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

**National Technical and Vocational Qualifications Framework for Bangladesh**  
**Unit of Competency**

<b>Unit Title</b>	<b>Convert UI / UX to Markup Language</b>
<b>Unit Code</b>	<b>ICTWEB4002A2</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to convert UI / UX to markup language. It includes planning a website, converting UI/UX to markup language and testing website.
<b>Nominal Hours</b>	<b>40 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Plan a website	1.1 Purpose and intended audience of the website are identified. 1.2 Design requirements and constraints of using provided templates are identified. 1.3 Required design is collected or selected.
2. Convert UI/UX to markup language	2.1 Given UI/ UX design template is converted into required <b><i>format</i></b> . 2.2 Website layout is developed as per job requirement. 2.3 File and folder are named properly and saved in a proper location. 2.4 Appropriate <b><i>markup language</i></b> is selected. 2.5 Web <b><i>content</i></b> is placed into the right position by using <b><i>markup language tags</i></b> . 2.6 Content is formatted properly by maintained standards and following <b><i>legislation</i></b> issues. 2.7 Hyperlinks are added to allow successful navigation between pages of website.
3. Test website	3.1 Website is tested to ensure functionality, correct any errors and log in according to testing procedures as per <b><i>plan</i></b> . 3.2 Website is opened in a variety of common browsers and check for <b><i>accessibility</i></b> , readability, legibility and presentation in accordance with client requirements.

	3.3 Website is evaluated for fitness purpose in terms of purpose, target audience and specifications of client requirements.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to:)
1.Format	1.1 Image 1.2 Text 1.3 Design specification
2.Markup language	2.1 HTML 2.2 XML
3.Contents	3.1 Graphic medias 3.2 Table 3.3 List 3.4 Form & button 3.5 Text formatting 3.6 Website content typography 3.7 Site map 3.8 Hyperlink titles
4.Markup language tags	4.1 P 4.2 Div 4.3 Heading 4.4 Image and video tags 4.5 Table 4.6 List 4.7 Form & button 4.8 Anchor tag 4.9 Meta
5.Legislation	5.1 Copyright Act 5.2 National Cyber Policy 5.3 Intellectual Property Rights law 5.4 Subsequent amendments
6.Plan	6.1 Plan Includes requirements, purpose, specifications and/or features to develop an interactive and responsive web site which may be modified during any new creation or changes. Depending on assessment context, plan may include: 6.1.1 key milestone outcomes 6.1.2 how resources such as time, expertise and materials (and finance, if appropriate) will be used

	to achieve outcomes of each milestone. 6.2 How consultation with stakeholders will be carried out to ensure that all constraints and requirements are met.
7. Accessibility	7.1 Cultural awareness 7.2 Physical impairments 7.3 Remote locations
<b>Evidence Guide</b> 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 evidences that the candidate: 1.1 converted UI/ UX design template; 1.2 selected markup language; 1.3 placed web content into the right position; 1.4 added hyperlink; and 1.5 checked completed website for accuracy using common browsers.
2. Underpinning knowledge	2.1 Knowledge on analytical methodologies, techniques and procedures 2.1.1 design requirements and constraints. 2.2 Website design standards and conventions recommended from W3C ( <a href="http://www.w3c.org">www.w3c.org</a> ). 2.3 Knowledge on well-structured and well-formed markup language structures according to W3C markup language coding guidelines and conventions. 2.4 Syntax and variations of using markup language element tags and attributes. 2.5 Converting template into any required format. 2.6 Adding template slices and texts to website. 2.7 Formatting website in accordance with specifications of the brief. 2.8 Use of different formats of website code files. 2.9 Required components and dependencies of running a website successfully. 2.10 Importance and structures of developing site map of website. 2.11 Procedures to test website according to testing procedures.

3. Underpinning skills	3.1 Identifying purpose and intended audience of website. 3.2 Converting UI/ UX design template. 3.3 Applying techniques to place web content into the right position. 3.4 Adding hyperlink for successful navigation. 3.5 Carrying out website test.
4. Required attitudes	4.1 Commitment to occupational safety and health. 4.2 Promptness in carrying out activities. 4.3 Sincere and honest to duties. 4.4 Eagerness to learn. 4.5 Tidiness and timeliness. 4.6 Environmental concerns. 4.7 Respect for rights of peers and seniors at workplace. 4.8 Communication with peers and seniors at workplace.
5. Resource implication	The following resources must be provided: 5.1 workplace (actual or simulated); 5.2 internet connectivity; and 5.3 relevant equipment and software.
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Contexts of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module. 7.2 Assessment should be done by a BTEB certified assessor.
<b>Accreditation Requirements</b> Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	



## National Technical and Vocational Qualifications Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Develop Responsive Website Using Framework</b>
<b>Unit Code</b>	<b>ICTWEB4003A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to develop responsive website using framework. It includes determining purpose and accessibility, setting styles and creating CSS using framework.
<b>Nominal Hours</b>	<b>60 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the Range of Variables
1. Determine purpose and accessibility	1.1 Purpose of markup language document is identified. 1.2 <b><i>Accessibility</i></b> options are identified and determine for visually, physically or otherwise impaired persons.
2. Set styles	2.1 CSS (Cascading Style Sheets) to markup language documents is linked and verified. 2.2 Appropriate styles that are to be controlled by CSS are identified as per responsive design. 2.3 Styles are defined and documented in accordance with established design principles.
3. Create CSS using framework	3.1 <b><i>Frontend framework</i></b> is identified. 3.2 CSS is created using determined styles by maintain standards and be aware of <b><i>legislation</i></b> . 3.3 CSS is edited as per client requirement. 3.4 Changes are confirmed in linked markup language document. 3.5 CSS is tested / validated according to established design principles required <b><i>website or browsers</i></b> .
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)

