

# TRAINING REGULATIONS



## CARPENTRY NC III

**CIVIL WORKS  
(CONSTRUCTION SECTOR)**

**TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY**  
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**TABLE OF CONTENTS**  
**CONSTRUCTION SECTOR**  
**CARPENTRY NC III**

	<b>Page No.</b>
<b>Section 1. CARPENTRY NC III QUALIFICATION</b>	<b>1</b>
<b>Section 2. COMPETENCY STANDARDS</b>	<b>2 - 64</b>
• Basic Competencies	2 -22
• Common Competencies	23 - 40
• Core Competencies	41 - 64
<b>Section 3. TRAINING STANDARDS</b>	<b>65 - 73</b>
<b>3.1 Curriculum Design</b>	65
- Basic Competencies	65 - 66
- Common Competencies	67 - 68
- Core Competencies	69 - 70
<b>3.2 Training Delivery</b>	71
<b>3.3 Trainee Entry Requirements</b>	72
<b>3.4 List of Tools, Equipment and Materials</b>	73 - 74
<b>3.5 Training Facilities</b>	75
<b>3.6 Trainer's Qualifications</b>	75
<b>3.7 Institutional Assessment</b>	75
<b>Section 4. NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS</b>	<b>76</b>
<b>COMPETENCY MAP</b>	<b>77</b>
<b>DEFINITION OF TERMS</b>	<b>78 - 79</b>
<b>ACKNOWLEDGEMENTS</b>	<b>80 - 81</b>

## TRAINING REGULATIONS FOR CARPENTRY NC III

### SECTION 1 CARPENTRY NC III QUALIFICATION

The Carpentry NC III Qualification consists of competencies that a person must achieve and that will enable him / her to install architectural ceiling, wall sheats / panels / boards and floor finishes; fabricate door / window jambs and panels; install stair components or pre-fabricated stairs assembly; and install built-in or pre-fabricated cabinets.

This Qualification is packaged from the competency map of Construction – Civil Works sub-sector as shown in Annex A.

The Units of Competency comprising this Qualification include the following:

#### **CODE NO. BASIC COMPETENCIES**

##### **Units of Competency**

500311109	Lead workplace communication
500311110	Lead small teams
500311111	Develop and practice negotiation skills
500311112	Solve problems related to work activities
500311113	Use Mathematical concepts and techniques
500311114	Use relevant technologies

#### **CODE NO. COMMON COMPETENCIES**

##### **Units of Competency**

CON931201	Prepare construction materials and tools
CON311201	Observe procedures, specifications and manuals of instruction
CON311202	Interpret technical drawings and plans
CON311203	Perform mensurations and calculations
CON311204	Maintain tools and equipment

#### **CODE NO. CORE COMPETENCIES**

##### **Units of Competency**

CON712322	Install architectural ceiling, wall sheats / panels / boards and floor finishes
CON712323	Fabricate / install door / window jambs and panels
CON712324	Install stair components and / or pre-fabricated stairs assembly
CON712325	Install built-in and / or pre-fabricated cabinets

A person who has achieved this Qualification is competent to be a:

- Carpenter III

## SECTION 2 COMPETENCY STANDARDS

This section gives the details of the contents of the core units of competency required for **CARPENTER NC III**.

### BASIC COMPETENCIES

**UNIT OF COMPETENCY :** LEAD WORKPLACE COMMUNICATION  
**UNIT CODE :** 500311109

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes required to lead in the dissemination and discussion of ideas, information and issues in the workplace.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Communicate information about workplace processes	1.1 Appropriate <b>communication method</b> is selected 1.2 Multiple operations involving several topics areas are communicated accordingly 1.3 Questions are used to gain extra information 1.4 Correct sources of information are identified 1.5 Information is selected and organized correctly 1.6 Verbal and written reporting is undertaken when required 1.7 Communication skills are maintained in all situations
2. Lead workplace discussions	2.1 Response to workplace issues are sought 2.2 Response to workplace issues are provided immediately 2.3 Constructive contributions are made to workplace discussions on such issues as production, quality and safety 2.4 Goals/objectives and action plan undertaken in the workplace are communicated
3. Identify and communicate issues arising in the workplace	3.1 Issues and problems are identified as they arise 3.2 Information regarding problems and issues are organized coherently to ensure clear and effective communication 3.3 Dialogue is initiated with appropriate personnel 3.4 Communication problems and issues are raised as they arise

## RANGE OF VARIABLES

<b>VARIABLE</b>	<b>RANGE</b>
1. Methods of communication	1.1 Non-verbal gestures 1.2 Verbal 1.3 Face to face 1.4 Two-way radio 1.5 Speaking to groups 1.6 Using telephone 1.7 Written 1.8 Internet

