



**NATIONAL COMPETENCY STANDARDS
FOR
CONSTRUCTION CARPENTER
(CERTIFICATE 2&3)**

**TVET QUALITY COUNCIL
BHUTAN QUALIFICATIONS AND PROFESSIONALS
CERTIFICATION AUTHORITY
THIMPHU, BHUTAN: NOV 2023**

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FOREWORD

The TVET Quality Council, BQPCA is pleased to present the National Competency Standards (NCS) for Construction Carpenter, BQF Certificate 2 and 3, which is developed in consultation with the field experts and trainers. The main objective of developing National Competency Standards is to set up a well-defined nationally recognized TVET Qualifications that will help in setting a benchmark for the TVET Qualifications in our country aligned to the international best practices.

The standards are developed to ensure that the TVET trainees possess the desired Skills, Knowledge and Attitude required by the industries. In order to ensure the relevancy of the competencies, the standards are developed in close consultation and partnership with industry experts and trainers from training institutes.

A training system based on National Competency Standards shall ensure that the training is relevant to the needs of the labour market. As a result, future TVET trainees will be better skilled to meet the needs and expectations of industries and employers. Such a positive impact on the employability of TVET graduates will enhance the reputation of the TVET system and make it attractive to the youths.

While acknowledging the existing level of cooperation and collaboration, the Council earnestly requests employers and training providers to extend the fullest support and cooperation in development and implementation of the National Competency Standards. The ultimate objective is to build a competent and productive national workforce that will contribute to the socio-economic development of our country. We gratefully acknowledge the valuable contributions made by experts from industries and trainers during the consultation and validation processes of the NCS development. We further look forward to improved industry engagement and active participation of trainers in the development of a quality-assured demand driven TVET system.

**Director
BQPCA**

ACKNOWLEDGEMENT

Date of Review: 29th November 2023

Date of Next Review: 28th November 2026

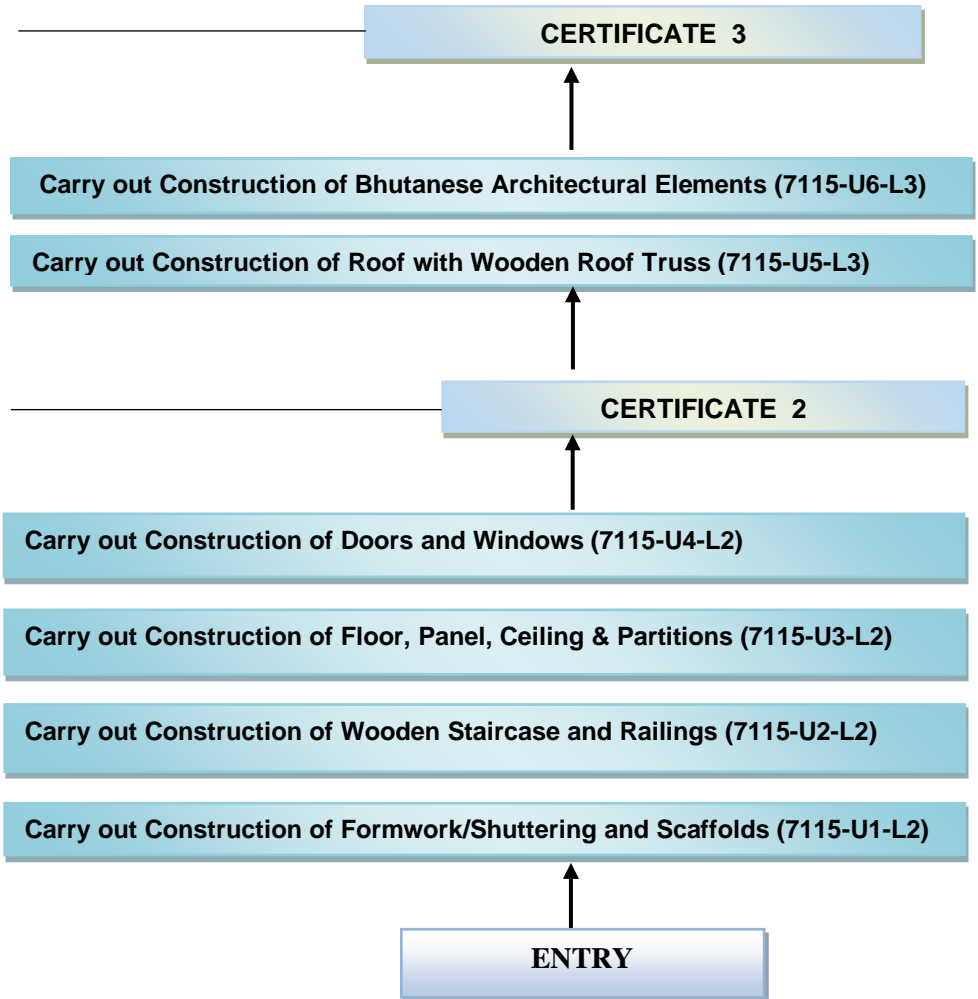
Subject Experts Involved During the Revision of NCS for Construction Carpenter