1. Accessibility	1.1 Cultural awareness 1.2 Physical impairments 1.3 Remote locations
2. Frontend framework	2.1 Bootstrap 2.2 Foundation zurb
3. Legislation	3.1 Copyright Act 3.2 National Cyber Policy 3.3 Intellectual Property Rights law 3.4 Their subsequent amendments
4. Website or browsers	4.1 <a href="https://jigsaw.w3.org/css-validator">https://jigsaw.w3.org/css-validator</a> 4.2 Browsers <ul style="list-style-type: none"> <li>4.2.1 Google Chrome</li> <li>4.2.2 EDGEMozilla Firefox</li> <li>4.2.3 Opera</li> <li>4.2.4 Safari</li> </ul>
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: <ul style="list-style-type: none"> <li>1.1 linked and verified CSS to markup language documents;</li> <li>1.2 identified frontend framework;</li> <li>1.3 creating CSS using determined styles; and</li> <li>1.4 validated CSS.</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 Website design standards and conventions recommended from W3C (<a href="http://www.w3c.org">www.w3c.org</a>).</li> <li>2.2 Knowledge on well-structured and well-formed CSS structures according to W3C CSS coding guidelines and conventions.</li> <li>2.3 Types of fronted framework.</li> <li>2.4 Syntax and variations of using CSS element tags and attributes.</li> <li>2.5 Attaching CSS to markup language documents.</li> <li>2.6 Use of CSS in different ways (as inline, embedded or external file).</li> <li>2.7 Testing and validating procedures using relevant website or browsers.</li> </ul>

3. Underpinning skill	<p>3.1 Applying techniques for linking and verifying CSS to markup language documents.</p> <p>3.2 Identified appropriate styles that are to be controlled by CSS.</p> <p>3.3 Identifying frontend framework.</p> <p>3.4 Creating CSS using determine style.</p> <p>3.5 Editing and changing CSS.</p> <p>3.6 Testing / validating CSS.</p>
4. Required attitudes	<p>4.1 Commitment to occupational safety and health.</p> <p>4.2 Promptness in carrying out activities.</p> <p>4.3 Sincere and honest to duties.</p> <p>4.4 Environmental concerns.</p> <p>4.5 Eagerness to learn.</p> <p>4.6 Tidiness and timeliness.</p> <p>4.7 Respect for rights of peers and seniors at workplace.</p> <p>4.8 Communication with peers and seniors at workplace.</p>
5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 internet connectivity; and</p> <p>5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

**National Technical and Vocational Qualification Framework for Bangladesh**  
**Unit of Competency**

<b>Unit Title</b>	<b>Develop Website Using Client Side Scripting Language</b>
<b>Unit Code</b>	<b>ICTWEB4004A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to develop website using client side scripting language. It includes planning feature, applying JavaScript, applying jQuery and performing website test.
<b>Nominal Hours</b>	<b>70 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan features	1.1 Purpose and intended audience of the website are identified. 1.2 Design requirements and constraints are identified. 1.3 Conceptual idea is developed. 1.4 Necessary software is installed and checked for functionality .
2. Apply JavaScript	2.1 JavaScript elements are added, and attributes are assigned to meet client requirements 2.2 Interactivity is added, edited and formatted to the website in accordance with client requirements. 2.3 Markup content is rendered via JavaScript. 2.4 JavaScript variable, conditions, loop and functions are stated.
3. Apply jQuery	3.1 <b><i>jQuery built- in functions</i></b> are interpreted. 3.2 jQuery is added and attributes are assigned to meet client requirements. 3.3 Interactivity is added, edited and formatted to the website in accordance with client requirements. 3.4 Content is added in every page, if required, in accordance with client requirements. 3.5 <b><i>jQuery plug in</i></b> is installed and used as per plug in configuration.

4. Perform website test	<p>4.1 Website is tested according to the <b>testing criteria</b>.</p> <p>4.2 Website is opened in a variety of common <b>browsers</b></p> <p>4.3 Accessibility, readability, legibility and appearance are checked in accordance with client requirements.</p> <p>4.4 Website is evaluated for <b>suitability</b> as per client requirement.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)
1. jQuery built- in functions	<p>1.1 Hide</p> <p>1.2 Show</p> <p>1.3 Remove</p> <p>1.4 Slide up</p> <p>1.5 Slide down</p> <p>1.6 Fade in</p> <p>1.7 Fade out</p> <p>1.8 Add class</p> <p>1.9 Remove class</p> <p>1.10 Animate</p>
2. jQuery plug in	<p>2.1 Slick slider</p> <p>2.2 Light box</p> <p>2.3 Filter</p> <p>2.4 Cycle slider</p> <p>2.5 wow.js</p> <p>2.6 <a href="#">motion-ui</a></p> <p>2.7 Bootstrap component jQuery or relevant</p> <p>2.8 Chart.js</p>
3. Testing criteria	<p>3.1 Compatibility</p> <p>3.2 Functionality</p> <p>3.3 Any errors</p> <p>3.4 Log in</p>
4. Browsers	<p>4.1 Google Chrome</p> <p>4.2 EDGE</p> <p>4.3 Opera</p> <p>4.4 Safari</p>
5. Suitability	<p>5.1 Purpose</p> <p>5.2 Target audience</p> <p>5.3 Specifications</p>

**Evidence Guide**

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

1. Critical aspects of competency	<p>Assessment required evidences that the candidate:</p> <ol style="list-style-type: none"> <li>1.1 developed a conceptual idea;</li> <li>1.2 added and assigned JavaScript element and attributes;</li> <li>1.3 rendered markup content;</li> <li>1.4 interpreted jQuery built-in function;</li> <li>1.5 installed and used jQuery plug-in; and</li> <li>1.6 tested the project.</li> </ol>
2. Underpinning knowledge	<ol style="list-style-type: none"> <li>2.1 Website design standards and conventions recommended from W3C (<a href="http://www.w3c.org">www.w3c.org</a>).</li> <li>2.2 Knowledge on well-structured and well-formed JavaScript and jQuery structures according to W3C coding guidelines and conventions.</li> <li>2.3 Syntax and variations of using JavaScript element tags and attributes.</li> <li>2.4 Procedure for adding text and graphics to website.</li> <li>2.5 Process for formatting website.</li> <li>2.6 Common tool to develop JavaScript codes</li> <li>2.7 Functions of jQuery built- in.</li> <li>2.8 Process to use jQuery plug in.</li> <li>2.9 Use of different formats of website code files.</li> <li>2.10 Structures of developing site map of website.</li> <li>2.11 Procedures to test website.</li> </ol>
3. Underpinning skill	<ol style="list-style-type: none"> <li>3.1 Identifying design requirement.</li> <li>3.2 Developing conceptual idea.</li> <li>3.3 Adding jQuery and JavaScript element.</li> <li>3.4 Assigning attributes.</li> <li>3.5 Applying techniques of rendering markup content.</li> <li>3.6 Listing JavaScript variable, conditions, loop and functions.</li> <li>3.7 Installing and using jQuery plug in.</li> <li>3.8 Performing website test.</li> </ol>
4. Required attitudes	<ol style="list-style-type: none"> <li>4.1 Commitment to occupational safety and health.</li> <li>4.2 Promptness in carrying out activities.</li> <li>4.3 Sincere and honest to duties.</li> <li>4.4 Environmental concerns.</li> <li>4.5 Eagerness to learn.</li> <li>4.6 Tidiness and timeliness.</li> <li>4.7 Respect for rights of peers and seniors at workplace.</li> <li>4.8 Communication with peers and seniors at workplace.</li> </ol>



