



**Non-Formal Education – Advanced Learning Course**  
**A COMPETENCY BASED CURRICULUM**  
**CONSTRUCTION CARPENTRY**  
**BQF Certificate-2**



**Department of Education Programmes**  
**Ministry of Education and Skills Development**

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Department of Education Programmes  
Ministry of Education and Skills Development  
Royal Government of Bhutan

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## Acknowledgement

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We would like to express our sincere appreciation to the Technical Trainers Training & Resource Centre (TTTRC), Department of Workforce Planning and Skills Development, MoESD and Department of Education Programmes who tirelessly dedicated their time, expertise, and creativity to ensure the quality and effectiveness of this curriculum. Your passion for vocational training has significantly enriched this curriculum and will undoubtedly benefit countless learners. We are also deeply grateful to the TTTRC, who generously selected experts from the market to develop this curriculum.

We would like to acknowledge the experts from the market for their invaluable contributions and collaboration in the development process. Your expertise and insights have been indispensable in shaping the content and structure of the curriculum.

Last but not least, we extend our gratitude to the Korean National Commission for UNESCO for their generous funding, which made this project possible. Your support reflects a shared commitment to promoting education and empowering learners worldwide.

Together, your collective efforts have paved the way for the advancement of the Non-Formal Education Programmes, empowering learners and enriching educational experiences. Thank you for your unwavering dedication and support.

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དཔལ་ལྷན་འབྲུག་གཞུང་། ཤེས་རིག་དང་རིག་རྒྱུན་ལོང་འཕེལ་ལྷན་ཁག་།

Royal Government of Bhutan  
Ministry of Education & Skills Development

Department of Education Programmes  
Program & Youth Coordination Division



## Foreword

It is with great pleasure and enthusiasm that the Ministry of Education and Skills Development introduces the Construction Carpentry Curriculum as part of the Non-Formal Education – Advanced Learning Course. This competency-based curriculum, leading to a BQF Certificate-2, signifies our ongoing dedication to enriching educational opportunities and empowering individuals across our community learning platforms.

At the Ministry of Education and Skills Development, we recognize the importance of vocational training in fostering economic independence and entrepreneurial spirit. This course is designed not only to teach the fundamentals of carpentry but also to imbue our learners with a robust set of skills, readying them for the demands and opportunities of the current job market.

This curriculum will serve as a vital resource for instructors at Community Learning Centers, providing them with structured guidance to effectively deliver the Advanced Learners' Course. The curriculum is structured to ensure that each participant gains practical knowledge and hands-on experience, critical for mastering the art and science behind carpentry construction. It is our fervent hope that this curriculum will encourage creativity and innovation, allowing learners to explore various culinary techniques and trends that are essential in today's dynamic construction industry.

The Ministry extends our sincere gratitude to all those who contributed to the development of this curriculum, including experts from market and stakeholders whose expertise and insights have enriched its content.

We extend our heartfelt gratitude to all the experts whose contributions have been invaluable. Special thanks are also due to the Korean National Commission for UNESCO for their generous support under the 2023 Bridge Bhutan Project, which has made this initiative possible.

As we continue to expand and adapt our educational frameworks to meet the evolving needs of our learners, we remain committed to providing pathways that lead to both personal growth and professional development. Together, let us strive towards a future where education is the cornerstone of community empowerment and individual success.

Tashi Delek!

(Tashi Namgyal)

**Director**

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## COMPETENCY PROFILE

Competency Area	Sub- Competency Area	Competencies/Tasks			
<b>A</b> Perform wood work	<b>A1</b> Maintain hand tools	A1.01 - Sharpen plane/chisel blade	A1.02 - Sharpen saw blade	A1.03 - Sharpen knife	
	<b>A2</b> Maintain power tools and equipment	A2.01 - Service portable circular saw	A2.02 - Service portable router bit	A2.03 - Service portable planer machine	A2.04 - Service jigsaw machine
		A2.05 - Service drill machine	A2.06 - Service sanding machine		
	<b>A3</b> Carry out basic wood work	A3.01 - Plane work piece	A3.02 - Perform sawing	A3.03 - Chisel work piece	
	<b>A4</b> Perform wood joints	A4.01 - Make butt with dowel joint	A4.02 - Make Tenon and Mortise joint	A4.03 - Make bridle joint	A4.04 - Make haunch joint
		A4.05 - Make tongue and groove joint	A4.06 - Make scarf joint		
<b>B</b> Construct formwork and scaffolding	<b>B1</b> Prepare formwork and scaffolding components	B1.01 - Make footing/beam/column formwork	B1.02 - Make cornices formwork	B1.03 - Make staircase formwork	B1.04 - Prepare bamboo/timber scaffolding
	<b>B2</b> Construct formwork	B2.01 - Assemble formwork	B2.02 - Fix formwork	B2.03 - Remove formwork	
	<b>B3</b> Construct scaffolding	B3.01 - Erect bamboo/wooden scaffolding	B3.02 - Disassemble scaffolding	B3.03 - Store scaffolding components	

<b>C</b> Carry out ceiling, flooring, partition and staircase construction work	<b>C1</b> Perform flooring work	C1.01 - Prepare floor joist and board	C1.02 - Fix floor joist	C1.03 - Fix floor boards	C1.04 - Prepare floor skirting	
		C1.05 - Fix floor skirting	C1.06 - Perform finishing			
	<b>C2</b> Perform partition work	C2.01 - Prepare partition frame /board/panel	C2.02 - Fix partition frame	C2.03 - Fix partition board	C2.04 - Fix wall paneling	
		C2.05 - Prepare paneling beads	C2.06 - Fix paneling beads			
	<b>C3</b> Perform ceiling works	C3.01 - Prepare ceiling board/joist	C3.02 - Fix ceiling joist	C3.03 - Fix ceiling board	C3.04 - Make ceiling beads	
		C3.05 - Fix ceiling beads				
	<b>C4</b> Carry out staircase work	C4.01 - Make tread and riser	C4.02 - Make stringer	C4.03 - Make newel post	C4.04 - Make baluster	
		C4.05 - Make hand railing	C4.06 - Assemble staircase components			
	<b>D</b> Construct doors, windows and shutters	<b>D1</b> Prepare doors, windows and shutters components	D1.0 - Make window frame	D1.02 - Make Kachung	D1.03 - Make Zing/Horzhu	D1.04 - Make Tshegen and Jughshing
			D1.05 - Make dhung	D1.06 - Make pem	D1.07 - Prepare window shutter	D1.08 - Prepare door frame
D1.09 - Make door shutter						

	<b>D2 Assemble door &amp; window frames and shutters</b>	D2.01 - Assemble door frame	D2.02 - Assemble window frame	D2.03 - Assemble door and window shutter	
	<b>D3 Install door, window and shutter</b>	D3.01 - Erect door and window frame	D3.02 - Fix door and window shutters	D3.03 - Fix hardware fittings	D3.04 - Fix glass
	<b>D4 Carry out uPVC work</b>	D4.01 - Assemble uPVC window frame	D4.02 - Assemble uPVC door and window shutter	D4.03 - Fix uPVC window frame	D4.04 - Fix uPVC door and window shutter
<b>E Carry out roof work</b>	<b>E1 Construct roof truss</b>	E1.01 - Make wooden roof truss members	E1.02 - Assemble roof truss components	E1.03 - Erect roof truss	
	<b>E2 Install eave boards</b>	E2.01 - Make wooden eave boards	E2.02 - Fix eave boards	E2.03 - Make wooden eave ceiling	E2.04 - Fix wooden eave ceiling
	<b>E3 Perform roof covering</b>	E3.01 - Layout roof covering	E3.02 - Fix CGI/PPGI sheet	E3.03 - Fix ridge	E3.04 - Fix gutter

## COURSE OUTLINE

Sl. No	Subject /Module	Duration (Hours)	Content Competencies (Mapped)
1.	Core modules	480	CC
	<b>Total Course Duration</b>	<b>480</b>	

**Note:** (\*) This curriculum contains core modules which cover main competencies of Construction Carpentry BQF Certificate-2. In order to achieve the qualification of Construction Carpentry BQF Certificate-2, the subjects and modules listed must be accomplished as per the credit hours provided.

### COURSE STRUCTURE FOR CORE COMPETENCIES

Training Modality	Module Title	Learning Outcomes	Duration (Hours)
<b>Institute Training / Community Learning Centers</b>	1. Performing basic wood work	1.01 - Maintain hand tools 1.02 - Maintain power tools and equipment 1.03 - Carry out basic wood work 1.04 - Perform wood joints	75.5
	2. Constructing formwork and scaffolding	2.01 - Prepare formwork and scaffolding components 2.02 - Construct formwork 2.03 - Construct scaffolding	77.5
	3. Carrying out ceiling, flooring, partition and staircase construction work	3.01 - Perform ceiling work 3.02 - Perform flooring work 3.03 - Perform partition work 3.04 - Perform staircase work	139
	4. constructing doors, windows and shutters	4.01 - Prepare doors, windows and shutter component 4.02 - Assemble door & window frames and shutter 4.03 - Install door, window and shutters	133.5
	5. Carrying out roof works	10.01 - Construct roof truss 10.02 - Install eave boards 10.03 - Perform roof covering	54.5

## COURSE INFORMATION

<b>COURSE TITLE</b>	Construction Carpentry
<b>LEVEL</b>	BQF Certificate -2
<b>COURSE OBJECTIVE</b>	<p>Upon completion of this training program, the trainees will be able to:</p> <ul style="list-style-type: none"> <li>• Perform wood work;</li> <li>• Construct formwork and scaffolding;</li> <li>• Carry out ceiling, flooring, partition and staircase construction work;</li> <li>• Construct doors, windows and shutters; and</li> <li>• Carry out roof work</li> </ul>
<b>COURSE DESCRIPTION</b>	<p>This curriculum is designed to provide knowledge, skills and right attitude of an individual to be a competent Construction carpenter in accordance with industry standards. This course is based on practical exposure in different areas as required in the real world of work in the industry.</p> <p>Upon completion of the course, graduates will be able to perform wood works, construct formwork, scaffolding, doors, windows, shutters and carry out construction of ceiling, flooring, partition, staircase &amp; roof works.</p> <p>In addition, this course will also prepare the graduates to comply with regulatory and organizational requirements for practicing Occupational Health and Safety procedures.</p>
<b>COURSE DURATION</b>	480 Hours
<b>TRAINER AND TRAINEE RATIO</b>	1:12 (Practical) 1:20 (Theory)
<b>ENTRY REQUIREMENT</b>	Completed class X BLC and PLC graduates of NFE
<b>TVET TRAINER REQUIREMENTS</b>	<ul style="list-style-type: none"> <li>• Must have a minimum qualification of diploma in relevant field with three years of working experience;</li> <li>• Must have undergone Training of Trainers-Technical Instruction and Pedagogy;</li> <li>• Must<sup>1</sup> have at least 5 years job/industry experience</li> </ul>