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1	Sukman Subba	Project Engineer	KN Construction Limited
2	Bhim Bdr. Mukhia	Site Engineer	Eight Builders Pvt. Ltd
3	Pema Tshewang	Met-Hydro Technician	Flood Warning Section, NCHM
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PACKAGING OF QUALIFICATIONS



Unit Title	Element of Competence
1. Carry out Construction of Formwork/Shuttering and Scaffolds	1.1 Construct and Install Formwork 1.2 Construct and Install Shuttering 1.3 Erect and Dismantle Scaffolds
2. Carry out Construction of Wooden Staircase and Railings	2.1 Construct Wooden Staircase 2.2 Construct Wooden Railings
3. Carry out Construction of Floor, Panel, Ceiling and Partitions	3.1 Construct and Fix Wooden Floor 3.2 Construct and Install Wooden Panels 3.3 Prepare and Fix Wooden Ceiling 3.4 Construct and Fix False Ceiling 3.5 Construct Wooden Partitions
4. Carry out Construction of Doors and Windows	4.1 Construct and Fix Wooden Doors 4.2 Construct and Fix Wooden Windows 4.3 Construct and Fix uPVC Doors and Windows
5. Carry out Construction of Roof with Wooden Roof Truss	5.1 Construct and Erect Wooden Roof Truss 5.2 Fix Roof Covering and Ridges
6. Carry out Construction of Bhutanese Architectural Elements	6.1 Perform Construction of Primary Architectural Elements 6.2 Perform Construction of Secondary Architectural Elements

UNIT TITLE	Carry out Construction of Formwork/Shuttering and Scaffolds
DESCRIPTOR	This unit covers the competencies required to construct formwork, shuttering and scaffolding at the workplace following standards practices at all times
CODE	7115-U1-L2
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Construct & Install Formwork	<p>1.1 Use required personal protective equipment (PPE) as per the job requirement</p> <p>1.2 Identify the location for design of formwork commonly used in the construction of buildings as per the job requirement</p> <p>1.3 Read and interpret formwork drawing as per the job requirement</p> <p>1.4 Prepare estimate of formwork materials required as per the job requirement</p> <p>1.5 Select and prepare formwork materials required as per the job requirement</p> <p>1.6 Select and use required tools and equipment as per the job requirement</p> <p>1.7 Fabricate formwork components as per the job requirement</p>

	<p>1.8 Install / erect formwork components to required alignment / leveling as per the drawings & specifications</p> <p>1.9 Dismantle/Strip the formwork as per the job requirement following standard procedures</p> <p>1.10 Store or stockpile components following standard procedures</p>
<p>2. Construct and Install Shuttering</p>	<p>2.1 Read and interpret shuttering drawing as per the job requirements</p> <p>2.2 Prepare estimate of shuttering materials required as per the job requirement</p> <p>2.3 Use required tools and equipment as per the job requirement</p> <p>2.4 Fabricate wooden shuttering components as per the job requirement</p> <p>2.5 Install shuttering components to required leveling / alignment as per the drawings & specifications following standard procedures</p> <p>2.6 Dismantle/Strip the shuttering as per the job requirement following standard procedures</p> <p>2.7 Store or stockpile components following standard procedures</p>
	<p>3.1 Identify the location and height of scaffold as per the job requirement</p>

<p>3. Erect and Dismantle Scaffolds</p>	<p>3.2 Prepare estimate of scaffold materials required as per the job requirement</p> <p>3.3 Select and prepare scaffold materials required as per the job requirement</p> <p>3.4 Use required tools and equipment as per the job requirement</p> <p>3.5 Assemble/Erect scaffold components to required leveling / alignment as per the job requirement</p> <p>3.6 Dismantle scaffolding as per the job requirement following standard procedures</p> <p>3.7 Store or stockpile components following standard procedures</p>
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RANGE STATEMENT	
Personal Protective Equipment (PPE) may include but not limited to:	
<ul style="list-style-type: none"> • Goggles • Helmet • Safety Boots • Ear Plug/Muff 	<ul style="list-style-type: none"> • Dust Mask • Apron • Gloves • Safety Belts
Design of formwork may include but not limited to:	
<ul style="list-style-type: none"> • Column • Beam • Slab • Cornices 	<ul style="list-style-type: none"> • Walls • Footings • Lintel • Staircase

Formwork materials may include but not limited to:	
<ul style="list-style-type: none"> • Timbers • Nails • Bamboo • Steel Shuttering Plate/Sheet 	<ul style="list-style-type: none"> • Nuts & Bolts • Ply Boards • Wire • Steel Props
Tools and Equipment may include but not limited to:	
<ul style="list-style-type: none"> • Cutting Tools • Fixing Tools • Boring Tools 	<ul style="list-style-type: none"> • Measuring Tools • Leveling Tools • Marking Tools
Shuttering materials may include but not limited to:	
<ul style="list-style-type: none"> • Timbers • Boards • Nails • Nuts & Bolts • Steel Shuttering Plate/Sheet • Steel Props 	<ul style="list-style-type: none"> • Bamboo • Steels • Ropes • Ply boards • Wire
Scaffolds may include but not limited to:	
<ul style="list-style-type: none"> • Wooden Scaffolds • Bamboo Scaffolds 	<ul style="list-style-type: none"> • Steel Scaffolds
Scaffold materials may include but not limited to:	
<ul style="list-style-type: none"> • Timbers • Nails • Nuts & Bolts 	<ul style="list-style-type: none"> • Bamboo • Steel • Ropes
Critical Aspects	