5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 internet connectivity; and</p> <p>5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Develop Dynamic Website Using CMS</b>
<b>Unit Code</b>	<b>ICTWEB4005A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to develop dynamic website using CMS. It includes planning CMS project, developing CMS project and performing test.
<b>Nominal Hours</b>	<b>70 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan CMS project	1.1 Purpose and intended audience of website are identified. 1.2 Design requirements and constraints are identified. 1.3 A conceptual <b><i>design</i></b> is developed. 1.4 Necessary software is installed and checked as per requirement.
2. Develop CMS project	2.1 <b><i>CMS (Content Management System)</i></b> is selected and installed. 2.2 Project structure is prepared as per CMS guideline. 2.3 Structure, element tags, necessary files are added to meet client requirements. 2.4 Attributes are assigned according to client requirements. 2.5 Content are added to site also formatted in accordance with client requirements and be aware of <b><i>legislation</i></b> . 2.6 CMS plugin is installed and configured as per requirement.
3. Perform test	3.1 Website is tested according to the <b><i>testing criteria</i></b> . 3.2 Website is opened in a variety of common <b><i>browsers</i></b> 3.3 Accessibility, readability, legibility and appearance are checked in accordance with client requirements. 3.4 Website is evaluated for <b><i>suitability</i></b> as per client requirement.



<b>Range of Variables</b>	
<b>Variable</b>	<b>Range (May include but not limited to)</b>
1. Design	1.1 .psd 1.2 inDesign 1.3 image
2. CMS	2.1 WordPress 2.2 Joomla! 2.3 Drupal 2.4 DotNetNuke 2.5 SiteCore
3. Standards	3.1 World Wide Web ( <a href="http://www.w3c.org">www.w3c.org</a> ) standards 3.2 Any design or business guidelines given by the owner of website. 3.3 Each CMS has its own rule to develop theme, ensure these rules are applied while developing a theme for CMS.
4. Legislation	4.1 Copyright Act 4.2 National Cyber Policy 4.3 Intellectual Property Rights law 4.4 GNU CMS rules 4.5 Subsequent amendments
5. Testing criteria	5.1 Compatibility 5.2 Functionality 5.3 Any errors 5.4 Log in
6. Browsers	6.1 Google Chrome 6.2 EDGE 6.3 Opera 6.4 Safari
7. Suitability	7.1 Purpose 7.2 Target audience 7.3 Specifications
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	

1. Critical aspects of competency	<p>Assessment required evidences that the candidate:</p> <p>1.1 prepared project structure as per requirement;  1.2 added content to site; and  1.3 checked completed project for accuracy using common browsers.</p>
2. Underpinning knowledge	<p>2.1 Relevant design requirements and constraints.  2.2 Knowledge to develop project for CMS (Content Management System).  2.3 Knowledge to configure Content Management System (CMS) and file transfer protocol client.  2.4 Use content management system application.  2.5 CMS guideline.  2.6 Procedures to test website.</p>
3. Underpinning skill	<p>3.1 Developing conceptual design.  3.2 Installing CMS.  3.3 Preparing project structure.  3.4 Configuring content management system and file transfer protocol client.  3.5 Applying techniques for adding and formatting content.  3.6 Performing website test.</p>
4. Required attitudes	<p>4.1 Commitment to occupational safety and health.  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 at workplace.  4.8 Communication with peers and seniors at workplace.</p>
5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);  5.2 internet connectivity; and  5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;  6.2 demonstration;  6.3 oral questioning; and  6.4 portfolio.</p>

7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Deploy Website</b>
<b>Unit Code</b>	<b>ICTWEB4006A2</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to deploy website. It includes analyzing requirements for hosting server, configuring server and repository, performing speed optimization and performing test.
<b>Nominal Hours</b>	<b>15 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Analyze requirements for hosting server	1.1 Business, technical and security requirements of server are identified. 1.2 Version control is identified and verified.
2. Configure server and repository	2.1 Hosting space size, bandwidth and back-up options are selected in accordance with project requirements. 2.2 Appropriate web application server is chosen. 2.3 <b><i>Security options</i></b> are chosen in accordance with client requirements. 2.4 Name server is assigned properly with the domain name. 2.5 Virtual website or folder is created and mapped with domain. 2.6 The entire site is deployed into virtual folder. 2.7 Local work pushed to <b><i>repository</i></b> .
3. Perform speed optimization	3.1 Test web speed using site <b><i>testing tools</i></b> and prepare plan according to the report. 3.2 HTTP (Hypertext Transfer Protocol) requests is minimized. 3.3 Files are minified and combined. 3.4 Asynchronous loading is used for CSS (Cascading Style Sheets) and JavaScript files. 3.5 JavaScript loading is deferred. 3.6 Server response time is reduced. 3.7 Right hosting option is selected as per project requirement.