## EVIDENCE GUIDE

<p>1. Critical aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Dealt with a range of communication/information at one time</li> <li>1.2 Made constructive contributions in workplace issues</li> <li>1.3 Sought workplace issues effectively</li> <li>1.4 Responded to workplace issues promptly</li> <li>1.5 Presented information clearly and effectively written form</li> <li>1.6 Used appropriate sources of information</li> <li>1.7 Asked appropriate questions</li> <li>1.8 Provided accurate information</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Organization requirements for written and electronic communication methods</li> <li>2.2 Effective verbal communication methods</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Organize information</li> <li>3.2 Understand and convey intended meaning</li> <li>3.3 Participate in variety of workplace discussions</li> <li>3.4 Comply with organization requirements for the use of written and electronic communication methods</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> <li>4.1 Variety of Information</li> <li>4.2 Communication tools</li> <li>4.3 Simulated workplace</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Competency in this unit must be assessed through</li> <li>5.2 Direct Observation</li> <li>5.3 Interview</li> </ul>
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the workplace or in simulated workplace environment</li> </ul>

**UNIT OF COMPETENCY :** LEAD SMALL TEAMS  
**UNIT CODE :** 500311110

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes to lead small teams including setting and maintaining team and individual performance standards.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Provide team leadership	1.1 <b>Work requirements</b> are identified and presented to team members 1.2 Reasons for instructions and requirements are communicated to team members 1.3 <b>Team members' queries and concerns</b> are recognized, discussed and dealt with
2. Assign responsibilities	2.1 Duties, and responsibilities are allocated having regard to the skills, knowledge and aptitude required to properly undertake the assigned task and according to company policy 2.2 Duties are allocated having regard to individual preference, domestic and personal considerations, whenever possible
3. Set performance expectations for team members	3.1 Performance expectations are established based on client needs and according to assignment requirements 3.2 Performance expectations are based on individual team members duties and area of responsibility 3.3 Performance expectations are discussed and disseminated to individual team members

<p>4. Supervise team performance</p>	<p>4.1 <b>Monitoring of performance</b> takes place against defined performance criteria and/or assignment instructions and corrective action taken if required</p> <p>4.2 Team members are provided with <i>feedback</i>, positive support and advice on strategies to overcome any deficiencies</p> <p>4.3 <b>Performance issues</b> which cannot be rectified or addressed within the team are referenced to appropriate personnel according to employer policy</p> <p>4.4 Team members are kept informed of any changes in the priority allocated to assignments or tasks which might impact on client/customer needs and satisfaction</p> <p>4.5 Team operations are monitored to ensure that employer/client needs and requirements are met</p> <p>4.6 Follow-up communication is provided on all issues affecting the team</p> <p>4.7 All relevant documentation is completed in accordance with company procedures</p>
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## RANGE OF VARIABLES

VARIABLE	RANGE
1. Work requirements	1.1 Client Profile 1.2 Assignment instructions
2. Team member's concerns	2.1 Roster/shift details
3. Monitor performance	3.1 Formal process 3.2 Informal process
4. Feedback	4.1 Formal process 4.2 Informal process
5. Performance issues	5.1 Work output 5.2 Work quality 5.3 Team participation 5.4 Compliance with workplace protocols 5.5 Safety 5.6 Customer service

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Maintained or improved individuals and/or team performance given a variety of possible scenario</li> <li>1.2 Assessed and monitored team and individual performance against set criteria</li> <li>1.3 Represented concerns of a team and individual to next level of management or appropriate specialist and to negotiate on their behalf</li> <li>1.4 Allocated duties and responsibilities, having regard to individual's knowledge, skills and aptitude and the needs of the tasks to be performed</li> <li>1.5 Set and communicated performance expectations for a range of tasks and duties within the team and provided feedback to team members</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Company policies and procedures</li> <li>2.2 Relevant legal requirements</li> <li>2.3 How performance expectations are set</li> <li>2.4 Methods of Monitoring Performance</li> <li>2.5 Client expectations</li> <li>2.6 Team member's duties and responsibilities</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Communication skills required for leading teams</li> <li>3.2 Informal performance counseling skills</li> <li>3.3 Team building skills</li> <li>3.4 Negotiating skills</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> <li>4.1 Access to relevant workplace or appropriately simulated environment where assessment can take place</li> <li>4.2 Materials relevant to the proposed activity or task</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observations of work activities of the individual member in relation to the work activities of the group</li> <li>5.2 Observation of simulation and/or role play involving the participation of individual member to the attainment of organizational goal</li> <li>5.3 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork</li> </ul>
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency assessment may occur in workplace or any appropriately simulated environment</li> <li>6.2 Assessment shall be observed while task are being undertaken whether individually or in-group</li> </ul>