- Demonstrate compliance with occupational health and safety regulation applicable to work site operation
- Install / erect formwork components to required alignment / leveling as per the drawings & specifications
- Install / erect / fix shuttering components to required alignment / leveling as per the drawings & specifications
- Erect scaffold components to required leveling / alignment as per the job requirement following standard procedures

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> • Ethics and Integrity • Types of formworks and scaffolds • Tools and Equipment • Method of Fabrication • Binding Techniques/Knot types • Occupational Health & Safety (OHS) Regulations • Methods and process for fixing various formwork/shuttering • Shuttering and scaffolding • Estimation and Costing • Basic technical drawings 	<ul style="list-style-type: none"> • Team Work • Communication • Problem Solving • Interpersonal Relationship • Creativity • Time Management

UNIT TITLE	Carry out Construction of Wooden Staircase and Railings
DESCRIPTOR	This unit covers the competencies required to construct staircase and railing to required dimensions / specifications at the workplace, ensuring safety at all times
CODE	7115-U2-L2
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Construct Wooden Staircase	<p>1.1 Use required personal protective equipment (PPE) as per the job requirement</p> <p>1.2 Use required tools and equipment as per the job requirement</p> <p>1.3 Read and interpret drawing and specification as per the job requirement</p> <p>1.4 Prepare estimate of staircase materials as per the job requirements</p> <p>1.5 Perform preparation of staircase components as per the job requirements to required dimensions as per the drawings & specifications</p> <p>1.6 Fix staircase components as per the job requirement in accordance with drawings and specifications following standard procedures</p>

	1.7 Perform finishing work as per the job requirements
2. Construct Wooden Railings	<p>2.1 Read and interpret drawing and specification as per the job requirement</p> <p>2.2 Prepare estimate of railing materials as per the job requirements</p> <p>2.3 Prepare railing components as per the job requirements to required dimensions as per the drawings & specifications following standard procedures</p> <p>2.4 Install railings as per the job requirement in accordance with drawings and specifications following standard procedures</p> <p>2.5 Perform finishing work as per the job requirements</p>

RANGE STATEMENT	
Personal Protective Equipment (PPE) may include not limited to:	
<ul style="list-style-type: none"> • Goggles • Helmet • Safety Boots • Ear plug/muff 	<ul style="list-style-type: none"> • Dust Masks • Apron • Gloves • Safety Belt
Tools and Equipment may include but not limited to:	

<ul style="list-style-type: none"> • Hand Drill • Planes • Hand Saw • Chisel • Mallet • Knives • Hammers 	<ul style="list-style-type: none"> • Clamps • Screw Drivers • Try-Square • Plumb Bob • Measuring tape • Sprit Level • Marking Tools
Staircase and railing materials may include but not limited to:	
<ul style="list-style-type: none"> • Timber • Nut and Bolt • Adhesive 	<ul style="list-style-type: none"> • Nail • Screw
Preparation may include but not limited to:	
<ul style="list-style-type: none"> • Cutting • Sawing 	<ul style="list-style-type: none"> • Planing • Chiseling
Finishing work may include but not limited to:	
<ul style="list-style-type: none"> • Polishing • Sanding 	<ul style="list-style-type: none"> • Painting
Critical Aspects	
<ul style="list-style-type: none"> • Demonstrate compliance with Occupational Health and Safety Regulations applicable to work site operation • Fix wooden staircase as per the drawings and specifications • Install railings as per the job requirement in accordance with drawing and specifications 	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> • Ethics and integrity • First Aids 	<ul style="list-style-type: none"> • Team Work • Communication

<ul style="list-style-type: none">• Tools and equipment• Types of joints or joinery• Different adhesives and their functions• Occupational Health and Safety (OHS) Regulations• Different Designs of Staircase• Basic technical drawings• Economic use of materials• Seasoning of timber	<ul style="list-style-type: none">• Problem Solving• Interpersonal Relationship• Creativity• Time Management
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UNIT TITLE	Carry out Construction of Floor, Panel, Ceiling and Partitions
DESCRIPTOR	This unit covers the competencies required to carry out wooden flooring, paneling and wooden and false ceiling works to required dimensions / specifications, ensuring safety at all times
CODE	7115-U3-L2
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Construct and Fix Wooden Floor	<p>1.1 Use required personal protective equipment (PPE) as per the job requirement</p> <p>1.2 Read and interpret drawing and specification as per the job requirement</p> <p>1.3 Prepare estimate of flooring materials as per the job requirement</p> <p>1.4 Use tools and equipment as per the job requirement</p> <p>1.5 Perform Preparation of the flooring materials and support structures as per the job requirements to required dimensions as per the drawings & specifications</p> <p>1.6 Install support structures as per the drawings and specifications</p> <p>1.7 Lay flooring materials to required level and dimensions as per the drawings & specifications following standard procedures</p>