4. Perform test	4.1 Website testing is performed at live. 4.2 Website is tested according to the testing criteria. 4.3 Website is opened in a variety of common browsers 4.4 Accessibility, readability, legibility and appearance are checked in accordance with client requirements. 4.5 Website is evaluated for suitability as per client requirement
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)
1. Testing tools	1.1 GTmetrix 1.2 Google page speed insights 1.3 PINGDom tools
2. Security options	2.1 SSL 2.2 Trust client 2.3 AV filtering
3. Repository	3.1 Git 3.2 TFS 3.3 SVN
<b>Evidence Guide</b>	
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 evidences that the candidate: 1.1 tested website speed; 1.2 assigned name server properly; 1.3 pushed local work to repository; and 1.4 performing website test at live.
2. Underpinning knowledge	2.1 Business, technical and security requirements of hosting server. 2.2 Procedure to configure hosting server. 2.3 Usages of testing tools. 2.4 Technique to create virtual folder in hosting server. 2.5 Process of configuring file transfer protocol client. 2.6 Process of planning and preparing data for transfer. 2.7 Process to establish connection to hosting server. 2.8 Relevant security options. 2.9 Require repository.
3. Underpinning skill	3.1 Testing website speed. 3.2 Applying techniques of minifying and combining files. 3.3 Loading asynchronous using CSS and JavaScript. 3.4 Reducing server response time.

	3.5 Deferring JavaScript loading. 3.6 Choosing security options. 3.7 Creating and mapping virtual website or folder. 3.8 Pushing local work to repository. 3.9 Configuring file transfer protocol client. 3.10 Planning and preparing data for transfer. 3.11 Establishing connection to hosting server. 3.12 Transferring content to hosting server. 3.13 Performing website test.
4. Required attitudes	4.1 Commitment to occupational safety and health. 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 at workplace. 4.8 Communication with peers and seniors at workplace.
5. Resource implication	The following resources must be provided: 5.1 workplace (actual or simulated); 5.2 internet connectivity; and 5.3 relevant equipment and software.
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module. 7.2 Assessment should be done by a BTEB certified assessor.
<b>Accreditation Requirements</b> Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

**National Technical and Vocational Qualification Framework for Bangladesh  
Unit of Competency**

<b>Unit Title</b>	<b>Develop Website Using Client Side Scripting Language Framework</b>
<b>Unit Code</b>	<b>ICTWEB5007A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to develop website using client side scripting language framework. It includes planning dynamic features, developing web application using framework and perform test.
<b>Nominal Hours</b>	<b>80 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <i><b>Bold &amp; Italicized</b></i> terms are elaborated in the range of variables
1. Plan dynamic features	1.1 <i><b>Run time environment</b></i> is installed and configured. 1.2 Purpose and intended audience of website are identified. 1.3 Design requirements and constraints are identified. 1.4 A conceptual idea is developed. 1.5 Necessary software installed and checked according to requirement.
2. Develop web application using framework	2.1 <i><b>Framework</b></i> is selected and installed. 2.2 Project structure is prepared as per framework guideline. 2.3 Structure, element tags, necessary files are added to meet client requirements 2.4 Attributes are assigned according to client requirements 2.5 Content are added to site as per requirement. 2.6 Content are formatted in accordance with client requirements following legislation issues.
3. Perform test	3.1 Project is tested according to testing criteria. 3.2 Project is opened in a variety of common browsers 3.3 Accessibility, readability, legibility and appearance are checked in accordance with client requirements. 3.4 Project is evaluated for suitability as per client requirement



<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)
1. Run time environment	1.1 Node.js 1.2 Express.js
2. Framework	2.1 AngularJS 2.2 React
<b>Evidence Guide</b>	
The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 installed and configured run time environment; 1.2 prepared project structure; 1.3 added structure, element tags, necessary files; 1.4 added and formatted content; and 1.5 performed test.
2. Underpinning knowledge	2.1 Website design standards and conventions recommended from W3C ( <a href="http://www.w3c.org">www.w3c.org</a> ). 2.2 Run time environment installation and configuration process. 2.3 Relevant framework. 2.4 Website development procedure using framework. 2.5 Website testing process.
3. Underpinning skill	3.1 Identifying design requirements and constraint. 3.2 Installing framework. 3.3 Preparing project structure. 3.4 Applying techniques of adding structure, element tags, necessary files. 3.5 Adding and formatting content to site. 3.6 Evaluating project fitness.
4. Required attitudes	4.1 Commitment to occupational safety and health. 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 at workplace. 4.8 Communication with peers and seniors at workplace.



5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 internet connectivity; and</p> <p>5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Develop Theme and Plugin for CMS</b>
<b>Unit Code</b>	<b>ICTWEB5008A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to develop theme and plugin for CMS. It includes plan to develop a CMS theme and plugin; develop theme, plugin and performing test.
<b>Nominal Hours</b>	<b>60 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan to develop CMS theme and plugin	1.1 Purpose and intended audience of website are identified. 1.2 Design requirements and constraints are identified. 1.3 A conceptual design is developed. 1.4 Necessary <b>software</b> installed and checks other requirement.
2. Develop theme	2.1 <b>Design</b> to ML document is converted. 2.2 Structure, element tags, necessary files are added as per client requirement 2.3 Attributes are assigned to meet client requirements following web and <b>CMS standards</b> . 2.4 <b>Content</b> are added to the site as per requirement. 2.5 Content is formatted in accordance with client requirements following <b>legislation</b> issues.
3. Develop plugin	3.1 Design to ML document is converted. 3.2 Structure, element tags, necessary files are added as per client requirement 3.3 Attributes are assigned to meet client requirements follow the web and CMS standards. 3.4 Content are added to the site as per requirement. 3.5 Content is formatted in accordance with client requirements following legislation issues.

4. Perform test	<p>4.1 Theme and plugin is tested according to the <b>testing criteria</b>.</p> <p>4.2 Theme and plugin is opened in a variety of common <b>browsers</b></p> <p>4.3 Accessibility, readability, legibility and appearance are checked in accordance with client requirements.</p> <p>4.4 Theme and plugin is evaluated for <b>suitability</b> as per client requirement.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range (May include but not limited to)</b>
1. Software	<p>1.1 Operating system</p> <p>1.2 Application server</p> <p>1.3 Anti-virus software</p> <p>1.4 FTP client software</p> <p>1.5 CMS packages</p> <p>1.6 Plug-ins packages</p>
2. Design	<p>2.1 .psd</p> <p>2.2 inDesign</p> <p>2.3 image</p>
3. CMS standards	<p>3.1 For this unit standard candidates will have to follow World Wide Web (<a href="http://www.w3c.org">www.w3c.org</a>) standards as well as any design or business guidelines given by the owner of website.</p> <p>3.2 Each CMS has its own rule to develop theme, ensure these rules are applied while developing a theme for CMS.</p>
4. Contents	<p>4.1 Graphic medias</p> <p>4.2 Table</p> <p>4.3 List</p> <p>4.4 Form &amp; button</p> <p>4.5 Text formatting</p> <p>4.6 Website content typography</p> <p>4.7 Site map</p> <p>4.8 Hyperlink titles</p>
5. Legislation	<p>5.1 Copyright Act 2005</p> <p>5.2 National Cyber Policy</p> <p>5.3 Intellectual Property Rights law</p> <p>5.4 GNU CMS rules</p>