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<sup>1</sup> Applicable only if institutes hire instructor or guest lecturer from industry

## ASSESSMENT AND CERTIFICATION SYSTEM

<b>ASSESSMENT</b>	<p>Formative assessment for every module and learning outcome will be conducted through assignments, project works, continuous assessment, demonstration of practical skills/observations, oral questioning and written test.</p> <p>Summative assessment after completion of each national certificate level will be conducted by TVET Quality Council, Bhutan Qualifications and professional certification authority, MoESD as per the National Competency Standards and Guidelines for National Assessment and Certification System, provided the course is accredited with TVET Quality Council, Bhutan Qualifications and professional certification authority, MoESD.</p>
<b>CERTIFICATION</b>	<p>On successful completion of every module, the institute will award a certificate of achievement to the trainees. The TVET Quality Council, Bhutan Qualifications and Professional Certification Authority, Ministry of Education and Skills Development will award a National Certificate to the trainees upon the successful completion of NC level assessment.</p>
<b>COURSE DELIVERY</b>	<ol style="list-style-type: none"> <li>1. Modular</li> <li>2. Demonstration Lecture</li> <li>3. Discussion with problem-based learning</li> <li>4. Industrial training/attachment</li> <li>5. Project work</li> </ol>
<b>RESOURCES</b>	<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Plane blade, adhesive, sand paper, machine oil, timber, coolant/water, chisel blade, Markin cloth, grease, petrol, coolant, engine oil, drawing, pen, paper, pencil, sandpaper, timber, bamboo, props, stones, backing pad, stickers and CGI sheets, nut &amp; bolt, mason thread, gauge finishing nail, coconut rope, planks, PGI sheet, door and window frame, props, anchor, nail/screw, hardware fittings, wooden frame, wooden shutter, wire nail, pegs, wood beads, kerosene, glass panel pin, wooden screws, , sprit level, plumb bob, glass cutter with diamond tip, pincer, insulation materials, staple gun pins, cladding materials, double-glazed glass, sealant, MS clamps, wooden battens, fabricated wooden truss, erected roof truss, timber purlin, twisted strap, eave board, gutter, gutter holder, screw with washers, GI ridge, screws and panel pin</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Try square, sharpening stone, handsaw, nail gun, knife, hammer, chisel, saw setting pliers, triangle file, sharpening stone, bench hook, container, spanner set, socket wrench, Allen key set, screwdriver set, plane, calculator, measuring tape, sheet cutter</li> </ul>

(snips), wire brush, cross-cut saw, clamp, drill bit set, rip saw, marking gauge, sanding block, mallet, racking bar (Claw bar), spade, centre punch snip, mini-chisel (Seychu) and levelling staff

**Equipment**

- Grinding machine, circular saw, grinding machine, sanding machine (Angle grinder), jigsaw machine, router machine, power chain saw, miter compound machine, planer machine, spindle moulder machine, cordless drilling machine, thicknesser machine, wood lathe machine, dumpy level, temperature and humidity logger, computer, printer, air compressor, work bench and bench vice

**PPE**

- Safety gloves, safety shoes, safety helmet, safety goggles, apron, ear muff and dust mask

**Learning Materials**

- Competency Based Learning Materials (CBLM)
- Bhutan Schedule of Rates (BSR)
- Reference books
- Hand-outs
- Audio visuals

**Infrastructure and training facilities**

- **Theory classroom size:** Minimum of 1.5 m<sup>2</sup> per trainee;
- **Practical Workshop size:** Minimum of 3 m<sup>2</sup> per trainee. Variables must be considered depending upon type of skills being taught and the number of trainees participating at a time.

**PPE**

- Safety gloves, safety shoes, safety helmet, safety goggles, apron, ear muff and dust mask

**Learning Materials**

- Competency Based Learning Materials (CBLM)
- Bhutan Schedule of Rates (BSR)
- Reference books
- Hand-outs
- Audio visuals

**Infrastructure and training facilities**

- **Theory classroom size:** Minimum of 1.5 m<sup>2</sup> per trainee;  
**Practical Workshop size:** Minimum of 3 m<sup>2</sup> per trainee. Variables must be considered depending upon type of skills being taught and the number of trainees participating at a time.

## MODULE INFORMATION

### MODULE I - PERFORMING WOOD WORK

Module Information	
<b>Occupation</b>	Construction Carpenter
<b>Competency Area</b>	Perform wood work
<b>Module Title</b>	Performing wood work
<b>Module Code</b>	7115-L2-M1
<b>Module Description</b>	This module is structured to provide learners with the knowledge, skills and right attitude required to maintain hand tools, power tools & equipment, carry out basic wood work and perform wood joints
<b>Nominal Duration</b>	75.5 Hours
<b>Certificate Level</b>	BQF Certificate Level-2
<b>Pre-requisite</b>	Class X passed
<b>Learning Outcome</b>	<ol style="list-style-type: none"><li>1. Maintain hand tools;</li><li>2. Maintain power tools and equipment;</li><li>3. Carry out basic wood work; and</li><li>4. Perform wood joints</li></ol>



<b>Learning Outcome 1: Maintain hand tools</b>			
<b>Module Code</b>	7115-L2-M1		
<b>Duration</b>	Theory: 6 hours	Practical: 10 hours	Total: 16 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>Plane/Chisel blade is sharpened as per the job requirement following standard procedure</li> <li>Saw blade is sharpened as per the job requirement following standard procedure</li> <li>Knife is sharpened as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>A1.00 Introductory Knowledge</b>		
	<ul style="list-style-type: none"> <li>Roles and responsibilities of Construction Carpenter</li> <li>Scopes and trends of construction carpenter</li> <li>Sustainability in wood-based industry</li> <li>Concept of circular economy</li> <li>Method of reusing wood waste</li> </ul>		
	<b>A1.01 Sharpening plane/chisel blade</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Types of blades</li> <li>Purpose of soaking sharpening stone in water</li> </ul>	<ul style="list-style-type: none"> <li>Sharpening angle range</li> <li>Purpose of applying oil on the blade</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Blade handling skills</li> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>Having sense of ownership and accountability</li> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>A1.02 Sharpening saw blade</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Types of saw</li> <li>Function of handsaw</li> </ul>	<ul style="list-style-type: none"> <li>Types of saw setting tool</li> </ul>	
	<i>Skills</i>		
<ul style="list-style-type: none"> <li>Handling saw setting tools</li> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> </ul>		

	<b><i>Attitude, safety and environmental concern</i></b>	
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Having sense of ownership and accountability</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
	<b>A1.03 Sharpening Knife</b>	
	<b><i>Knowledge</i></b>	
	<ul style="list-style-type: none"> <li>• Types of knife</li> </ul>	
	<b><i>Skills</i></b>	
	<ul style="list-style-type: none"> <li>• Knife handling skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
	<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Having sense of ownership and accountability</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books and Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library and Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Plane blade, machine oil, coolant/water, chisel blade and Markin cloth</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Sharpening stone, handsaw, knife, hammer, chisel, saw setting pliers, triangle file, bench hook, container, screwdriver set and plane</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Bench vice</li> </ul>	

	<p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, working dress, safety goggles, apron, ear muff and dust mask</li> </ul>
<b>Instructional Methodologies</b>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial visit/training</li> <li>• Guided practice</li> <li>• Group practice with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<b>Method of Assessment</b>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical observation</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 2: Maintain power tools and equipment</b>			
<b>Module Code</b>	7115-L2-M1		
<b>Duration</b>	Theory: 6 hours	Practical: 18 hours	Total: 24 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Portable circular saw is maintained as per the job requirement following standard procedure</li> <li>• Portable router machine is maintained as per the job requirement following standard procedure</li> <li>• Portable planer machine is maintained as per the job requirement following standard procedure</li> <li>• Jigsaw machine is maintained as per the job requirement following standard procedure</li> <li>• Drill machine is maintained as per the job requirement following standard procedure</li> <li>• Sanding machine is maintained as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>A2.01 Servicing portable circular saw</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Introduction to power tools</li> <li>• Operating principle of portable circular saw</li> </ul>	<ul style="list-style-type: none"> <li>• Interval of servicing portable circular saw</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Circular machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> <li>• Ensuring to change the blades and consumables as per its product manual</li> </ul>	
	<b>A2.02 Servicing portable router machine</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Operating principle of portable router machine</li> </ul>	<ul style="list-style-type: none"> <li>• Interval of servicing portable router machine</li> </ul>	
<i>Skills</i>			
<ul style="list-style-type: none"> <li>• Router machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>		

<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>A2.03 Servicing portable planer machine</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Operating principle of portable planer machine</li> </ul>	<ul style="list-style-type: none"> <li>• Interval of servicing portable planer machine</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Planer machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>A2.04 Servicing jigsaw machine</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Operating principle of jigsaw machine</li> </ul>	<ul style="list-style-type: none"> <li>• Interval of servicing jigsaw machine</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Jigsaw machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> </ul>

<ul style="list-style-type: none"> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>A2.05 Servicing drill machine</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Operating principle of drill machine</li> </ul>	<ul style="list-style-type: none"> <li>• Interval of servicing drill machine</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Drill machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> <li>• Ensuring to follow manuals for safe changing of drill bits</li> </ul>
<b>A2.06 Servicing sanding machine</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Operating principle of sanding machine</li> </ul>	<ul style="list-style-type: none"> <li>• Interval of servicing sanding machine</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Track saw machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>