	<p>1.8 Perform finishing works as per the job requirement</p>
<p>2. Construct and Install Wooden Panels</p>	<p>2.1 Read and interpret drawing and specification as per the job requirement</p> <p>2.2 Prepare estimate of paneling materials as per the job requirement</p> <p>2.3 Use tools and equipment as per the job requirement</p> <p>2.4 Prepare the paneling materials and support structures as per the job requirement to required dimensions as per the drawings & specification</p> <p>2.5 Install support structures as per the job requirement</p> <p>2.6 Fix paneling materials to required alignment & dimensions as per the drawings and specifications following standard procedures</p> <p>2.7 Perform finishing works as per the job requirement</p>
<p>3. Prepare and Fix Wooden Ceiling</p>	<p>3.1 Read and interpret drawing and specification as per the job requirement following standard procedures</p> <p>3.1 Prepare estimate of ceiling materials as per the job requirements</p>

	<p>3.2 Use tools and equipment as per the job requirements</p> <p>3.3 Prepare the ceiling materials and support structures as per the job requirements to required dimensions as per the drawings & specifications</p> <p>3.4 Install support structures as per the job requirement</p> <p>3.5 Fix ceiling materials securely to required dimensions as per the drawings & specifications Perform finishing work as per the job requirements</p>
<p>4. Prepare and Fix False Ceiling</p>	<p>4.1 Read and interpret drawing and specification as per the job requirement</p> <p>4.2 Prepare estimate of false ceiling materials as per the job requirements</p> <p>4.3 Use tools and equipment as per the job requirements</p> <p>4.4 Identify and prepare the false ceiling materials and support structures as per the job requirements to required dimensions as per the drawings & specifications</p> <p>4.5 Fix support structures as per the job requirement</p>

	<p>4.6 Fix ceiling component securely to required dimensions as per the drawings & specifications following standard procedures</p> <p>4.7 Perform finishing work as per the job requirements</p>
<p>5. Construct Wooden Partitions</p>	<p>5.1 Read and interpret drawing and specification as per the job requirement</p> <p>5.2 Prepare estimate of materials as per the job requirements</p> <p>5.3 Use tools and equipment as per the job requirements</p> <p>5.4 Prepare the partition materials and support structures as per the job requirements to required dimensions as per the drawings & specifications following standard procedures</p> <p>5.5 Install support structures as per the drawings and specifications</p> <p>5.6 Fix partition materials securely to required dimensions as per the drawings & specifications following standard procedures</p> <p>5.7 Perform finishing work as per the job requirements</p>

RANGE STATEMENT	
Personal Protective Equipment (PPE) may include but not limited to:	
<ul style="list-style-type: none"> • Goggles • Helmet • Safety Boots • Ear Plug/Muff 	<ul style="list-style-type: none"> • Dust Mask • Apron • Gloves • Safety Belt
Flooring materials may include but not limited to:	
<ul style="list-style-type: none"> • Timber • Nail • Board • Polish 	<ul style="list-style-type: none"> • Plank • Screw • Wood Filler • Paint
Tools and Equipment may include but not limited to:	
<ul style="list-style-type: none"> • Saw • Chisel • Hammer • Knife • Planer 	<ul style="list-style-type: none"> • Plumb Bob • Spirit Level • Measuring Tape • Marking Tools • Brush
Preparation may include but not limited to:	
<ul style="list-style-type: none"> • Cutting • Sawing • Chiseling 	<ul style="list-style-type: none"> • Planing • Grooving
Paneling materials may include but not limited to:	
<ul style="list-style-type: none"> • Plank • Timber 	<ul style="list-style-type: none"> • Nail • Board
False Ceiling Materials may include but not limited to:	

<ul style="list-style-type: none"> • Gypsum Board • Fiber Board 	<ul style="list-style-type: none"> • Cement Board
<p>Ceiling Components may include but not limited to:</p>	
<ul style="list-style-type: none"> • Perimeter Channel • Intermediate Channel • Ceiling Section 	<ul style="list-style-type: none"> • Fiber Tape • Soffit Cleat
<p>Critical Aspects</p>	
<ul style="list-style-type: none"> • Construct and fix flooring materials to required level and dimensions as per the drawings & specifications • Fix paneling materials to required alignment & dimensions as per the drawings & specifications • Fix ceiling materials securely to required dimensions as per the drawings & specifications • Construct partition walls securely to required dimensions as per the drawings and specifications • Demonstrate compliance with Occupational Health and Safety Regulations applicable to work site operation 	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> • Ethics and Integrity • Types of timber • Defects of timber • Types of boards • Tools and equipment • Types of flooring, paneling, partitions and ceiling • False Ceiling • Types of joinery works • Different adhesives and abrasives and their functions • Specification of materials 	<ul style="list-style-type: none"> • Team Work • Communication • Problem Solving • Interpersonal Relationship • Creativity • Time Management