6. Testing criteria	6.1 Compatibility 6.2 Functionality 6.3 Correction of any errors 6.4 log in
7. Browsers	7.1 Google Chrome 7.2 EDGE 7.3 Opera 7.4 Safari
8. Suitability	8.1 Purpose 8.2 Target audience 8.3 Specifications
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 converted design to ML for developing theme and plugin; 1.2 assigned attributes as per CMS standard for developing theme and plugin; 1.3 formatted content as per client requirement; and 1.4 tested theme and plugin.
2. Underpinning knowledge	2.1 Knowledge to configure Content Management System (CMS) and file transfer protocol client. 2.2 Relevant software. 2.3 Require design. 2.4 Procedure of developing theme and plugin. 2.5 Procedure of testing theme and plugin.
3. Underpinning skill	3.1 Installing software for CMS theme and plugin. 3.2 Applying techniques of developing theme for CMS. 3.3 Applying techniques of developing plugin for CMS. 3.4 Performing theme and plugin test.
4. Required attitudes	4.1 Commitment to occupational safety and health. 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 at workplace. 4.8 Communication with peers and seniors at workplace.

5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated)</p> <p>5.2 internet connectivity; and</p> <p>5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Implement Web Security</b>
<b>Unit Code</b>	<b>ICTWEB5009A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to implement website security. It includes planning security requirement, implementing security measure and monitoring, reporting and fixing security threat.
<b>Nominal Hours</b>	<b>40 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan security requirements	1.1 Common and specific <b><i>security threats</i></b> are identified as per Open Web Application Security Project (OWASP). 1.2 Security measure to be added to a website are identified. 1.3 Security model is developed to meet standard requirements.
2. Implement security measure	2.1 Developed security model is implemented. 2.2 Database security is ensured as per model requirement. 2.3 Web security is ensured as per model requirement. 2.4 Hosting server is configured to ensure security of hosting server.
3. Monitor, report and fix security threat	3.1 Security logs are checked, and performance is monitored. 3.2 Security status is reported as per standard. 3.3 Based on security report solution is implemented.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)
1. Security threats	1.1 Injection 1.2 Broken authentication 1.3 Sensitive data exposure 1.4 XML External Entities (XXE)

	1.5 Broken access control 1.6 Security misconfigurations 1.7 Cross Site Scripting (XSS) 1.8 Insecure deserialization 1.9 Using components with known vulnerabilities 1.10 Insufficient logging and monitoring
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 identified common and specific security threats; 1.2 identified website, security measure to be added; 1.3 implemented developed security model; 1.4 configured hosting server; and 1.5 checked security logs.
2. Underpinning knowledge	2.1 Procedure of security breach. 2.2 Cause of security threats. 2.3 Impact of security threats. 2.4 Relevant solution of security threats. 2.5 Procedure of developing security measure. 2.6 Process of ensuring database security. 2.7 Checking procedure of security logs.
3. Underpinning skill	3.1 Developing website security model. 3.2 Implementing security model. 3.3 Applying website security model to website. 3.4 Formatting website in accordance with the client requirements. 3.5 Configuring hosting server. 3.6 Creating site map of website. 3.7 Checking security logs. 3.8 Implementing solution based on security report.
4. Required attitudes	4.1 Commitment to occupational safety and health. 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 at workplace. 4.8 Communication with peers and seniors at workplace.

5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 internet connectivity; and</p> <p>5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	



**National Technical and Vocational Qualification Framework for Bangladesh**  
**Unit of Competency**

<b>Unit Title</b>	<b>Perform Web Analytics</b>
<b>Unit Code</b>	<b>ICTWEB5010A2</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to perform web analytics. It includes planning SEO model, applying SEO, performing content optimization, selecting web traffic monitoring tools and monitoring and reporting web traffic.
<b>Nominal Hours</b>	<b>25 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan SEO model	1.1 Purpose and intended uses of website are identified. 1.2 The common search engines are analyzed, and search patterns are identified. 1.3 SEO best practices are identified. 1.4 Target domain and verticals are identified. 1.5 SEO model is developed to meet client requirements.
2. Apply SEO techniques to website	2.1 SEO techniques are listed to maintaining standards meet client requirement. 2.2 SEO <b><i>techniques</i></b> are applied. 2.3 Analytical engine user is created and be aware of legislation.
3. Perform content optimization	3.1 Meta title, meta description and keywords are identified and optimized. 3.2 SEO-Friendly URL is identified and optimized. 3.3 <b><i>Heading tags</i></b> are identified and optimized. 3.4 Page content is optimized. 3.5 <b><i>Image SEO</i></b> is performed. 3.6 Anchor text is identified. 3.7 Internal and external links are identified and optimized.

4. Select web traffic monitoring tools	<p>4.1 Selected site analytic software is installed according to vendor requirements.</p> <p>4.2 The required report options are identified with reference to organizational requirements and website architecture.</p> <p>4.3 A traffic-monitoring plan is developed.</p> <p>4.4 Necessary software installed and check <b>all requirement</b>.</p>
5. Monitor and report web traffic	<p>5.1 <b>Traffic monitoring tool</b> is configured.</p> <p>5.2 Required traffic reports are specified according to information requirements.</p> <p>5.3 Reports are analyzed to identify improvements to server/site performance.</p> <p>5.4 Forecasting methodologies are applied to predict traffic peaks.</p>
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)
1. Technique	<p>1.1 Standards typography</p> <p>1.2 Robot.txt accessibility</p> <p>1.3 Sitemap</p> <p>1.4 Breadcrumb</p>
2. Heading Tags	<p>2.1 H1</p> <p>2.2 H2</p> <p>2.3 H3</p> <p>2.4 H4</p> <p>2.5 H5</p> <p>2.6 H6</p>
3. Image SEO	<p>3.1 Image Alt attribute</p> <p>3.2 Image file name</p> <p>3.3 Image description</p> <p>3.4 Image title</p> <p>3.5 Image size</p> <p>3.6 Image format</p> <p>3.7 EXIF data</p>
4. All requirements	<p>4.1 Fair speed internet connectivity</p> <p>4.2 Google account</p>
5. Traffic monitoring tool	<p>5.1 Uptime robot</p> <p>5.2 Data doc</p> <p>5.3 Site24X7</p>