**UNIT OF COMPETENCY :** DEVELOP AND PRACTICE NEGOTIATION SKILLS  
**UNIT CODE :** 500311111

**UNIT DESCRIPTOR :** This unit covers the skills, knowledge and attitudes required to collect information in order to negotiate to a desired outcome and participate in the negotiation.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms are elaborated in the Range of Variables</i>
1. Plan negotiations	1.1 Information on <b><i>preparing for negotiation</i></b> is identified and included in the plan 1.2 Information on creating <b><i>non verbal environments</i></b> for positive negotiating is identified and included in the plan 1.3 Information on <b><i>active listening</i></b> is identified and included in the plan 1.4 Information on different <b><i>questioning techniques</i></b> is identified and included in the plan 1.5 Information is checked to ensure it is correct and up-to-date
2. Participate in negotiation	2.1 Criteria for successful outcomes are agreed upon by all parties 2.2 Desired outcome of all parties are considered 2.3 Appropriate language is used throughout the negotiation 2.4 A variety of questioning techniques are used 2.5 The issues and processes are documented and agreed upon by all parties 2.6 Possible solutions are discussed and their viability assessed 2.7 Areas for agreement are confirmed and recorded 2.8 Follow-up action is agreed upon by all parties

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Preparing for negotiation	1.1 Background information on other parties to the negotiation 1.2 Good understanding of topic to be negotiated 1.3 Clear understanding of desired outcome/s 1.4 Personal attributes <ul style="list-style-type: none"> <li>1.4.1 self awareness</li> <li>1.4.2 self esteem</li> <li>1.4.3 objectivity</li> <li>1.4.4 empathy</li> <li>1.4.5 respect for others</li> <li>1.4.6 Interpersonal skills</li> <li>1.4.7 listening/reflecting</li> <li>1.4.8 non verbal communication</li> <li>1.4.9 assertiveness</li> <li>1.4.10 behavior labeling</li> <li>1.4.11 testing understanding</li> <li>1.4.12 seeking information</li> <li>1.4.13 self disclosing</li> </ul> 1.5 Analytic skills <ul style="list-style-type: none"> <li>1.5.1 observing differences between content and process</li> <li>1.5.2 identifying bargaining information</li> <li>1.5.3 applying strategies to manage process</li> <li>1.5.4 applying steps in negotiating process</li> <li>1.5.5 strategies to manage conflict</li> <li>1.5.6 steps in negotiating process</li> <li>1.5.7 options within organization and externally for resolving conflict</li> </ul>
2. Non-verbal environments	2.1 Friendly reception 2.2 Warm and welcoming room 2.3 Refreshments offered 2.4 Lead in conversation before negotiation begins
3. Active listening	3.1 Attentive 3.2 Don't interrupt 3.3 Good posture 3.4 Maintain eye contact 3.5 Reflective listening

4. Questioning techniques	4.1 Direct 4.2 Indirect 4.3 Open-ended
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## EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Demonstrated sufficient knowledge of the factors influencing negotiation to achieve agreed outcome 1.2 Participated in negotiation with at least one person to achieve an agreed outcome
2. Underpinning Knowledge and Attitude	2.1 Codes of practice and guidelines for the organization 2.2 Organizations policy and procedures for negotiations 2.3 Decision making and conflict resolution strategies procedures 2.4 Problem solving strategies on how to deal with unexpected questions and attitudes during negotiation 2.5 Flexibility 2.6 Empathy
3. Underpinning Skills	3.1 Interpersonal skills to develop rapport with other parties 3.2 Communication skills (verbal and listening) 3.3 Observation skills 3.4 Negotiation skills
4. Resource Implications	The following resources MUST be provided: 4.1 Room with facilities necessary for the negotiation process 4.2 Human resources (negotiators)
5. Methods of Assessment	Competency may be assessed through: 5.1 Observation/demonstration and questioning 5.2 Portfolio assessment 5.3 Oral and written questioning 5.4 Third party report
6. Context for Assessment	6.1 Competency to be assessed in real work environment or in a simulated workplace setting.