<ul style="list-style-type: none">• Technical drawings & specifications• Basic estimation and costing• Wood treatment and preservatives• Seasoning of timbers	
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UNIT TITLE	Carry out Construction of Doors and Windows
DESCRIPTOR	This unit covers the competencies required to construct doors, windows and then to fix necessary hardware fittings as per the specifications, ensuring safety at all times
CODE	7115-U4-L2
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Construct and Fix Wooden Doors	<p>1.1 Use required <i>personal protective equipment</i> (PPE) as per the job requirement</p> <p>1.2 Read and interpret door drawings according to the job requirements</p> <p>1.3 Prepare estimate of door materials required according to the job requirement</p> <p>1.4 Use required tools and equipment as per the job requirement</p> <p>1.5 Prepare door frames and shutters in accordance with drawings and specifications</p> <p>1.6 Prepare <i>door components</i> to required dimensions in accordance with drawings and specifications following standard procedures</p> <p>1.7 Assemble door components as per the drawings and specifications following standard procedures</p>

	<p>1.8 Fix door components to required alignment as per the standard procedures</p> <p>1.9 Fix hardware fittings securely to required alignments as per the job requirements</p> <p>1.10 Carry out finishing work as per the job requirement</p>
<p>2. Construct and Fix Wooden Windows</p>	<p>2.1 Read and interpret window drawings according to the job requirements</p> <p>2.2 Prepare estimate of window materials required according to the job requirement</p> <p>2.3 Prepare window frames and shutters in accordance with drawings and specifications</p> <p>2.4 Prepare traditional window components to required dimensions in accordance with drawings and specifications</p> <p>2.5 Assemble window components as per the drawings and specifications following standard procedures</p> <p>2.6 Fix window to required alignment as per the drawings and specifications</p> <p>2.7 Fix hardware fittings securely to required alignments as per the job requirements</p> <p>2.8 Perform finishing work as per the job requirements</p>

<p>3. Construct and Fix uPVC Doors and Windows</p>	<p>3.1 Read and interpret drawings according to the job requirements</p> <p>3.2 Prepare estimate of materials required according to the job requirement</p> <p>3.3 Prepare frames and shutters in accordance with drawings and specifications following standard procedures</p> <p>3.4 Prepare window and door components to required dimensions in accordance with drawings and specifications</p> <p>3.5 Assemble window and door components as per the drawings and specifications</p> <p>3.6 Fix window and door to required alignment as per the drawings and specifications</p> <p>3.7 Fix hardware fittings securely to required alignments as per the job requirements</p> <p>3.8 Perform <i>finishing work</i> as per the job requirements</p>
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RANGE STATEMENT	
Personal Protective Equipment may include but not limited to:	
<ul style="list-style-type: none"> • Goggles • Helmet • Safety Boots • Ear plug/muff 	<ul style="list-style-type: none"> • Dust Mask • Apron • Gloves • Safety Belt

Tools and equipment may include but not limited to:	
<ul style="list-style-type: none"> • Saw • Chisel • Knives • Hammers • Marking Tools • Drill • Pinch Bar • Angled Finishing Gun • Glass Sucker 	<ul style="list-style-type: none"> • Clamps • Screw Drivers • Try-Square • Plumb Bob • Measuring Tape • Driver • Leveling Tools • Horse Shoe Packer
Door and window materials may include but not limited to:	
<ul style="list-style-type: none"> • Wood • Ply Wood/board • Glass • Wooden/Plastic Beads 	<ul style="list-style-type: none"> • Nail • Hardware Fittings • Silicon
Hardware fittings may include but not limited to:	
<ul style="list-style-type: none"> • Latches • Hinges • Handles • Door Stop • Locks • Center Lock 	<ul style="list-style-type: none"> • Window Grills • Hydraulic door closer • Sliding Bolt • Hook and Eye • Hold Fast
Traditional Window Components may include but not limited to:	
<ul style="list-style-type: none"> • Kachung • Zing/Horzhu 	<ul style="list-style-type: none"> • Tshgay • Jukshing
Door and window components may include but not limited to:	
<ul style="list-style-type: none"> • Post/Jamb • Panel 	<ul style="list-style-type: none"> • Sill • Styles

<ul style="list-style-type: none"> • Mullion 	<ul style="list-style-type: none"> • Lock Rail
Finishing work may include but not limited to:	
<ul style="list-style-type: none"> • Polishing • Sanding 	<ul style="list-style-type: none"> • Painting • Filing
Critical Aspects	
<ul style="list-style-type: none"> • Demonstrate compliance with Occupational Health and Safety Regulations applicable to work site operation • Install door and hardware fittings securely to required dimensions as per the drawings and specifications • Install window and hardware fittings securely to required dimensions as per the drawings and specifications • Install uPVC window & door and fittings securely to required dimensions as per the drawings and specifications 	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> • Ethics and Integrity • Types of timber • Defects of Timber • uPVC doors and Windows • Tools and equipment • Types of hardware fittings • Types of joints or joinery • Different adhesives and abrasives and their functions • Occupational Health and Safety Regulations • Basic technical drawings and details • Basic estimation and costing • Seasoning of Timbers • Types of doors and windows 	<ul style="list-style-type: none"> • Team Work • Communication • Problem Solving • Interpersonal Relationship • Creativity • Time Management