**Evidence Guide**

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

1. Critical aspects of competency	<p>Assessment required evidences that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 applied SEO techniques;</li> <li>1.2 identified and optimized heading tags;</li> <li>1.3 performed image SEO;</li> <li>1.4 developed traffic-monitoring plan; and</li> <li>1.5 configured traffic monitoring tool.</li> </ul>
2. Underpinning knowledge	<ul style="list-style-type: none"> <li>2.1 List of SEO techniques and its application process.</li> <li>2.2 Require heading tags.</li> <li>2.3 Listing image SEO.</li> <li>2.4 Require software.</li> <li>2.5 Require traffic monitoring tools.</li> <li>2.6 Forecasting procedure and methodology.</li> <li>2.7 Procedure of content optimization.</li> </ul>
3. Underpinning skill	<ul style="list-style-type: none"> <li>3.1 Identifying target domain and verticals.</li> <li>3.2 Applying SEO techniques.</li> <li>3.3 Optimizing meta title and meta description, SEO-Friendly URL.</li> <li>3.4 Performing image SEO.</li> <li>3.5 Optimizing internal and external link.</li> <li>3.6 Installing site analytic software.</li> <li>3.7 Developing traffic-monitoring plan.</li> <li>3.8 Configuring traffic monitoring tools.</li> </ul>
4. Required attitudes	<ul style="list-style-type: none"> <li>4.1 Commitment to occupational safety and health.</li> <li>4.2 Promptness in carrying out activities.</li> <li>4.3 Sincere and honest to duties.</li> <li>4.4 Environmental concerns.</li> <li>4.5 Eagerness to learn.</li> <li>4.6 Tidiness and timeliness.</li> <li>4.7 Respect for rights of peers and seniors at workplace.</li> <li>4.8 Communication with peers and seniors at workplace.</li> </ul>
5. Resource implication	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> <li>5.1 workplace (actual or simulated);</li> <li>5.2 internet connectivity; and</li> <li>5.3 relevant equipment and software.</li> </ul>

6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Maintain Website</b>
<b>Unit Code</b>	<b>ICTWEB5011A1</b>
<b>Unit Descriptor</b>	This unit covers knowledge; skills and attitudes required to maintain website. It includes performing troubleshooting's and administrating work.
<b>Nominal Hours</b>	<b>15 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Perform troubleshooting's	1.1 Maintenance related <b><i>security issues</i></b> are identified and listed. 1.2 Test is performed to make sure that site is work correctly. 1.3 <b><i>Technical troubleshooting</i></b> is carried out to pinpoint the root of the problem. 1.4 Site re-design is conducted as per organization requirement.
2. Perform administrative work	2.1 Site maintenance is performed as per schedule. 2.2 Site security is confirmed. 2.3 Liaising with <b><i>other</i></b> is ensured for appropriate product selection and performance. 2.4 Content strategy and updates is maintained. 2.5 Work with content creators for optimized site. 2.6 Site is promoted through various advertising channel.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b>
1. Security issues	1.1 Injection 1.2 Broken authentication 1.3 Sensitive data exposure 1.4 XML External Entities (XXE) 1.5 Broken access control 1.6 Security misconfigurations 1.7 Cross Site Scripting (XSS)

	1.8 Insecure deserialization 1.9 Using components with known vulnerabilities 1.10 Insufficient logging and monitoring 1.11 Version update
2. Other	2.1 Another department 2.2 Vendor
3. Technical troubleshooting	3.1 Version check 3.2 Latency check 3.3 User acceptance test 3.4 Down time minimize
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 carried out technical troubleshooting; 1.2 conducting site re-design; 1.3 performed site maintenance; and 1.4 maintained content strategy and updates.
2. Underpinning knowledge	2.1 Maintenance related security issues. 2.2 Procedures of technical troubleshooting. 2.3 Site-redesign process. 2.4 Procedures of confirming site security. 2.5 Optimizing procedure of site. 2.6 Promoting process of site.
3. Underpinning skill	3.1 Performing site test. 3.2 Carrying out technical troubleshooting. 3.3 Performing site maintenance. 3.4 Maintaining liaising with other. 3.5 Optimizing site. 3.6 Promoting site.
4. Required attitudes	4.1 Commitment to occupational safety and health. 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 at workplace. 4.8 Communication with peers and seniors at workplace.

5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);</p> <p>5.2 internet connectivity; and</p> <p>5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;</p> <p>6.2 demonstration;</p> <p>6.3 oral questioning; and</p> <p>6.4 portfolio.</p>
7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Develop Dynamic Website Using Framework</b>
<b>Unit Code</b>	<b>ICTWEB6012A1</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to develop dynamic website using framework. It includes planning project, developing web application using framework and performing test.
<b>Nominal Hours</b>	<b>80 hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan project	1.1 Purpose and intended audience of project are identified. 1.2 Design requirements and constraints are identified. 1.3 A conceptual design is developed. 1.4 Necessary software installed and check all requirement.
2. Develop web application using framework	2.1 <b><i>Framework</i></b> is selected and installed as per project plan. 2.2 Project structure is prepared as per framework guideline. 2.3 <b><i>Content</i></b> are added to site 2.4 Content is formatted in accordance with client requirements following <b><i>legislation</i></b> issues.
3. Perform test	3.1 Website is tested according to the testing criteria. 3.2 Website is opened in a variety of common browsers 3.3 Accessibility, readability, legibility and appearance are checked in accordance with client requirements. 3.4 Website is evaluated for suitability as per client requirement
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)



1. Framework	1.1 Laravel 1.2 CakePHP 1.3 Django 1.4 DotNetCore / ASPNetCore
2. Contents	2.1 Product information 2.2 Company information 2.3 Copyright and disclaimer notices 2.4 Site map 2.5 Frequently asked questions 2.6 Customer information 2.7 Instructions 2.8 Feedback mechanisms 2.9 Reference pages 2.10 Ratings/rankings/testimonials/quotes from reviews
3. Legislation	3.1 Copyright Act 3.2 National Cyber Policy 3.3 Intellectual Property Rights law 3.4 GNU CMS rules 3.5 Subsequent amendments
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 installed framework; 1.2 prepared project structure as per requirement; and 1.3 checked compatibility of project.
2. Underpinning knowledge	2.1 Require design requirements and constraints. 2.2 Required components and dependencies of running a website. 2.3 Installation procedure of framework. 2.4 Procedure of adding and formatting content. 2.5 Process of testing, evaluating project.
3. Underpinning skill	3.1 Identifying design requirements and constraint. 3.2 Installing framework. 3.3 Preparing project structure. 3.4 Applying techniques of adding structure, element tags, necessary files. 3.5 Adding and formatting content to site. 3.6 Evaluating project fitness.