<p><b>Learning Conditions</b></p>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• Information Technology (IT) lab</li> <li>• Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Blade, grease, carbon, belt, engine oil and Markin cloth</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Spanner set, socket wrench, Allen key set and screw driver set</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Circular saw, router machine, planer machine, Sander machine, jigsaw machine and drill machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, working dress, safety goggles, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial visit/training</li> <li>• Guided practice</li> <li>• Group practice with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical observation</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 3: Carry out basic wood work</b>			
<b>Module Code</b>	7115-L2-M1		
<b>Duration</b>	Theory: 3 hours	Practical: 11 hours	Total: 14 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Workpiece is planed as per the job requirement following standard procedure</li> <li>• Sawing is performed as per the job requirement following standard procedure</li> <li>• Workpiece is chiseled as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>A3.01 Planning workpiece</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Estimation and costing</li> <li>• Types of seasoning</li> <li>• Type of planes</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of planing</li> <li>• Types of marking tool</li> <li>• Grains and textures of wood</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Interpreting Bhutan Schedule of Rates (BSR)</li> <li>• Interpreting Labour and Material Coefficients (LMC)</li> <li>• Using plane</li> <li>• Setting plane</li> </ul>	<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Numeracy skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> <li>• Ensuring proper setting of plane blade</li> </ul>	
	<b>A3.02 performing sawing</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Types of saw</li> </ul>	<ul style="list-style-type: none"> <li>• Methods of sawing</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Using handsaw</li> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> </ul>		



	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
	<b>A3.03 Chiseling workpiece</b>	
	<i>Knowledge</i>	
	<ul style="list-style-type: none"> <li>• Purpose of chiselling</li> <li>• Types of chisel</li> </ul>	<ul style="list-style-type: none"> <li>• Function of chisel</li> </ul>
	<i>Skills</i>	
	<ul style="list-style-type: none"> <li>• Using chisel</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
	<i>Attitude, safety and environmental concern</i>	
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Drawing, pen, paper, pencil, and timber</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Calculator, measuring tape, hand saw, clamp, plane, try square, marking gauge, screwdriver set, mallet and chisel set</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Bench vice and work bench</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, working dress, safety goggles, apron, ear muff and dust mask</li> </ul>	

<b>Instructional Methodologies</b>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial visit/training</li> <li>• Guided practice</li> <li>• Group practice with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<b>Method of Assessment</b>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical observation</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 4: Perform wood joints</b>			
<b>Module Code</b>	7115-L2-M1		
<b>Duration</b>	Theory: 3.5 hours	Practical: 18 hours	Total: 21.5 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Butt with dowel joint is made as per the job requirement following standard procedure</li> <li>• Tenon and mortise joints are made as per the job requirement following standard procedure</li> <li>• Bridle joint is made as per the job requirement following standard procedure</li> <li>• Haunch joint is made as per the job requirement following standard procedure</li> <li>• Tongue and groove joint is made as per the job requirement following standard procedure</li> <li>• Scarf joint is made as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>A4.01 Making butt with dowel joint</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Types of wood joint</li> <li>• Types of butt joint</li> </ul>	<ul style="list-style-type: none"> <li>• Application of butt with dowel joint</li> <li>• Types of fasteners used</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>A4.02 Making tenon and mortise joint</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Types of tenon &amp; mortise joint</li> </ul>	<ul style="list-style-type: none"> <li>• Application of tenon &amp; mortise joint</li> </ul>	
	<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>		

<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>A4.03 Making bridle joint</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Types of bridle joint</li> </ul>	<ul style="list-style-type: none"> <li>• Application of bridle joint</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>A4.04 Making haunch joint</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Types of haunch joint</li> </ul>	<ul style="list-style-type: none"> <li>• Application of haunch joint</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>

<b>A4.05 Making tongue and groove joint</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Types of tongue and groove joint</li> </ul>	<ul style="list-style-type: none"> <li>• Application of tongue and groove joint</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>A4.06 Making scarf joint</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Types of scarf joint</li> </ul>	<ul style="list-style-type: none"> <li>• Application of scarf joint</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>

<p><b>Learning Conditions</b></p>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Pen &amp; paper, timber, drawing, dowels, wedges, screws, nuts &amp; bolts, adhesive and pencil</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Try square, measuring tape, hammer, marking gauge, plane, handsaw, chisel and mallet</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Drilling machine, router machine and work bench</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, working dress, safety goggles, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial visit/training</li> <li>• Guided practice</li> <li>• Group practice with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical observation</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

## MODULE 2 - CONSTRUCTING FORMWORK AND SCAFFOLDING

<b>Module Information</b>	
<b>Occupation</b>	Construction Carpenter
<b>Competency Area</b>	Construct formwork and scaffolding
<b>Module Title</b>	Constructing formwork and scaffolding
<b>Module Code</b>	7115-L2-M2
<b>Module Description</b>	This module is structured to provide learners the knowledge, skills and right attitude required to prepare formwork & scaffolding components and construct formwork & scaffolding
<b>Nominal Duration</b>	77.5 Hours
<b>Certificate Level</b>	BQF Certificate Level-2
<b>Pre-requisite</b>	Completed 7115-L2-M1
<b>Learning Outcome</b>	<ol style="list-style-type: none"> <li>1. Prepare formwork and scaffolding components</li> <li>2. Construct formwork</li> <li>3. Construct scaffolding</li> </ol>

<b>Learning Outcome 1: Prepare formwork and scaffolding components</b>			
<b>Module Code</b>	7115-L2-M2		
<b>Duration</b>	Theory: 7 hours	Practical: 54 hours	Total: 61 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Footing/beam/column/slab formwork is made as per the job requirement following standard procedure</li> <li>• Cornices formwork is made as per the job requirement following standard procedure</li> <li>• Staircase formwork is made as per the job requirement following standard procedure</li> <li>• Bamboo/timber scaffolding is prepared as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>B1.01 Making footing/beam/column formwork</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Types of formworks</li> <li>• Purpose of formwork</li> </ul>	<ul style="list-style-type: none"> <li>• Type of formwork materials</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>B1.02 Making cornices formwork</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Origin of cornices</li> <li>• Types of cornice</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of cornice</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Jigsaw machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> </ul>	



	<ul style="list-style-type: none"> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>B1.03 Making staircase formwork</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Type of staircases</li> </ul>	<ul style="list-style-type: none"> <li>• Components of staircase</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Jigsaw machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>B1.04 Preparing bamboo/timber scaffolding</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Definition of scaffolding</li> <li>• Types of scaffolding</li> <li>• Types of knots</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of scaffolding</li> <li>• Components of scaffolding</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Knot tying skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	

<p><b>Learning Conditions</b></p>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Pen &amp; paper, pencil, timber, bamboo, nails, nut &amp; bolt, mason thread, coconut rope, planks, drawings, aluminium sheet, PGI sheet, ply board, steel plates and panel pin</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Plane, chisel, handsaw, try square, sheet cutter (snips), clamp, claw hammer, measuring tape, plumb bob and marking gauge</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Jigsaw machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, working dress, safety goggles, apron, ear muff, safety harness, and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial visits/training</li> <li>• Guided practice</li> <li>• Group practice with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical observation</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 2: Construct formwork</b>			
<b>Module Code</b>	7115-L2-M2		
<b>Duration</b>	Theory:1.5 hours	Practical: 6 hours	Total: 7.5 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>Formwork is assembled as per the job requirement following standard procedure</li> <li>Formwork is fixed as per the job requirement following standard procedure</li> <li>Formwork is removed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>B2.01 Assembling formwork</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Importance of formwork stability</li> </ul>		
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>B2.02 Fixing formwork</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Importance of strengthening the formworks</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Interpreting drawing</li> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>			
<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>		

	<b>B2.03 Removing formwork</b>	
	<i>Knowledge</i>	
	<ul style="list-style-type: none"> <li>Concrete setting period</li> </ul>	
	<i>Skills</i>	
	<ul style="list-style-type: none"> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> </ul>
	<i>Attitude, safety and environmental concern</i>	
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>Competency Based Learning Materials (CBLM)</li> <li>Hand-outs</li> <li>Audio Visuals</li> <li>Reference books and Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>Classroom with adequate facilities</li> <li>E-Library and Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>Timber, ply board, nuts &amp; bolts and nails</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>Planes, chisels, handsaw, try square, hammer, crow bar, measuring tape, spirit level, plumb bob and marking gauge</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>Safety gloves, safety shoes, safety helmet, working dress, safety harness, safety goggles, apron, ear muff and dust mask</li> </ul>	
<b>Instructional Methodologies</b>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>Lecture and Guided practice</li> <li>Interactive discussion and Demonstration</li> <li>Industrial visits/training</li> <li>Group practice with project-based learning</li> <li>Individual practice with problem-based learning</li> </ul>	
<b>Method of Assessment</b>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>Practical observation and Oral/viva-voce</li> <li>Written test</li> <li>Assignment</li> <li>Project work</li> <li>Rubrics</li> </ul>	

<b>Learning Outcome 3: Construct scaffolding</b>			
<b>Module Code</b>	7115-L2-M2		
<b>Duration</b>	Theory: 3 hours	Practical: 6 hours	Total: 9 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>Bamboo/wooden scaffolding is erected as per the job requirement following standard procedure</li> <li>Scaffolding is disassembled as per the job requirement following standard procedure</li> <li>Scaffolding components are stored as per the job requirement following standard procedure</li> </ul>		
<b>Contents</b>	<b>B3.01 Erecting bamboo/wooden scaffolding</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Safety precautions of scaffolding</li> </ul>	<ul style="list-style-type: none"> <li>Advantages and disadvantages of scaffolding</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Interpreting drawing</li> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>B3.02 Disassembling scaffolding</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Process of disassembling scaffolding</li> </ul>	<ul style="list-style-type: none"> <li></li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>	

	<p><b>B3.03 Storing scaffolding components</b></p> <p style="text-align: center;"><i>Knowledge</i></p> <ul style="list-style-type: none"> <li>• Purpose of storing components</li> </ul> <p style="text-align: center;"><i>Skills</i></p> <table border="1" style="width: 100%;"> <tr> <td> <ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Observation skills</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul> </td> </tr> </table> <p style="text-align: center;"><i>Attitude, safety and environmental concern</i></p> <table border="1" style="width: 100%;"> <tr> <td> <ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul> </td> <td> <ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul> </td> </tr> </table>	<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>				
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>				
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and Infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Timber, planks, coconut rope, bamboo and nails</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Handsaw, knife, spirit level, hammer, measuring tape and crowbar</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, working dress, safety goggles, safety harness, dust mask, ear muff and apron</li> </ul>				
<b>Instructional Methodologies</b>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture and Demonstration</li> <li>• Interactive discussion</li> <li>• Industrial visits/training and Guided practice</li> <li>• Group practice with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>				
<b>Method of Assessment</b>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical observation and Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>				