<ul style="list-style-type: none"> • Wood Treatment and Preservatives 	
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UNIT TITLE	Carry out Construction of Roof with Wooden Roof Truss
DESCRIPTOR	This unit covers the competencies required to construct roof truss, fix roof covering and ridges and then to fix roof coverings to required dimensions / specifications, ensuring safety at all times
CODE	7115-U5-L3
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Construct and Erect Wooden Roof Truss	1.1 Use required personal protective equipment (PPE) as per the job requirement 1.2 Use required tools and equipment as per the job requirement 1.3 Read and interpret drawing and specification as per the job requirement 1.4 Prepare estimate of roof truss materials as per the drawings and specifications following standard procedures 1.5 Perform preparation of the roof truss components to required dimensions as per the drawings & specifications following standard procedures

	<p>1.6 Erect roof truss according to the drawing /specification's following standard procedures</p> <p>1.7 Fix purlin and eave boards as per the drawings and specifications following standard procedures</p> <p>1.8 Carry out finishing work as per the job requirement</p>
<p>2. Fix Roof Covering and Ridges</p>	<p>2.1 Read and interpret drawing and specification as per the job requirement</p> <p>2.2 Prepare estimate of roof covering materials as per the job requirements</p> <p>2.3 Prepare roof covering and ridges as per the job requirement</p> <p>2.4 Fix roof covering and ridges securely as per the drawings and specifications following standard procedures</p> <p>2.5 Fix gutter components as per the drawings and specification</p> <p>2.6 Carryout finishing work as per the job requirement</p>

RANGE STATEMENT	
Personal Protective Equipment (PPE) may include but not limited to:	
<ul style="list-style-type: none"> • Helmet • Goggles • Rubber Grip shoes or Boot 	<ul style="list-style-type: none"> • Ear plugs or Muff • Gloves • Safety Belt
Tools and equipment may include but not limited to:	
<ul style="list-style-type: none"> • Hand Drill • Plane • Hand Saw • Chisel • Mallet • Knife • Hammer • Centre Punch • Adjustable Spanner • Ripping Bar 	<ul style="list-style-type: none"> • Clamp • Screw Driver • Try-Square • Plumb Bob • Measuring Tape • Spirit Level • Marking Gauge • Tool Bag • Snip
Roof truss materials may include but not limited to:	
<ul style="list-style-type: none"> • Nail • Roofing screw • Nuts and Bolts 	<ul style="list-style-type: none"> • Timber • Bracket • Gusset
Preparation may include but not limited to:	
<ul style="list-style-type: none"> • Cutting • Sawing 	<ul style="list-style-type: none"> • Drilling • Jointing
Roof truss components may include but not limited to:	
<ul style="list-style-type: none"> • Tie • Rafter • Post 	<ul style="list-style-type: none"> • Strut • Bracing

Roof covering materials may include but not limited to:	
<ul style="list-style-type: none"> • Nail • Roofing Screw 	<ul style="list-style-type: none"> • Roofing Sheet
Gutter components may include but not limited to:	
<ul style="list-style-type: none"> • PVC Gutter and clamp 	<ul style="list-style-type: none"> • GI Gutter and clamp
Finishing work may include but not limited to:	
<ul style="list-style-type: none"> • Applying Wood Preservatives 	<ul style="list-style-type: none"> • Painting
Critical Aspects	
<ul style="list-style-type: none"> • Demonstrate compliance with Occupational Health and Safety Regulations applicable to work site operation. • Construct and erect wooden roof truss according to the drawing / specifications • Fix roof covering and ridges securely as per the drawings and specification 	

UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
<ul style="list-style-type: none"> • Ethics and Integrity • Types of roofs, roof coverings, ridges, gutters and their functions • Types of roof trusses • Ladder and scaffolds • Occupational Health and Safety (OHS) Regulations • Basic technical drawings and specifications • Types of joinery work • Basic estimation and costing • Protection of roof from windstorms 	<ul style="list-style-type: none"> • Team Work • Communication • Problem Solving • Interpersonal Relationship • Creativity • Time Management

UNIT TITLE	Carry out Construction of Bhutanese Architectural Elements
DESCRIPTOR	This unit covers the competencies required to construct primary and secondary architectural elements as per the specifications, ensuring safety at all times
CODE	7115-U6-L3
ELEMENTS OF COMPETENCE	PERFORMANCE CRITERIA
1. Perform Construction of Primary Architectural Elements	<p>1.1 Use required <i>personal protective equipment (PPE)</i> as per the job requirement</p> <p>1.2 Use required <i>tools and equipment</i> as per the job requirement</p> <p>1.3 Read and interpret drawing and specification as per the job requirement</p> <p>1.4 Prepare estimate of materials as per the job requirements</p> <p>1.5 Prepare <i>primary architectural elements</i> as per the job requirement following standard procedures</p> <p>1.6 Fix primary architectural elements securely to required dimensions as per the drawings and specifications following standard procedures</p> <p>1.7 Carryout finishing work as per the job requirements</p>