4. Required attitudes	4.1 Commitment to occupational safety and health. 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 at workplace. 4.8 Communication with peers and seniors at workplace.
5. Resource implication	The following resources must be provided: 5.1 workplace (actual or simulated); 5.2 internet connectivity; and 5.3 relevant equipment and software.
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module. 7.2 Assessment should be done by a BTEB certified assessor.
<b>Accreditation Requirements</b> Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Develop eCommerce Website Using eCommerce Solution</b>
<b>Unit Code</b>	<b>ICTWEB6013A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to develop eCommerce website using eCommerce solution. It includes planning eCommerce features and payment method, integrating eCommerce solution and payment method and testing shopping system.
<b>Nominal Hours</b>	<b>90 hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan eCommerce features and payment method	1.1 Purpose and intended uses of shopping system are identified. 1.2 Payment methods are identified. 1.3 Demo purchased is demonstrated. 1.4 eCommerce business model is developed to meet client requirement.
2. Integrate eCommerce solution and payment method	2.1 <b><i>eCommerce solution</i></b> is identified, evaluated and selected. 2.2 eCommerce solution is integrated as per selected solution. 2.3 <b><i>Payment methods</i></b> are implemented. 2.4 Solution is developed as per online shopping, security standard.
3. Test shopping system	3.1 Shopping cart is tested. 3.2 Website is tested according to the testing criteria. 3.3 Website is opened in a variety of common <b><i>browsers</i></b> . 3.4 <b><i>Accessibility</i></b> , readability, legibility and appearance are checked in accordance with client requirements. 3.5 Website is evaluated for suitability as per client requirement.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)

1. E-Commerce solution	1.1 WooCommerce 1.2 DrupalCommerce 1.3 J2store 1.4 BigCommerce 1.5 Shopify 1.6 Opencart 1.7 Magento
2. Payment methods	2.1 PayPal 2.2 Strip 2.3 SSLCommerz 2.4 Nagad 2.5 Bkash 2.6 Surjopay
3. Browsers	3.1 Google Chrome 3.2 EDGE 3.3 Mozilla Firefox 3.4 Opera 3.5 Safari
4. Accessibility	4.1 Cultural awareness 4.2 Physical impairments 4.3 Remote locations
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 developed eCommerce business model; 1.2 integrated eCommerce solution with selected solution; 1.3 implemented payment methods; 1.4 tested shopping cart; and 1.5 evaluated shopping system.
2. Underpinning knowledge	2.1 Relevant payment methods. 2.2 Relevant eCommerce features. 2.3 Require eCommerce solution. 2.4 Integration procedure of eCommerce solution. 2.5 Security standard for online shopping. 2.6 Process of testing cart. 2.7 Procedure to test shopping system 2.8 Website design standards and conventions recommended from W3C ( <a href="http://www.w3c.org">www.w3c.org</a> ). 2.9 Knowledge on well-structured and well-formed eCommerce structures.

3. Underpinning skill	3.1 Identifying purpose and intended uses of shopping system. 3.2 Demonstrating demo purchased. 3.3 Developing eCommerce business model. 3.4 Applying techniques of integrating eCommerce solution. 3.5 Implementing payment methods. 3.6 Testing shopping cart. 3.7 Carrying out shopping system testing process.
4. Required attitudes	4.1 Commitment to occupational safety and health. 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 at workplace. 4.8 Communication with peers and seniors at workplace.
5. Resource implication	The following resources must be provided: 5.1 workplace (actual or simulated); 5.2 internet connectivity; and 5.3 relevant equipment and software.
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Context of assessment	7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module. 7.2 Assessment should be done by a BTEB certified assessor.
<b>Accreditation Requirements</b> Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

## National Technical and Vocational Qualification Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Manipulate Data Using Data Layer</b>
<b>Unit Code</b>	<b>ICTWEB6014A2</b>
<b>Unit Descriptor</b>	This unit covers knowledge, skills and attitudes required to manipulate data using data layer. It includes planning data layer, implementing ajax and json, using third party API, implementing database and testing data layer.
<b>Nominal Hours</b>	<b>60 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; Italicized</i></b> terms are elaborated in the range of variables
1. Plan data layer	1.1 Purpose and intended audience of the website are identified. 1.2 Design requirements and constraints are identified. 1.3 A conceptual design is developed. 1.4 Necessary <b><i>software</i></b> installed and check all requirement.
2. Implement ajax and json	2.1 Configure embedded ajax and json as required. 2.2 Content are added to the site via ajax. 2.3 Content are formatted in accordance with client requirements following legislation issues. 2.4 Ajax and json functionality are tested.
3. Use third party API	3.1 <b><i>Third party API</i></b> (Application Programming Interface) data is manipulated by using <b><i>HTTP (Hypertext Transfer Protocol) methods.</i></b> 3.2 Data from third party API is tested.
4. Implement database	4.1 DB and table are created, and data is inserted. 4.2 <b><i>CRUD operation</i></b> is performed. 4.3 Last ID is retrieved. 4.4 Multiple data are inserted. 4.5 Data is limited. 4.6 Table relation is performed.