**UNIT OF COMPETENCY :** SOLVE PROBLEMS RELATED TO WORK ACTIVITIES  
**UNIT CODE :** 500311112

**UNIT DESCRIPTOR :** This unit of covers the knowledge, skills and attitudes required to solve problems in the workplace including the application of problem solving techniques and to determine and resolve the root cause of problems.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms are elaborated in the Range of Variables</i>
1. Identify the problem	1.1 Variances are identified from normal operating parameters; and product quality 1.2 Extent, cause and nature are of the problem are defined through observation, investigation and <b>analytical techniques</b> 1.3 <b>Problems</b> are clearly stated and specified
2. Determine fundamental causes of the problem	2.1 Possible causes are identified based on experience and the use of problem solving tools / analytical techniques. 2.2 Possible cause statements are developed based on findings 2.3 Fundamental causes are identified per results of investigation conducted
3. Determine corrective action	3.1 All possible options are considered for resolution of the problem 3.2 Strengths and weaknesses of possible options are considered 3.3 Corrective actions are determined to resolve the problem and possible future causes 3.4 <b>Action plans</b> are developed identifying measurable objectives, resource needs and timelines in accordance with safety and operating procedures
4. Provide recommendation / s to manager	4.1 Report on recommendations are prepared 4.2 Recommendations are presented to appropriate personnel 4.3 Recommendations are followed-up, if required

## RANGE OF VARIABLES

<b>VARIABLE</b>	<b>RANGE</b>
1. Analytical techniques	1.1 Brainstorming 1.2 Intuitions/Logic 1.3 Cause and effect diagrams 1.4 Pareto analysis 1.5 SWOT analysis 1.6 Gant chart, Pert CPM and graphs 1.7 Scattergrams
2. Problem	2.1 Non – routine process and quality problems 2.2 Equipment selection, availability and failure 2.3 Teamwork and work allocation problem 2.4 Safety and emergency situations and incidents
3. Action plans	3.1 Priority requirements 3.2 Measurable objectives 3.3 Resource requirements 3.4 Timelines 3.5 Co-ordination and feedback requirements 3.6 Safety requirements 3.7 Risk assessment 3.8 Environmental requirements

## EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified the problem</li> <li>1.2 Determined the fundamental causes of the problem</li> <li>1.3 Determined the correct / preventive action</li> <li>1.4 Provided recommendation to manager</li> </ul> <p>These aspects may be best assessed using a range of scenarios / case studies / what ifs as a stimulus with a walk through forming part of the response. These assessment activities should include a range of problems, including new, unusual and improbable situations that may have happened.</p>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Competence includes a thorough knowledge and understanding of the process, normal operating parameters, and product quality to recognize non-standard situations</li> <li>2.2 Competence to include the ability to apply and explain, sufficient for the identification of fundamental cause, determining the corrective action and provision of recommendations</li> <li>2.3 Relevant equipment and operational processes</li> <li>2.4 Enterprise goals, targets and measures</li> <li>2.5 Enterprise quality, OHS and environmental requirement</li> <li>2.6 Principles of decision making strategies and techniques</li> <li>2.7 Enterprise information systems and data collation</li> <li>2.8 Industry codes and standards</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Using range of formal problem solving techniques</li> <li>3.2 Identifying and clarifying the nature of the problem</li> <li>3.3 Devising the best solution</li> <li>3.4 Evaluating the solution</li> <li>3.5 Implementation of a developed plan to rectify the problem</li> </ul>

4. Resource Implications	Assessment will require access to an operating plant over an extended period of time, or a suitable method of gathering evidence of operating ability over a range of situations. A bank of scenarios / case studies / what ifs will be required as well as bank of questions which will be used to probe the reason behind the observable action.
5. Methods of Assessment	<p>Competency may be assessed through:</p> <p>5.1 Case studies on solving problems in the workplace</p> <p>5.2 Observation</p> <p>The unit will be assessed in a holistic manner as is practical and may be integrated with the assessment of other relevant units of competency. Assessment will occur over a range of situations, which will include disruptions to normal, smooth operation.</p> <p>5.3 Simulation may be required to allow for timely assessment of parts of this unit of competency. Simulation should be based on the actual workplace and will include walk through of the relevant competency components.</p>
6. Context of Assessment	6.1 In all workplace, it may be appropriate to assess this unit concurrently with relevant teamwork or operation units.