<p>2. Perform Construction of Secondary Architectural Elements</p>	<p>2.1 Use required personal protective equipment (PPE) as per the job requirement</p> <p>2.2 Use required tools and equipment as per the job requirement</p> <p>2.3 Read and interpret drawings and specifications as per the job requirement</p> <p>2.4 Prepare estimate of materials as per the job requirement</p> <p>2.5 Prepare secondary architectural elements as per the job requirement following standard procedures</p> <p>2.6 Fix secondary architectural elements securely to required dimensions as per the drawings and specifications following standard procedures</p> <p>2.7 Carryout finishing work as per the job requirements</p>
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<p>RANGE STATEMENT</p>	
<p>Personal Protective Equipment may include but not limited to:</p>	
<ul style="list-style-type: none"> • Goggles • Helmet • Safety Boots • Ear Plug/Muff 	<ul style="list-style-type: none"> • Dust Masks • Apron • Gloves • Safety Belt
<p>Tools and equipment may include but not limited to:</p>	

<ul style="list-style-type: none"> • Hand Drills • Planes • Hand Saw • Chisel • Mallet • Knife • Hammer 	<ul style="list-style-type: none"> • Clamps • Screw Drivers • Try-Square • Plumb Bob • Measuring Tape • Spirit Level
Materials may include but not limited to:	
<ul style="list-style-type: none"> • Nail • Screw 	<ul style="list-style-type: none"> • Plank • Timber
Preparation may include but not limited to:	
<ul style="list-style-type: none"> • Cutting • Sawing • Basic Carving 	<ul style="list-style-type: none"> • Planning • Chiseling
Primary Bhutanese Architectural Elements may include but not limited to:	
<ul style="list-style-type: none"> • Dung and Pem • Bho and Chechu Khanim • Bho Khep • Kaa • Zhur Chen • Chechu Khanim • Ngangpa and Ngangkhep 	<ul style="list-style-type: none"> • Phuto Bow • Norbu Bagham • Norbu Horchu • Drey • Ri Nga • Choe tsheg
Secondary Bhutanese Architectural Elements may include but not limited to:	
<ul style="list-style-type: none"> • Kaw/Kachen • Zhu 	<ul style="list-style-type: none"> • Norbu Tog/ Gyeltshen • Ja Dang Tazi
Finishing work may include but not limited to:	

<ul style="list-style-type: none"> • Polishing • Sanding 	<ul style="list-style-type: none"> • Painting
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Critical Aspects

<ul style="list-style-type: none"> • Demonstrate compliance with Occupational Health and Safety Regulations applicable to work site operation • Prepare primary and secondary architectural elements as per the job requirement following standard procedures • Fix primary and secondary architectural elements securely to required dimensions as the drawings and specifications
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UNDERPINNING KNOWLEDGE	UNDERPINNING SKILLS
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<ul style="list-style-type: none"> • Ethics and Integrity • Basic First Aid • Tools and equipment • Types of joints or joinery • Different adhesives and their functions • Occupational Health and Safety (OHS) Regulations • Basic technical drawings • Economic use of materials • Basic estimation and costing • Basic traditional carpentry 	<ul style="list-style-type: none"> • Team Work • Communication • Problem Solving • Interpersonal Relationship • Creativity • Time Management
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ANNEXURE

1.1. National Competency Standards (NCS)

The National Competency Standards specify the skill, knowledge and attitudes applied to a particular occupation. Standards also specify the standards or criteria of performance of a competent worker and the various contexts in which work may take place. Standards provide explicit advice to assessors regarding the skill and knowledge to be demonstrated by candidates seeking formal recognition either following training or through work experience.

1.2. Purpose of National Competency Standards

National Competency Standards serve a number of purposes including:

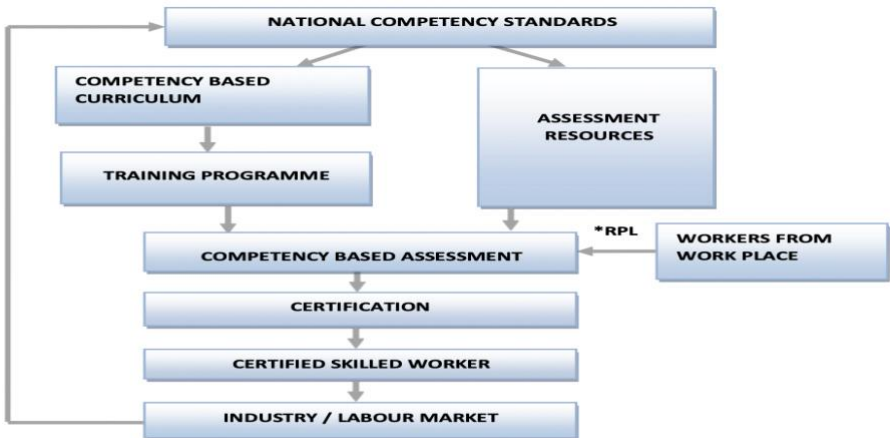
- Providing advice to curriculum developers about the competencies to be included in the curriculum.
- Providing specifications to assessment resource developers about the competencies within an occupation to be demonstrated by candidates.
- Providing advice to industry/employers about job functions, which in turn can be used for the development of job descriptions, performance appraisal systems and work flow analysis.