## MODULE 3 - CARRYING OUT CEILING, FLOORING, PARTITION AND STAIRCASE CONSTRUCTION WORK

<b>Module Information</b>	
<b>Occupation</b>	Construction carpenter
<b>Competency Area</b>	Carry out ceiling, flooring, partition and staircase construction work
<b>Module Title</b>	Carrying out ceiling, flooring, partition and staircase construction work
<b>Module Code</b>	7115-L2-M3
<b>Module Description</b>	This module is structured to provide learners with the knowledge, skills and right attitude required to carry out construction of ceiling, flooring, partition and staircase works
<b>Nominal Duration</b>	139 Hours
<b>Certificate Level</b>	BQF Certificate Level 2
<b>Pre-requisite</b>	Completed Module 7115-L2-M2
<b>Learning Outcome</b>	<ol style="list-style-type: none"> <li>1. Perform flooring work</li> <li>2. Perform partition work</li> <li>3. Perform ceiling work</li> <li>4. Perform staircase work</li> </ol>

<b>Learning Outcome 1: Perform flooring work</b>			
<b>Module Code</b>	7115-L2-M3		
<b>Duration</b>	Theory: 7 hours	Practical: 26 hours	Total: 33 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Floor joist and board are prepared as per the job requirement following standard procedure</li> <li>• Floor joist is fixed as per the job requirement following standard procedure</li> <li>• Floor boards are fixed as per the job requirement following standard procedure</li> <li>• Floor skirting are prepared as per the job requirement following standard procedure</li> <li>• Floor skirting are fixed as per the job requirement following standard procedure</li> <li>• Finishing is performed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>C1.01 Preparing floor joist and boards</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Types of floors and its applications</li> <li>• Types of flooring materials</li> <li>• Types of flooring joist and its sizes</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of joist</li> <li>• Components of joist</li> <li>• Types of floor board joint</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>C1.02 Fixing floor joist</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Purpose of maintaining uniform spacing</li> </ul>	<ul style="list-style-type: none"> <li>•</li> </ul>	
<i>Skills</i>			
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Levelling skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>		



<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C1.03 Fixing floor boards</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Importance of levelling</li> </ul>	<ul style="list-style-type: none"> <li>• </li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Levelling skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C1.04 Preparing floor skirting</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Definition of skirting</li> <li>• Types of skirting</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of skirting</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>

	<ul style="list-style-type: none"> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	
<b>C1.05 Fixing floor skirting</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Types of joints used in floor skirting</li> </ul>		
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Levelling skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>C1.06 Performing finishing work</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Types of finishes</li> <li>• Types of varnish and paints</li> </ul>	<ul style="list-style-type: none"> <li>• Mix ratio for polish</li> <li>• Type of admixtures and additives</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Spray machine operating skills</li> <li>• Sanding machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	

<p><b>Learning Conditions</b></p>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Timber, adhesive, nails/screw, wood filler, wooden dowel, sand paper, mason thread, drill bits, polish/paints and pencil</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Plane, chisel, handsaw, try square, screw driver set, marking gauge, mallet, hammer, spirit level/water level and measuring tape</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Planer machine, router machine, spindle moulder machine, circular saw machine, nail-gun machine, drilling machine, sanding machine and spray machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, working dress, safety harness, safety goggles, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 2: Perform partition work</b>			
<b>Module Code</b>	7115-L2-M3		
<b>Duration</b>	Theory: 7 hours	Practical: 33 hours	Total: 40 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>Partition frame/board/panel is fixed as per the job requirement following standard procedure</li> <li>Partition frame is fixed as per the job requirement following standard procedure</li> <li>Partition board is fixed as per the job requirement following standard procedure</li> <li>Wall panelling is fixed as per the job requirement following standard procedure</li> <li>Panelling bead is prepared as per the job requirement following standard procedure</li> <li>Panelling bead is fixed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>C2.01 Preparing partition frame/board/panel</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Types of timber partition</li> </ul>	<ul style="list-style-type: none"> <li>Components of timber partition</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Wood working machine operating skills</li> <li>Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> <li>Observation skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>Having sense of ownership and accountability</li> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>C2.02 Fixing partition frame</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Fasteners used for fixing timber partition frame</li> </ul>	<ul style="list-style-type: none"> <li>Types of insulations and its applications</li> </ul>	
	<i>Skills</i>		
<ul style="list-style-type: none"> <li>Wood working machine operating skills</li> <li>Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> <li>Observation skills</li> </ul>		
<i>Attitude, safety and environmental concern</i>			
<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> </ul>	<ul style="list-style-type: none"> <li>Having sense of ownership and accountability</li> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> </ul>		

<ul style="list-style-type: none"> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C2.03 Fixing partition board</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Types of fillers</li> </ul>	
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Having sense of ownership and accountability</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C2.04 Fixing wall paneling</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Purpose of maintaining alignment of panels</li> </ul>	<ul style="list-style-type: none"> <li>• Grain and direction for panel placement</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Coaching skills</li> <li>• Planning skills</li> <li>• Analytical skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Being time conscious</li> <li>• Being team player</li> <li>• Being efficient in using resources</li> <li>• Having integrity and work ethics</li> </ul>	<ul style="list-style-type: none"> <li>• Proper handling and storage of materials, tools and equipment</li> <li>• Ensuring to follow OHS rules and regulations</li> <li>• Ensuring to maintain 5S principle</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring proper disposal of waste</li> </ul>
<b>C2.05 Preparing paneling beads</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Types of beads</li> </ul>	<ul style="list-style-type: none"> <li>• Types of materials for beads</li> </ul>

	<b>Skills</b>	
	<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>
	<b>Attitude, safety and environmental concern</b>	
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Having sense of ownership and accountability</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
	<b>C2.06 Fixing paneling beads</b>	
	<b>Knowledge</b>	
	<ul style="list-style-type: none"> <li>• Process of fixing panelling beads</li> </ul>	
	<b>Skills</b>	
	<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>
	<b>Attitude, safety and environmental concern</b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Having sense of ownership and accountability</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul>	

	<p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Timber, nails, planks, panel pin, gauge finishing nail and pencil</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Plane, handsaw, try square, nail gun, spirit level, screwdriver set, hammer and measuring tape</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Thicknesser machine, air compressor, cordless drilling machine, spindle moulder, circular saw and workbench</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, safety goggles, working dress, safety harness, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 3: Perform ceiling work</b>			
<b>Module Code</b>	7115-L2-M3		
<b>Duration</b>	Theory: 7 hours	Practical: 26 hours	Total: 33 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Ceiling joist and board is prepared as per the job requirement following standard procedure</li> <li>• Ceiling joist is fixed as per the job requirement following standard procedure</li> <li>• Ceiling board is fixed as per the job requirement following standard procedure</li> <li>• Ceiling bead is made as per the job requirement following standard procedure</li> <li>• Ceiling bead is fixed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>C3.01 Preparing ceiling joist and board</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Types of ceiling and its applications</li> <li>• Types of ceiling materials</li> <li>• Types of ceiling joist and its sizes</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of joist</li> <li>• Components of joist and its application</li> <li>• Importance of ceiling hatch</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>C3.02 Fixing ceiling joist</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Importance of maintaining equal gap</li> </ul>		
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>			
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> </ul>		



<ul style="list-style-type: none"> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C3.03 Fixing ceiling boards</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Types of ceiling board</li> </ul>	
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C3.04 Making ceiling beads</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Purpose of providing beads</li> </ul>	<ul style="list-style-type: none"> <li>• Types of bead</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C3.05 Fixing ceiling beads</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Types of ceiling bead joints</li> </ul>	
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>

	<b><i>Attitude, safety and environmental concern</i></b>	
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books and Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library and Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Timber, nails/screws, sand paper, bitumen sheet, gauge finishing nail and pencil</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Planes, chisels, handsaw, hammer, nail gun, try square, screwdriver set and measuring tape</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Circular saw, router machine, air compressor, thicknesser machine, spindle moulder machine, cordless drilling machine, scaffolding and workbench</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, safety goggles, working dress, safety harness, apron, ear muff and dust mask</li> </ul>	
<b>Instructional Methodologies</b>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture and Demonstration</li> <li>• Interactive discussion</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>	
<b>Method of Assessment</b>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce and Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>	

<b>Learning Outcome 4: Perform staircase work</b>			
<b>Module Code</b>	7115-L2-M3		
<b>Duration</b>	Theory: 6 hours	Practical: 24 hours	Total: 30 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>Tread and riser for wooden staircase are made as per the job requirement following standard procedure</li> <li>Stringer is made as per the job requirement following standard procedure</li> <li>Newel post is made as per the job requirement following standard procedure</li> <li>Baluster is made as per the job requirement following standard procedure</li> <li>Hand railing is made as per the job requirement following standard procedure</li> <li>Staircase components are assembled as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>C4.01 Making tread and riser for staircase</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Definition of staircase</li> <li>Types of staircase</li> <li>Components of staircase</li> </ul>	<ul style="list-style-type: none"> <li>Mathematical calculation of staircase Standard Dimensions</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Wood working machine operating skills</li> <li>Communication skills</li> <li>Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> <li>Numeracy skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Being a team player</li> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>C4.02 Making stringer</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Definition of stringer</li> <li>Types of stringer</li> </ul>	<ul style="list-style-type: none"> <li>Purpose of stringer</li> <li>Standard Dimensions</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Wood working machine operating skills</li> <li>Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>Analytical skills</li> <li>Planning skills</li> <li>Observation skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> </ul>	<ul style="list-style-type: none"> <li>Being a team player</li> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> </ul>		

	<ul style="list-style-type: none"> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C4.03 Making newel post</b>		
<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Definition of newel post</li> <li>• Types of newel post</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of newel post</li> <li>• Standard Dimensions</li> </ul>
<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>
<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C4.04 Making baluster</b>		
<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Definition of baluster</li> <li>• Type of balusters</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of baluster</li> <li>• Standard Dimensions</li> </ul>
<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>C4.05 Making hand railing</b>		
<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Definition of handrail</li> <li>• Type of handrails</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of handrail</li> </ul>

	<b>Skills</b>	
	<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> <li>• Observation skills</li> </ul>
	<b>Attitude, safety and environmental concern</b>	
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
	<b>C4.06 Assembling staircase components</b>	
	<b>Knowledge</b>	
	<ul style="list-style-type: none"> <li>• Location of staircase components</li> </ul>	
	<b>Skills</b>	
	<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
	<b>Attitude, safety and environmental concern</b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>Learning Conditions</b>	<b>Learning Materials</b>	
	<ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books and Manuals</li> </ul>	
	<b>Learning Facilities and infrastructure</b>	
	<ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul>	
	<b>Materials</b>	
<ul style="list-style-type: none"> <li>• Timber, nails/screws, adhesive and pencil</li> </ul>		
<b>Tools</b>		
<ul style="list-style-type: none"> <li>• Plane, handsaw, try square, spirit level, marking gauge, mallet, chisel, screwdriver set, hammer, spirit level and measuring tape</li> </ul>		