5. Test data layer	5.1 Data layer is tested according to <b>testing criteria</b> . 5.2 Data layer is evaluated for <b>suitability</b> as per client requirement.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (May include but not limited to)
1. Software	1.1 Operating system 1.2 Application server 1.3 Anti-virus software 1.4 FTP client software
2. Third party API	2.1 Weather API 2.2 Rapid API 2.3 Any API 2.4 Firebase 2.5 AWS API
3. HTTP methods	3.1 Post 3.2 Get 3.3 Put 3.4 Patch 3.5 Delete
4. CRUD	4.1 Create 4.2 Retrieve 4.3 Update 4.4 Delete
5. Testing criteria	5.1 Compatibility 5.2 Functionality 5.3 Correction of any Errors 5.4 Log in
6. Suitability	6.1 Purpose 6.2 Target audience 6.3 Specifications
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	

1. Critical aspects of competency	<p>Assessment required evidences that the candidate:</p> <p>1.1 tested ajax and json functionality;  1.2 manipulated third party API;  1.3 performed CRUD operation; and  1.4 performed test to ensure compatibility of data layer.</p>
2. Underpinning knowledge	<p>2.1 Configure process of ajax and JSON code.  2.2 Knowledge of ajax and JSON code.  2.3 Relevant software.  2.4 Third party API.  2.5 HTTP (Hypertext Transfer Protocol) methods.  2.6 Procedure of implementing database.  2.7 Developing test cases and procedures to test the website according to the testing procedures.</p>
3. Underpinning skill	<p>3.1 Configuring ajax and JSON code.  3.2 Adding and formatting content to site.  3.3 Testing functionality of ajax and json.  3.4 Manipulating third party data.  3.5 Applying technique for implementing database.  3.6 Carrying out test for ensuring compatibility of data layer.</p>
4. Required attitudes	<p>4.1 Commitment to occupational safety and health.  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 at workplace.  4.8 Communication with peers and seniors at workplace.</p>
5. Resource implication	<p>The following resources must be provided:</p> <p>5.1 workplace (actual or simulated);  5.2 internet connectivity; and  5.3 relevant equipment and software.</p>
6. Methods of assessment	<p>Methods of assessment may include but not limited to:</p> <p>6.1 written test;  6.2 demonstration;  6.3 oral questioning; and  6.4 portfolio.</p>



7. Context of assessment	<p>7.1 Competency assessment must be done in a training center or in an actual or simulated workplace after completion of the training module.</p> <p>7.2 Assessment should be done by a BTEB certified assessor.</p>
<p><b>Accreditation Requirements</b></p> <p>Training Providers must be accredited by Bangladesh Technical Education Board (BTEB), 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.</p>	

## National Technical and Vocational Qualifications Framework for Bangladesh

### Unit of Competency

<b>Unit Title</b>	<b>Prepare Project Proposal</b>
<b>Unit Code</b>	<b>ICTWEB6015A1</b>
<b>Unit Descriptor</b>	This unit covers the knowledge, skills and attitudes required to prepare project proposal. It includes identifying and collecting client requirements and preparing & presenting proposal.
<b>Nominal Hours</b>	<b>20 Hours</b>
<b>Elements of Competency</b>	<b>Performance Criteria</b> <b><i>Bold &amp; italicized</i></b> terms are elaborated in the Range of Variables
1. Identify and collect client requirements	1.1 <b><i>Client requirements</i></b> are obtained through standard data/information gathering techniques. 1.2 Document is prepared according to client's requirement.
2. Prepare and present proposal	2.1 Different types of web development options are identified and documented according to client's requirement. 2.2 Elements of project proposal are determined. 2.3 Development effort, resources and cost estimated are identified as per <b><i>web development options</i></b> . 2.4 Web development proposal is compiled as per development organization standards. 2.5 <b><i>Project proposal</i></b> is presented to client for approval according to standard procedure.
<b>Range of Variables</b>	
<b>Variable</b>	<b>Range</b> (may include but not limited to)
1. Client requirements	1.1 Pages 1.2 Block layout (Template) 1.3 Contents 1.4 Colour Schemes 1.5 Technology 1.6 Navigation Structures etc.

2. Elements of project proposal	2.1 Background of project 2.2 Project objectives 2.3 Project schedule 2.4 Requirements 2.5 Description of project budget 2.6 Resources needed 2.7 Overall benefits
3. Web development options	3.1 Open source software 3.2 Closed source software 3.3 Free software 3.4 Licensed software
4. Project proposal	4.1 Travel agency 4.2 School management 4.3 Portfolio 4.4 Hostel managing
<b>Evidence Guide</b> The evidence must be authentic, valid, sufficient, reliable, consistent and recent and meet all requirements of current version of the Unit of Competency.	
1. Critical aspects of competency	Assessment required evidences that the candidate: 1.1 identified customer requirement; 1.2 selected the most suitable web development option; 1.3 compiled web development proposal; and 1.4 presented project proposal.
2. Underpinning knowledge	2.1 Fundamentals of ICT. 2.2 Basic web concepts. 2.3 Tools and features of web development. 2.4 Proposal writing concepts. 2.5 Requirement gathering process. 2.6 Secure and ethical usage of software and hardware. 2.7 Basic project cost estimation technique. 2.8 Presentation techniques. 2.9 Decision Analysis and Resolution (DAR)
3. Underpinning skills	3.1 Writing proposal. 3.2 Preparing project cost. 3.3 Communication skill. 3.4 Interpersonal skill. 3.5 Presentation skill.

4. Required attitudes	4.1 Commitment to occupational safety and health. 4.2 Promptness in carrying out activities. 4.3 Sincere and honest to duties. 4.4 Environmental concerns. 4.5 Eagerness to learn and works. 4.6 Tidiness and timeliness. 4.7 Respect for rights of peers and seniors in workplace. 4.8 Communication with peers and senior at workplace.
5. Resource implication	The following resources must be provided: 5.1 workplace (actual or simulated); 5.2 internet connectivity; and 5.3 relevant equipment and software.
6. Methods of assessment	Methods of assessment may include but not limited to: 6.1 written test; 6.2 demonstration; 6.3 oral questioning; and 6.4 portfolio.
7. Context of assessment	7.1 Competency assessment must be done in a training centre or in an actual or simulated workplace after completion of the training module. 7.2 Assessment should be done by a BTEB certified assessor.
<b>Accreditation Requirements</b>  Bangladesh Technical Education Board (BTEB), the national quality assurance body, must accredit training Providers 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 any national qualification. Accredited providers assessing against this unit of competency must meet the quality assurance requirements set by BTEB.	

## Acknowledgements

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