1.3. Bhutan Qualifications Framework (BQF)

Bhutan Qualifications Framework is an integrated national framework that outlines all types of qualification in Bhutan. As an established and nationally accepted instrument, the BQF has been benchmarked against international practices in terms of standards. The BQF aims to recognize all forms of learning systems, including formal, non-formal, and informal learning. It acknowledges technological advancements and recognizes contemporary

modes of delivery. It covers a broad range of education systems including the TVET education.

1.4 Implementation of TVET Qualifications



* RPL = Recognition of Prior Learning

1.5 TVET Qualifications Levels

TVET Qualifications has six levels as per the BQF. The six levels are:

- Applied Degree: Level 6
- Advanced Diploma: Level 5
- Diploma: Level 4
- Certificate 3
- Certificate 2
- Certificate 1

1.6. Level Descriptors

The TVET Qualification levels are set based on the level descriptors, as defined in the BQF. The detail of the qualification level descriptor is as follow:

Certificate 1

Skills	Knowledge:	Application
<ul style="list-style-type: none"> ● Applying operational literacy, numeracy skills required to carry out simple tasks ● Applying simple solutions to solve simple and straightforward everyday issues ● Communicating using everyday expressions and simple phrases 	<ul style="list-style-type: none"> ● Foundational, every day and general: ● Basic operational knowledge and skill ● Utilization of basic available information ● Known solutions to familiar problems ● Little generation of new ideas 	<ul style="list-style-type: none"> ● Highly structured tasks with close support and supervision ● Minimal discretion and judgement ● Readiness to work together and share knowledge with others

Certificate level 2

Skills	Knowledge	Application
<ul style="list-style-type: none"> ● Applying standard processes relevant to carry out known tasks ● Applying a set of known solutions to solve simple and straightforward issues ● Using simple and direct exchange of 	<ul style="list-style-type: none"> ● Basic, factual and conceptual ● Some relevant theoretical knowledge ● Interpretation of available information ● Discretion and judgments 	<ul style="list-style-type: none"> ● Structured and stable tasks ● General support and supervision that require some discretion and judgement

information on familiar and routine matters	<ul style="list-style-type: none"> • A range of known responses to familiar problems 	<ul style="list-style-type: none"> • Collaborati on with others to achieve goals
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Certificate 3

Skills	Knowledge:	Application:
<ul style="list-style-type: none"> • Applying a range of standard processes to known but varied tasks • Selecting and applying a range of solutions to familiar and unfamiliar problems 	<ul style="list-style-type: none"> • Theoretical with some technical and operational processes: • A broad knowledge base which incorporates some theoretical concepts • Analytical interpretation of information • Informed judgment • A range of sometimes innovative responses to concrete but often unfamiliar problems 	<ul style="list-style-type: none"> • Stable tasks with some aspects of change • General guidance and supervision that require discretion and judgement • Adapting to own behaviours to work with others

Diploma

Skills:	Knowledge	Application
<ul style="list-style-type: none"> ● Selecting and applying a range of standard processes relevant to varied and sometimes unpredictable tasks ● Selecting and applying a range of solutions involving formulation of solutions to resolve complex issues ● Demonstrating a high level of proficiency in English and Dzongkha 	<ul style="list-style-type: none"> ● Broad theoretical, technical and operational ● Specialist knowledge with depth in more than one area ● Analysis reformatting and evaluation of a wide range of information ● Formulation of appropriate responses to resolve both concrete and abstract problems 	<ul style="list-style-type: none"> ● Stable tasks with predictable changes ● Broad guidance with some selfdirection that require sound judgement ● Taking some responsibility for planning and coordination with others

1.6 CODING USED FOR NATIONAL COMPETENCY STANDARDS

The coding and classification system developed in Bhutan is logical, easy to use, and also aligned with international best practices. The Bhutanese coding and classification system is based on the International Standard Classification of Occupations, 2008 (ISCO-08) developed by the International Labour Organisation (ILO). The coding of the National competency standards forms the basis of the identification code for the Vocational Education and Training Management Information System (VET – MIS) both in terms of economic sector identification and that of the individual standard.

1.7. Coding the individual national competency standards

Coding the individual skills standard has a multiple purpose:

- to identify the level,
- to identify to which module the standard belongs,
- to identify in which order the standard is clustered within that module.

A job can include a number of competencies described in the national competency standards.

However, in

order to follow a logical order, only national competency standards related to each other and following a logical sequence in terms of training delivery, from the simple to the complex, are clustered into a module. Some standards are so complex that they need to stand alone.

Implementation and operational procedures for National Competency Standards (NCS).