	<p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Drilling machine, wood lathe machine, spindle moulder machine, workbench, circular saw, planer machine and thicknesser machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, safety goggles, working dress, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

## MODULE 4 - CONSTRUCTING DOORS, WINDOWS AND SHUTTERS

<b>Module Information</b>	
<b>Occupation</b>	Construction carpenter
<b>Competency Area</b>	Construct doors, windows and shutters
<b>Module Title</b>	Constructing doors, windows and shutters
<b>Module Code</b>	7115-L2-M4
<b>Module Description</b>	This module is structured to provide learners with the knowledge, skills and right attitude required to prepare doors, windows & shutter components, assemble door & window frames & shutters and install door, window and shutter
<b>Nominal Duration</b>	133.5 Hours
<b>Certificate Level</b>	BQF Certificate Level 2
<b>Pre-requisite</b>	Completed Module 7115-L2-M3
<b>Learning Outcome</b>	<ol style="list-style-type: none"> <li>1. Prepare doors, windows and shutter components</li> <li>2. Assemble door &amp; window frames and shutters</li> <li>3. Install door, window and shutter</li> <li>4. Carry out UPVC work</li> </ol>

<b>Learning Outcome 1: Prepare doors, windows and shutter components</b>			
<b>Module Code</b>	7115-L2-M4		
<b>Duration</b>	Theory: 10 hours	Practical: 81 hours	Total: 91 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>Window frame is made as per the job requirement following standard procedure</li> <li>Kachung is made as per the job requirement following standard procedure</li> <li>Zing/Horzhu is made as per the job requirement following standard procedure</li> <li>Tshigen and Jughshing are made as per the job requirement following standard procedure</li> <li>Dhung is made as per the job requirement following standard procedure</li> <li>Pem is made as per the job requirement following standard procedure</li> <li>Window shutter is prepared as per the job requirement following standard procedure</li> <li>Door frame is prepared as per the job requirement following standard procedure</li> <li>Door shutter is made as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>D1.01 Making window frame</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Introduction to standards and specification</li> <li>Components of window frame</li> </ul>	<ul style="list-style-type: none"> <li>Type of joints used in window frame</li> <li>Types of window</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Interpreting drawing</li> <li>Wood working machine operating skills</li> <li>Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>Observation skills</li> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>D1.02 Making Kachu/Kachung</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Definition of kachung</li> <li>Significance of kachung</li> </ul>	<ul style="list-style-type: none"> <li>Purpose of Kachung</li> <li>Types of Kachung</li> </ul>	
<i>Skills</i>			
<ul style="list-style-type: none"> <li>Interpreting drawing</li> <li>Wood working machine operating skills</li> <li>Using Seychu (mini-chisel)</li> </ul>	<ul style="list-style-type: none"> <li>Communication skills</li> <li>Observation skills</li> <li>Analytical skills</li> <li>Planning skills</li> </ul>		



<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>D1.03 Making Zing/Horzhu</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Purpose of Zing</li> </ul>	
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>D1.04 Making Tshegen and Jughshing</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Significance of Tshegen and Jugshing</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of Tshegen and Jughshing</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> </ul>

	<ul style="list-style-type: none"> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>D1.05 Making Dhung</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Sequential placement (Thobthang) of Dhung</li> </ul>	<ul style="list-style-type: none"> <li>• Specification of Dhung</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>D1.06 Making Pem</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Sequential placement (Thobthang) of Pem</li> </ul>	<ul style="list-style-type: none"> <li>• Specification of Pem</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>D1.07 Preparing window shutter</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Types of window shutter</li> <li>• Types of joints used</li> <li>• Purpose of window shutter</li> </ul>	<ul style="list-style-type: none"> <li>• Types of window movement</li> <li>• Types of hardware fittings</li> </ul>	

<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>D1.08 Preparing door frame</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Components of door frame</li> </ul>	<ul style="list-style-type: none"> <li>• Type of joints used in door frame</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>D1.09 Making door shutter</b>	
<b><i>Knowledge</i></b>	
<ul style="list-style-type: none"> <li>• Types of doors</li> <li>• Components of door shutter</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of door shutter</li> <li>• Types of door shutter movement</li> </ul>
<b><i>Skills</i></b>	
<ul style="list-style-type: none"> <li>• Wood working machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<b><i>Attitude, safety and environmental concern</i></b>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> </ul>

	<ul style="list-style-type: none"> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Timber, abrasive, adhesive, nails, water proof ply board, particle board, veneer, and pencil</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Hand plane, chisel, clamp, measuring tape, try square, marking gauge, mini-chisel (Seychu), knife, handsaw, screwdriver set, plier and hammer</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Circular saw, spindle moulder machine, angle grinder, router machine, workbench, thicknesser machine, drill machine and planer machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, safety goggles, working dress, safety harness, apron, ear muff and dust mask</li> </ul>	
<b>Instructional Methodologies</b>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture and Demonstration</li> <li>• Interactive discussion</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>	
<b>Method of Assessment</b>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>	

<b>Learning Outcome 2: Assemble door &amp; window frames and shutters</b>			
<b>Module Code</b>	7115-L2-M4		
<b>Duration</b>	Theory: 1.5 hours	Practical: 6 hours	Total: 7.5 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Door frame is assembled as per the job requirement following standard procedure</li> <li>• Window frame is assembled as per the job requirement following standard procedure</li> <li>• Door and window shutters are assembled as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>D2.01 Assembling door frame</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Location of door frame</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of checking alignment of door</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Woodworking machine operating skills</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>D2.02 Assembling window frame</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Location of window frame</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of checking alignment of window</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Woodworking machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> </ul>		

	<ul style="list-style-type: none"> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
	<b>D2.03 Assembling door and window shutter</b>	
	<i>Knowledge</i>	
	<ul style="list-style-type: none"> <li>• Components of door and window shutter</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of checking alignment of door and window shutters</li> </ul>
	<i>Skills</i>	
	<ul style="list-style-type: none"> <li>• Woodworking machine operating skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
	<i>Attitude, safety and environmental concern</i>	
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library and Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Timber, nails, adhesive, dowels, gasket, seals, sandpaper, sanding disc, wood filler and pencil</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Hand plane, chisel, handsaw, hammer, measuring tape, clamp, marking gauge and try square</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Drilling machine and sanding machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, safety goggles, working dress, safety harness, apron, ear muff and dust mask</li> </ul>	

<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 3: Install door, window and shutter</b>			
<b>Module Code</b>	7115-L2-M4		
<b>Duration</b>	Theory: 3 hours	Practical: 13 hours	Total: 16 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Door and window frame are erected as per the job requirement following standard procedure</li> <li>• Door and window shutters are fixed as per the job requirement following standard procedure</li> <li>• Hardware fitting are fixed as per the job requirement following standard procedure</li> <li>• Glass is fixed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>D3.01 Erecting door and window frame</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Types of anchor</li> </ul>		
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Using spirit level</li> <li>• Using plumb bob</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>D3.02 Fixing door and window shutters</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Type and size of hinges</li> <li>• Methods of fixing hinges</li> </ul>	<ul style="list-style-type: none"> <li>• Types of channels &amp; rollers used in sliding doors and windows</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Woodworking machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>			
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>		



	<ul style="list-style-type: none"> <li>• Having sense of ownership and accountability</li> </ul>	
<b>D3.03 Fixing hardware fittings</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Type of hardware fittings</li> </ul>		<ul style="list-style-type: none"> <li>• Location of hardware fittings</li> </ul>
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Using drilling machine</li> <li>• Communication skills</li> </ul>		<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>		<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>D3.04 Fixing glass</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Types of glass and its application</li> <li>• Sizes of glass</li> <li>• Purpose of applying kerosene while cutting glass</li> </ul>		<ul style="list-style-type: none"> <li>• Types of glass cutter</li> <li>• Types of glass holders</li> </ul>
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Glass cutting skills</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>		<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>		<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>

<p><b>Learning Conditions</b></p>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Props, anchor, nail/screw, hinges, door peep hole glass, hydraulic door closer, helical door closer, concealed door closer, door lock, sliding door track system, interlocking system, tower bolt, sliding bolt, wooden frame, wooden shutter, wire nail, wood beads, door stopper, hook &amp; eye, kerosene, Markin cloth, panel pin, door magnet, wooden screws, marker pen and pencil</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Hammer, mason thread, sprit level, plumb bob, glass cutter with diamond tip, wooden scale, sharpening stone, marker, measuring tape, pincer and try square</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Drilling machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, safety goggles, working dress, safety harness, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 4: Carry out uPVC work</b>			
<b>Module Code</b>	7115-L2-M4		
<b>Duration</b>	Theory: 4 hours	Practical: 15 hours	Total: 19 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• uPVC window frame is assembled as per the job requirement following standard procedure</li> <li>• uPVC door and window shutter is assembled as per the job requirement following standard procedure</li> <li>• uPVC window frame is fixed as per the job requirement following standard procedure</li> <li>• uPVC door and window shutter are fixed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>D4.01 Assembling Un-plasticized polyvinyl chloride (uPVC) window frame</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Definition of uPVC</li> <li>• Types of uPVC</li> <li>• Properties of uPVC</li> <li>• Components of uPVC</li> <li>• Sizes of frame and profiles</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of alignment of window frame</li> <li>• Techniques of heat welded jointing</li> <li>• Importance of weep holes</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>D4.02 Assembling UPVC door and window shutter</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Profile and properties of uPVC door and window shutter/sash</li> <li>• Types of joints required</li> <li>• Types of bead required as per the glass</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of alignment of door and window shutter</li> <li>• Locking mechanisms</li> <li>• Importance of fixing gasket and wool pile</li> <li>• Types of fixtures</li> </ul>	
	<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>		
<i>Attitude, safety and environmental concern</i>			
<ul style="list-style-type: none"> <li>• Effective time management</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> </ul>		

	<ul style="list-style-type: none"> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>D4.03 Fixing uPVC door and window frame</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Importance of alignment of window frame</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of anchor</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>D4.04 Fixing uPVC door and window shutter</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Importance of alignment of door and window shutter</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of anchor</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Interpreting drawing</li> <li>• Using cord-less drilling machine</li> <li>• Using circular saw machine</li> </ul>	<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	

<p><b>Learning Conditions</b></p>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books</li> <li>• Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Pen, paper, eraser, glue, white &amp; brown silicon, silicon gun, rubber gasket, wool pile, roller, hinges, handles and reinforcement</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Hand saw, measuring tape and calculator</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• uPVC welding machine, uPVC double head cutting machine, uPVC CNC machine, router machine, uPVC water slotting machine and uPVC bead cutter machine</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety helmet, safety goggles, working dress, safety harness, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

## MODULE 5 - CARRYING OUT ROOF WORK

<b>Module Information</b>	
<b>Occupation</b>	Construction carpenter
<b>Competency Area</b>	Carry out roof work
<b>Module Title</b>	Carrying out roof work
<b>Module Code</b>	7115-L2-M5
<b>Module Description</b>	This module is structured to provide learners with the knowledge, skills and right attitude required to construct roof truss, install eave boards and perform roof covering
<b>Nominal Duration</b>	54.5 Hours
<b>Certificate Level</b>	BQF Certificate Level 2
<b>Pre-requisite</b>	Completed Module 7115-L2-M4
<b>Learning Outcome</b>	<ol style="list-style-type: none"><li>1. Construct roof truss</li><li>2. Install eave boards</li><li>3. Perform roof covering</li></ol>

<b>Learning Outcome 1: Construct roof truss</b>			
<b>Module Code</b>	7115-L2-M5		
<b>Duration</b>	Theory: 5 hours	Practical: 14 hours	Total: 19 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>Roof truss members are made as per the job requirement following standard procedure</li> <li>Roof truss components are assembled as per the job requirement following standard procedure</li> <li>Roof truss is erected as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>E1.01 Making roof truss members</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Types of roof truss</li> <li>Purpose of roof truss</li> <li>Components of roof truss</li> </ul>	<ul style="list-style-type: none"> <li>Types of truss joint</li> <li>Estimation of roof truss members</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Woodworking machine operating skills</li> <li>Interpreting drawing</li> <li>Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>ICT skills</li> <li>Observation skills</li> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> <li>Being a team player</li> <li>Proper handling of tools, materials and equipment</li> <li>Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> <li>Ensure to follow environmental rules and regulations</li> <li>Ensuring to follow OHS rules and regulation</li> <li>Ensuring to keep certain provision for adjustment</li> </ul>	
	<b>E1.02 Assembling roof truss components</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>Importance of maintaining roof slope (height of kingpost)</li> </ul>		
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>Woodworking machine operating skills</li> <li>Interpreting drawing</li> <li>Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>Observation skills</li> <li>Analytical skills</li> <li>Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>Effective time management</li> <li>Being efficient in using resources</li> <li>Being vigilant and patient</li> <li>Having work ethics and integrity</li> </ul>	<ul style="list-style-type: none"> <li>Ensuring appropriate use of PPE</li> <li>Ensuring to follow 5S</li> <li>Ensuring proper disposal of waste</li> </ul>		

	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
	<b>E1.03 Erecting roof truss</b>	
	<i><b>Knowledge</b></i>	
	<ul style="list-style-type: none"> <li>• Roof truss layout</li> <li>• Process of erecting</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of maintaining alignment and spacing</li> </ul>
	<i><b>Skills</b></i>	
	<ul style="list-style-type: none"> <li>• Power chain operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
	<i><b>Attitude, safety and environmental concern</b></i>	
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>Learning Conditions</b>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> <li>• Reference books and Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library and Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• MS clamps, timber, pencil, nut &amp; bolt, nails, mason thread, rope and twisted strap</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Hammer, chisel, racking bar (Claw bar), try square, handsaw, torque wrench, knife and spirit level</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Drilling machine, power chain, chain pulley, crane, fork lift and circular saw</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety harness, safety helmet, working dress, safety harness, safety goggles, apron, ear muff and dust mask</li> </ul>	



<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 2: Install eave boards</b>			
<b>Module Code</b>	7115-L2-M5		
<b>Duration</b>	Theory: 2 hours	Practical: 12 hours	Total: 19 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Wooden eave boards are made as per the job requirement following standard procedure</li> <li>• Eave board is fixed as per the job requirement following standard procedure</li> <li>• Wooden eave ceiling are made as per the job requirement following standard procedure</li> <li>• Eave ceiling is fixed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>E2.01 Making eave boards/fascia</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Definition of eave board</li> <li>• Purpose of eave board</li> </ul>	<ul style="list-style-type: none"> <li>• Types of eave board materials</li> <li>• Dimensions of eave board</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Woodworking machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>E2.02 Fixing eave board/ fascia</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Importance of maintaining alignment and position</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of maintaining slope</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Woodworking machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> </ul>	

	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>E2.03 Making eave ceiling/soffit</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Definition of eave ceiling</li> </ul>	<ul style="list-style-type: none"> <li>• Types of eave ceiling</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Woodworking machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>E2.04 Fixing eave ceiling/soffit</b>		
<i>Knowledge</i>		
<ul style="list-style-type: none"> <li>• Importance of maintaining alignment and position</li> </ul>	<ul style="list-style-type: none"> <li>• Types of fasteners used</li> </ul>	
<i>Skills</i>		
<ul style="list-style-type: none"> <li>• Woodworking machine operating skills</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>		
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
<b>Learning Conditions</b>	<b>Learning Materials</b> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs</li> <li>• Audio Visuals</li> </ul>	

	<ul style="list-style-type: none"> <li>• Reference books and Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library</li> <li>• Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Timber, pencil, sand paper, eave board, nut &amp; bolt, screws and nails</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Handsaw, try square, screwdriver set, hammer, measuring tape, mason thread and racking bar (Claw bar)</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Planer machine, circular saw, drilling machine and work bench</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety harness, safety helmet, working dress, safety harness, safety goggles, apron, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

<b>Learning Outcome 3 - Perform roof covering</b>			
<b>Module Code</b>	7115-L2-M5		
<b>Duration</b>	Theory: 2.5 hours	Practical: 19 hours	Total: 21.5 hours
<b>Assessment Criteria</b>	<ul style="list-style-type: none"> <li>• Roof covering layout is made as per the job requirement following standard procedure</li> <li>• CGI sheet is fixed as per the job requirement following standard procedure</li> <li>• Ridge is fixed as per the job requirement following standard procedure</li> <li>• Gutter is fixed as per the job requirement following standard procedure</li> </ul>		
<b>Content</b>	<b>E3.01 Laying out roof covering</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Estimation of roofing materials</li> <li>• Type of roofing materials and its significance</li> </ul>	<ul style="list-style-type: none"> <li>• Purpose of making layout</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
	<i>Attitude, safety and environmental concern</i>		
	<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>	
	<b>E3.02 Fixing CGI/PPGI sheet</b>		
	<i>Knowledge</i>		
	<ul style="list-style-type: none"> <li>• Specification of roof covering materials</li> <li>• Purpose of projecting sheet</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of maintaining lapping</li> <li>• Types of fasteners required</li> </ul>	
	<i>Skills</i>		
	<ul style="list-style-type: none"> <li>• Using drilling machine</li> <li>• Using sheet cutting machine</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>	
<i>Attitude, safety and environmental concern</i>			
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Being a team player</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>		

<b>E3.03 Fixing ridge</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Purpose of ridging</li> <li>• Dimensions of ridge</li> </ul>	<ul style="list-style-type: none"> <li>• Importance of punching hole from underneath the sheet</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Using centre punch</li> <li>• Communication skills</li> <li>• Observation skills</li> </ul>	<ul style="list-style-type: none"> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>
<b>E3.04 Fixing gutter</b>	
<i>Knowledge</i>	
<ul style="list-style-type: none"> <li>• Definition of gutter</li> <li>• Components of gutter</li> <li>• Purpose of gutter</li> </ul>	<ul style="list-style-type: none"> <li>• Type of gutter materials and its accessories</li> <li>• Importance of maintaining slope</li> </ul>
<i>Skills</i>	
<ul style="list-style-type: none"> <li>• Using drilling machine</li> <li>• Using sheet cutting machine</li> <li>• Interpreting drawing</li> <li>• Communication skills</li> </ul>	<ul style="list-style-type: none"> <li>• Observation skills</li> <li>• Analytical skills</li> <li>• Planning skills</li> </ul>
<i>Attitude, safety and environmental concern</i>	
<ul style="list-style-type: none"> <li>• Effective time management</li> <li>• Being efficient in using resources</li> <li>• Being vigilant and patient</li> <li>• Having work ethics and integrity</li> <li>• Proper handling of tools, materials and equipment</li> <li>• Having sense of ownership and accountability</li> </ul>	<ul style="list-style-type: none"> <li>• Being a team player</li> <li>• Ensuring appropriate use of PPE</li> <li>• Ensuring to follow 5S</li> <li>• Ensuring proper disposal of waste</li> <li>• Ensure to follow environmental rules and regulations</li> <li>• Ensuring to follow OHS rules and regulation</li> </ul>

<p><b>Learning Conditions</b></p>	<p><b>Learning Materials</b></p> <ul style="list-style-type: none"> <li>• Competency Based Learning Materials (CBLM)</li> <li>• Hand-outs and Audio Visuals</li> <li>• Reference books and Manuals</li> </ul> <p><b>Learning Facilities and infrastructure</b></p> <ul style="list-style-type: none"> <li>• Classroom with adequate facilities</li> <li>• E-Library and Workshop</li> </ul> <p><b>Materials</b></p> <ul style="list-style-type: none"> <li>• Mason thread, pencil, batten, CGI/PPGI sheet, screw with washers, GI ridge, screws, gutter, gutter fittings, gutter holder, washers, m-seal, silicon glue, adhesive and nails</li> </ul> <p><b>Tools</b></p> <ul style="list-style-type: none"> <li>• Hammer, measuring tape, sheet cutter and centre punch snip</li> </ul> <p><b>Equipment</b></p> <ul style="list-style-type: none"> <li>• Drilling machine and angle grinder</li> </ul> <p><b>PPE</b></p> <ul style="list-style-type: none"> <li>• Safety gloves, safety shoes, safety harness, safety helmet, sun glass, working dress, safety harness, apron, tool bag, ear muff and dust mask</li> </ul>
<p><b>Instructional Methodologies</b></p>	<p>The trainer shall use <i>inter alia</i>, the following instructional methods:</p> <ul style="list-style-type: none"> <li>• Lecture</li> <li>• Interactive discussion</li> <li>• Demonstration</li> <li>• Industrial training/attachment</li> <li>• Guided practice</li> <li>• Group activity with project-based learning</li> <li>• Individual practice with problem-based learning</li> </ul>
<p><b>Method of Assessment</b></p>	<p>The trainer shall use <i>inter alia</i>, the following assessment methods:</p> <ul style="list-style-type: none"> <li>• Practical demonstration/observation</li> <li>• Case study</li> <li>• Oral/viva-voce</li> <li>• Written test</li> <li>• Assignment</li> <li>• Project work</li> <li>• Rubrics</li> </ul>

## ANNEXURES

### Annex I - Time Distribution

Module	Learning outcomes	Tasks	Theory (hours)	Practical (hours)	Total (hours)	
A Performing wood work	A1 Maintain hand tools	A1.00 Introductory knowledge	3	0	3	
		A1.01 Sharpen plane/chisel blade	1	2	3	
		A1.02 Sharpen saw blade	1	6	7	
		A1.03 sharpen knife	1	2	3	
	<b>Sub Total Duration</b>			<b>6</b>	<b>10</b>	<b>16</b>
	A2 Maintain power tools and equipment	A2.01 Service portable circular saw	1	3	4	
		A2.02 Service portable router bit	1	3	4	
		A2.03 Service portable planer machine	1	3	4	
		A2.04 Service jigsaw machine	1	3	4	
		A2.05 Service drill machine	1	3	4	
		A2.06 Service sanding machine	1	3	4	
	<b>Sub Total Duration</b>			<b>6</b>	<b>18</b>	<b>24</b>
	A3 Carry out basic wood work	A3.01 Plane workpiece	1	6	7	
		A3.02 Perform sawing	1	2	3	
		A3.03 chisel workpiece	1	3	4	
	<b>Sub Total Duration</b>			<b>3</b>	<b>11</b>	<b>14</b>
	A4 Perform wood joints	A4.01 Make butt with dowel joint	1	3	4	
		A4.02 Make Tenon and mortise joint	0.5	3	3.5	
		A4.03 Make bridle joint	0.5	3	3.5	
		A4.04 Make haunch joint	0.5	3	3.5	
		A4.05 Make tongue and groove joint	0.5	3	3.5	
A4.06 Make scarf joint		0.5	3	3.5		
<b>Sub Total Duration</b>			<b>3.5</b>	<b>18</b>	<b>21.5</b>	
<b>Total Duration (A)</b>			<b>18.5</b>	<b>57</b>	<b>75.5</b>	
B Constructing formwork and scaffolding	B1 Prepare formwork and scaffolding components	B1.01 Make footing/beam/column formwork	4	24	28	
		B1.02 Make cornices formwork	1	10	11	
		B1.03 Make staircase formwork	1	10	11	
		B1.04 Prepare bamboo/timber scaffolding	1	10	11	
	<b>Sub Total Duration</b>			<b>7</b>	<b>54</b>	<b>61</b>
	B2 Construct formwork	B2.01 Assemble formwork	0.5	2	2.5	
		B2.02 Fix formwork	0.5	2	2.5	
B2.03 Remove formwork		0.5	2	2.5		
<b>Sub Total Duration</b>			<b>1.5</b>	<b>6</b>	<b>7.5</b>	



	<b>B3 Construct scaffolding</b>	B3.01 Erect bamboo/wooden scaffolding	1	2	3
		B3.02 Disassemble scaffolding	1	2	3
		B3.03 Store scaffolding components	1	2	3
	<b>Sub Total Duration</b>		<b>3</b>	<b>6</b>	<b>9</b>
<b>Total Duration (B)</b>			<b>11.5</b>	<b>66</b>	<b>77.5</b>
<b>C. Carrying out ceiling, flooring, partition and staircase constructi on work</b>	<b>C1 Carry out ceiling work</b>	C1.01 Prepare ceiling joist and board	3	10	13
		C1.02 Fix ceiling joist	1	4	5
		C1.03 Fix ceiling boards	1	4	5
		C1.04 Make ceiling beads	1	4	5
		C1.05 Fix ceiling beads	1	4	5
	<b>Sub Total Duration</b>		<b>7</b>	<b>26</b>	<b>33</b>
	<b>C2 Carry out flooring work</b>	C2.01 Prepare floor joist and board	1	12	13
		C2.02 Fix floor joist	1	3	4
		C2.03 Fix floor boards	1	3	4
		C2.04 Prepare floor skirting	1	6	7
		C2.05 Fix floor skirting	1	3	4
		C2.06 Perform finishing	2	6	8
	<b>Sub Total Duration</b>		<b>7</b>	<b>33</b>	<b>40</b>
	<b>C3 Carry out partition work</b>	C13.01 Prepare partition frame/board/panel	1	12	13
		C3.02 Fix partition frame	1	3	4
		C3.03 Fix partition board	1	3	4
		C3.04 fix wall panelling	1	3	4
		C3.05 Prepare paneling beads	1	6	7
		C3.06 Fix paneling beads	1	3	4
	<b>Sub Total Duration</b>		<b>6</b>	<b>30</b>	<b>36</b>
	<b>C4 Carry out staircase work</b>	C4.01 Make tread and riser	1	4	5
C4.02 Make stringer		1	4	5	
C4.03 Make newel post		1	4	5	
C4.04 Make baluster		1	4	5	
C4.05 Make hand railing		1	4	5	
C4.06 Assemble staircase components		1	4	5	
<b>Sub Total Duration</b>		<b>6</b>	<b>24</b>	<b>30</b>	
<b>Total Duration (C)</b>			<b>26</b>	<b>113</b>	<b>139</b>
<b>D Construct ing doors, windows and shutters</b>	<b>D1 Prepare doors, windows and shutter components</b>	D1.01 Make window frame	2	9	11
		D1.01 Make kachung	1	9	10
		D1.02 Make Zing/Horzhu	1	9	10
		D1.03 Make Tshegen and Jughshing	1	9	10
		D1.04 Make dhung	1	9	10
		D1.05 Make pem	1	9	10
		D1.06 Prepare window shutter	1	9	10

		D1.06 Prepare door frame	1	9	10	
		D1.07 Make door shutter	1	9	10	
		<b>Sub Total Duration</b>	<b>10</b>	<b>81</b>	<b>91</b>	
	<b>D2 Assemble door &amp; window frames and shutter</b>	D2.01 Assemble door frame	0.5	2	2.5	
		D2.02 Assemble window frame	0.5	2	2.5	
		D2.03 Assemble door and window shutter	0.5	2	2.5	
		<b>Sub Total Duration</b>	<b>1.5</b>	<b>6</b>	<b>7.5</b>	
	<b>D3 Instal door, window and shutters</b>	D3.01 Erect door and window frame	0.5	2	2.5	
		D3.02 Fix door and window shutter	0.5	2	2.5	
		D3.03 Fix hardware fittings	1	3	4	
		D3.04 Fix glass panes	1	6	7	
		<b>Sub Total Duration</b>	<b>3</b>	<b>13</b>	<b>16</b>	
	<b>D4 Carry out uPVC work</b>	D4.01 Assemble uPVC window frame	2	5	7	
		D4.02 Assemble uPVC door and window shutter	1	6	7	
		D4.03 Fix uPVC window frame	0.5	2	2.5	
		D4.04 Fix uPVC door and window shutter	0.5	2	2.5	
		<b>Sub Total Duration</b>	<b>4</b>	<b>15</b>	<b>19</b>	
		<b>Total Duration (D)</b>	<b>18.5</b>	<b>115</b>	<b>133.5</b>	
<b>E Carrying out roof works</b>	<b>E1 Construct roof truss</b>	E1.01 Make wooden roof truss members	4	6	10	
		E1.02 Assemble roof truss components	0.5	2	2.5	
		E1.03 Erect roof truss	0.5	6	6.5	
			<b>Sub Total Duration</b>	<b>5</b>	<b>14</b>	<b>19</b>
	<b>E2 Install eave boards</b>	E2.01 Make wooden eave boards/fascia	0.5	3	3.5	
		E2.02 Fix eave boards/fascia	0.5	3	3.5	
		E2.03 Make wooden eave ceiling	0.5	3	3.5	
		E2.04 Fix wooden eave ceiling	0.5	3	3.5	
			<b>Sub Total Duration</b>	<b>2</b>	<b>12</b>	<b>14</b>
	<b>E3 Perform roof covering</b>	E3.01 Lay out roof covering	1	3	4	
		E3.02 Fix CGI/PPGI sheet	0.5	6	6.5	
		E3.03 Fix ridge	0.5	4	4.5	
		E3.04 Fix gutter	0.5	6	6.5	
		<b>Sub Total Duration</b>	<b>2.5</b>	<b>19</b>	<b>21.5</b>	
		<b>Total Duration (E)</b>	<b>9.5</b>	<b>45</b>	<b>54.5</b>	
		<b>Grand Total</b>	<b>84</b>	<b>396</b>	<b>480</b>	

## Annex II: Assessment Sample

The following are assessment sample. Modify to be used for construction carpentry by refereeing the information given in above modules.

<b>Unit of competency</b>	Drive Light Vehicle
<b>Unit Code</b>	8322-U4-L2
<b>Module Title</b>	Driving Light Vehicle
<b>Module Code</b>	8322-U4-L2-M1
<b>Time Duration</b>	45 min *
<b>Problem or Project:</b> Drive Light Vehicle	
<b>Introduction:</b> Perform pre-operating procedures before starting the vehicle. Drive light vehicle under different environment conditions following standard traffic rules and defensive driving techniques. Perform post operating procedures after parking the vehicle.	
<b>Observation: (How will you be assessed as Competent?)</b> Your performance will be assessed based on the following criteria: <ul style="list-style-type: none"><li>• Performance of pre and post operating procedures as per standard practices;</li><li>• Application of standard procedures while starting the LMV;</li><li>• Demonstrating the driving skills in different road condition using the system of vehicle control (SOVC);</li><li>• Demonstrating your adherence to RSTA Rules, Defensive Driving;</li><li>• The final outcome of your driving skills</li></ul>	
<b>Note: For Assessor/Institute for preparation for assessment.</b>	
<b>Materials and Equipment for 1 candidate</b> <ul style="list-style-type: none"><li>• LMV in good running condition with all necessary vehicle documents</li></ul>	
<b>Roles and responsibilities of assessors (before/during and after assessment)</b> <ul style="list-style-type: none"><li>• Identify in advance the different road environment (rough road, town, simulated night and poor light condition, highway)</li><li>• During assessment let the candidate demonstrate moving off, reversing, overtaking, and parking.</li></ul>	

## Assessor/ Observation Check List

The following are assessment sample. Modify to be used for construction carpentry by refereeing the information given in above modules.

<b>Unit of competency</b>	Drive Light Vehicle		
<b>Unit Code</b>	8322-U4-L2		
<b>Module Title</b>	Driving Light Vehicle		
<b>Module Code</b>	8322-U4-L2-M1		
<b>Problem/Project: Drive Light Vehicle</b>	Psychomotor (Practical) domain level: P2		
<b>Candidate's Name:</b>			
<b>Place of Assessment:</b>		<b>Date of Assessment:</b>	
<b>A. During the demonstration of skills did the candidate do following:</b>	<b>Marks allocated</b>	<b>Marks received</b>	<b>Remarks</b>
1. Check mirror settings, fluid level, tire pressure and required documents.	4		
2. Start LMV according to the procedure of standard starting procedure (Cockpit Drill)	2		
3. Move off and steer LMV wearing seat belts and without stalling the engine*	3		
4. Reverse LMV safely without stalling the engine*	3		
5. Park LMV safely in the centre of given parking area following standard parking procedure	2		
6. Drive LMV on the highway according to the road conditions following the road safety signs.	2		
7. Drive LMV in towns according to the traffic signs and signals.	2		
8. Drive LMV on 4WD safely (if necessary and available)	1		
9. Giving pass and overtake the vehicle safely according to the road and weather condition *	3		
10. Stop LMV safely in a given area according to standard stopping procedure	1		
<b>B. Is the job outcome correct in the following areas?</b>			
Caused no accidents and damages to the vehicle.*	5		
<b>Total marks obtained</b>	28		
<b>The Candidate's performance</b>	<b>Satisfactory:</b>		
	<b>Not Satisfactory:</b>		

**Note:** The questions marked with \* are the critical questions which the trainees must be able to answer. Otherwise, they will be rated unsuccessful even if they perform well in the practical exam. The mark **P** is for the psychomotor domain level (P1- Simple Routine Assignment; P2- Questions related to Simple Routine Assignment and P3- Questions not related to Simple Routine Assignment)

**Oral Questions checklist:**




The following are assessment sample. Modify to be used for construction carpentry by refereeing the information given in above modules.

<b>Unit of competency</b>	Drive Light Vehicle				
<b>Unit Code</b>	8322-U4-L2				
<b>Module Title</b>	Driving Light Vehicle				
<b>Module Code</b>	8322-U4-L2-M1				
<b>Problem/Project:</b> Drive Light Vehicle					
<b>Candidate's Name:</b>					
<b>Place of Assessment:</b>			<b>Date of Assessment:</b>		
<b>Questions (and its domain level) to be answered by the trainee / candidate:</b>	<b>Key Answer</b>	<b>Marks allocated</b>	<b>Marks obtained</b>	<b>Remarks</b>	
Why do you keep the vehicle in start mode for a few minutes before moving? (Verifying observations) (C1)					
In case of accidents who will you contact first? (contingency questions) (C2)					
While entering intersection, before how many seconds do you have to give signal? (verifying observations) (C3)					
<b>Total Marks Obtained</b>					
<b>The candidate's performance was:</b>		<b>Satisfactory:</b>			
		<b>Not Satisfactory:</b>			
<b>Assessor's Name:</b>		<b>Signature:</b>			

**Note:** The questions marked with C describes the cognitive level of the questions. C1- Remembering; C2- Functional Understanding and C3- Problem Solving.

### Written questions checklist:

The following are assessment sample. Modify to be used for construction carpentry by refereeing the information given in above modules.

<b>Unit of competency</b>	Drive Light Vehicle		
<b>Unit Code</b>	8322-U4-L2		
<b>Module Title</b>	Driving Light Vehicle		
<b>Module Code</b>	8322-U4-L2-M1		
<b>Problem/Project: Drive Light Vehicle</b>			
<b>Candidate's Name:</b>			
<b>Place of Assessment:</b>		<b>Date of Assessment:</b>	
<b>Questions (and its domain level) to be answered by the trainee/ candidate:</b>	<b>Key answer</b>	<b>Marks allocated</b>	<b>Marks obtained</b>
1. List down three types of parking (Short Answer Question) (C1)	Angle, Straight and Parallel Parking	1	
2. All of the following are honking prohibited places <b>EXCEPT: (C2)</b> a. pedestrian crossing c. traffic jam b. public procession d. curves and bends (Multiple Choice Question)	D	2	
3. According to RSTA Regulations how much is the penalty for drunk driving? (C1)	Nu. 1750	1	
4. Match the following signs in column A with the indications in column B. (Matching Type) (C2) Column A 1.  2.  3.  Column B a. Give way b. Restriction End c. Compulsory Ahead d. Pedestrian Prohibited	1-c, 2-a, 3-d	3	
<b>Total marks obtained</b>			
The Candidate's performance was:		<b>Satisfactory:</b>	
		<b>Not Satisfactory:</b>	
<b>Assessor's Name:</b>		<b>Signature:</b>	
<b>The Candidate's overall result:</b>		<b>Competent:</b>	
		<b>Not Yet Competent:</b>	
<b>Feedback to Candidate:</b>  (Provide feedback to the candidate on how they could improve – especially if they are not competent)			
<b>I am satisfied with the way assessment was conducted:</b> (Please include reasons if not satisfied)		<b>YES</b>	<b>NO</b>
<b>Candidate Name:</b>	<b>Signature:</b>	<b>Date:</b>	

**Assessor Name:**

**Signature:**

**Training Provider:**

**Date:**

### Annex III: Module Recognition

**This is to verify that**

Mr/Ms.....has completed module on  
.....

**Covering following learning outcomes:**

1. ....
2. ....
3. ....

**Instructor:**

.....

**Head of the Department:**

.....

**Signature:** .....

**Date:** ..... / ..... / .....  
(dd/mm/yyyy)

**Signature:** .....

**Date:** ..... / ..... / .....  
dd/mm/yyyy)

**Head of the Institute:**

.....

**Trained Assessor (Institute)/Exam OC:**

.....

**Signature:** .....

**Date:** ... / ... / .....  
(dd/mm/yyyy)

**Signature:** .....

**Date:** ..... / ..... / .....  
(dd/mm/yyyy)

## Annex IV: Lesson Plan

<b>Course Title:</b>		<b>NC Level:</b>		
<b>Module Code:</b>		<b>Duration:</b>		
<b>Module Title:</b>				
<b>Learning Outcome:</b>				
<b>Skill/Task/Topic:</b>				
<b>Terminal Performance Objective:</b>				
<i>(Note: Write narrative statement extracted from TPO of Task Sheet)</i>				
<b>Enabling Objectives (Related knowledge):</b>				
<i>By the end of the lesson learners will be able to:</i>				
i)				
ii)				
<b>What (Content/Activity)</b>	<b>Who (T/L)</b>	<b>How (Methods/ Media)</b>	<b>Duration (Min.)</b>	<b>Questions</b>
<i>Introduction:</i>				
<i>Main body</i>				
<i>Conclusion</i>				



<b>Projects/Problems:</b>				
<b>Instructional Resources Plan</b>				
<b>Skills/Task/Topic:</b>				
<b>No. of Trainees:</b>				
<b>Sl. No.:</b>	<b>Instructional materials/resources</b>	<b>Specifications</b>	<b>Qty.</b>	<b>Remarks</b>
<b>Prepared by:</b>		<b>Signature</b>	<b>Date:</b>	
<b>Revised by:</b>		<b>Signature</b>	<b>Date:</b>	
<b>Approved by:</b>		<b>Signature</b>	<b>Date:</b>	

## Annex V: Task Sheet

TS-1/4: Practical Plan			
Course Title:		N C Level:	
Module code:		Duration:	
Module Title			
Learning outcome			
Skills/Task Title:		Task no:	
<b>Terminal Performance Objective:</b>  <i>Given:</i> <i>Cue:</i> <i>Who:</i> <i>What:</i> <i>Within:</i> <i>How well:</i> - -			
<b>Enabling Objectives (Related Skills):</b>  <i>By the end of a lesson, the learners will be able to:</i> i) ii)			
Activities	Who (T/L)	How (methods/ media)	Duration

<b>Project/Assignment:</b>						
<b>TS-2/4: Tool and Equipment required:</b>						
<i>Sl no.</i>	<i>Particulars</i>	<i>Specifications</i>	<i>Qty.</i>	<i>Remarks</i>		
<b>Training Materials required:</b>						
<i>Sl no.</i>	<i>Particulars</i>	<i>Specifications</i>	<i>Qty.</i>	<i>Rate</i>	<i>Amount</i>	<i>Remarks</i>
<b>TS-3/4: Performance Guide</b>						
<b>Skill/Task:</b>					<b>Date:</b>	
<b>Directions:</b> Use the following performances criteria to rate the learner. Check YES/NO to indicate whether the learner performed each step as indicated or not?						

Sl. No:	Steps	Yes	No
<p><b>Note:</b>  <i>Critical steps: All * marked steps should be carried out very carefully.</i> For a quality performance guide, all items should be checked “YES”</p>			

**TS-4/4: Instruction and Drawing**

***General Instructions for Trainees***

- i)
- ii)
- iii)

***Drawing (if any)***

**Safety Precaution**

- i)
- ii)
- iii)

<b>Prepared by :</b>	<b>Signature</b>	<b>Date:</b>
<b>Revised By:</b>	<b>Signature</b>	<b>Date:</b>
<b>Approved by :</b>	<b>Signature</b>	<b>Date:</b>

# Annex VI: Course Plan

YEAR PLAN- \_\_\_\_\_ Semester \_\_\_\_\_ (Year)

Trade: ..... NC Level: .....			Schedule																																Total Hours								
Module Code	Module Title	Learning Outcome	Feb.				March				April				May				June				July				Aug.				Sept					Oct.				Nov.			
			1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
OJT																																											
Assessment and Certification																																											

Prepared by:

Verified & Approved by:

Date:

**Annex VII: Monthly/Weekly Plan**

**Month:**

**Trade:**

**Trainer:**

<b>Week</b>	<b>Monday</b>	<b>Tuesday</b>	<b>Wednesday</b>	<b>Thursday</b>	<b>Friday</b>	<b>Saturday</b>	<b>Sunday</b>
<b>Week 01</b>							
<b>Week 02</b>							
<b>Week 03</b>							
<b>Week 04</b>							
<b>Week 05</b>							

Developed by:

Approved by:

Date





**Department of Education Programmes  
Ministry of Education and Skills Development  
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