**UNIT OF COMPETENCY :** USE MATHEMATICAL CONCEPTS AND TECHNIQUES

**UNIT CODE :** 500311113

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes required in the application of mathematical concepts and techniques.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify mathematical tools and techniques to solve problem	1.1 Problem areas are identified based on given condition 1.2 <b><i>Mathematical techniques</i></b> are selected based on the given problem
2. Apply mathematical procedure/solution	2.1 Mathematical techniques are applied based on the problem identified 2.2 Mathematical computations are performed to the level of accuracy required for the problem 2.3 Results of mathematical computation is determined and verified based on job requirements
3. Analyze results	3.1 Result of application is reviewed based on expected and required specifications and outcome 3.2 <b><i>Appropriate action</i></b> is applied in case of error

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Mathematical techniques	May include but are not limited to: 1.1 Four fundamental operations 1.2 Measurements 1.3 Use/Conversion of units of measurements 1.4 Use of standard formulas
2. Appropriate action	2.1 Review in the use of mathematical techniques (e.g. recalculation, re-modeling) 2.2 Report error to immediate superior for proper action

## EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Identified, applied and reviewed the use of mathematical concepts and techniques to workplace problems
2. Underpinning Knowledge	2.1 Fundamental operation (addition, subtraction, division, multiplication) 2.2 Measurement system 2.3 Precision and accuracy 2.4 Basic measuring tools/devices
3. Underpinning Skills	3.1 Applying mathematical computations 3.2 Using calculator 3.3 Using different measuring tools
4. Resource Implications	The following resources <b>MUST</b> be provided: 4.1 Calculator 4.2 Basic measuring tools 4.3 Case Problems
5. Methods of Assessment	Competency may be assessed through: 5.1 Authenticated portfolio 5.2 Written Test 5.3 Interview/Oral Questioning 5.4 Demonstration
6. Context of Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

**UNIT OF COMPETENCY :** USE RELEVANT TECHNOLOGIES  
**UNIT CODE :** 500311114

**UNIT DESCRIPTOR :** This unit of competency covers the knowledge, skills, and attitude required in selecting, sourcing and applying appropriate and affordable technologies in the workplace.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms are elaborated in the Range of Variables</i>
1. Study/select appropriate technology	1.1 Usage of different <b>technologies</b> is determined based on job requirements 1.2 Appropriate technology is selected as per work specification
2. Apply relevant technology	2.1 Relevant technology is effectively used in carrying out function 2.2 Applicable software and hardware are used as per task requirement 2.3 <b>Management concepts</b> are observed and practiced as per established industry practices
3. Maintain/enhance relevant technology	3.1 Maintenance of technology is applied in accordance with the <b>industry standard operating procedure, manufacturer's operating guidelines</b> and <b>occupational health and safety procedure</b> to ensure its operative ability 3.2 Updating of technology is maintained through continuing education or training in accordance with job requirement 3.3 Technology failure/ defect is immediately reported to the concern/responsible person or section for <b>appropriate action</b>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Technology	May include but are not limited to: 1.1 Office technology 1.2 Industrial technology 1.3 System technology 1.4 Information technology 1.5 Training technology
2. Management concepts	May include but not limited to: 2.1 Real Time Management 2.2 KAIZEN or continuous improvement 2.3 5s 2.4 Total Quality Management 2.5 Other management/productivity tools
3. Industry standard operating procedure	3.1 Written guidelines relative to the usage of office technology/equipment 3.2 Verbal advise/instruction from the co-worker
4. Manufacturer's operating guidelines/ instructions	4.1 Written instruction/manuals of specific technology/equipment 4.2 General instruction manual 4.3 Verbal advise from manufacturer relative to the operation of equipment
5. Occupational health and safety procedure	5.1 Relevant statutes on OHS 5.2 Company guidelines in using technology/equipment
6. Appropriate action	6.1 Implementing preventive maintenance schedule 6.2 Coordinating with manufacturer's technician

## EVIDENCE GUIDE

1. Critical Aspects of Competency	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Studied and selected appropriate technology consistent with work requirements</li> <li>1.2 Applied relevant technology</li> <li>1.3 Maintained and enhanced operative ability of relevant technology</li> </ul>
2. Underpinning Knowledge	<ul style="list-style-type: none"> <li>2.1 Awareness on technology and its function</li> <li>2.2 Repair and maintenance procedure</li> <li>2.3 Operating instructions</li> <li>2.4 Applicable software</li> <li>2.5 Communication techniques</li> <li>2.6 Health and safety procedure</li> <li>2.7 Company policy in relation to relevant technology</li> <li>2.8 Different management concepts</li> <li>2.9 Technology adaptability</li> </ul>
3. Underpinning Skills	<ul style="list-style-type: none"> <li>3.1 Relevant technology application/implementation</li> <li>3.2 Basic communication skills</li> <li>3.3 Software applications skills</li> <li>3.4 Basic troubleshooting skills</li> </ul>
4. Resource Implications	<p>The following resources MUST be provided:</p> <ul style="list-style-type: none"> <li>4.1 Relevant technology</li> <li>4.2 Interview and demonstration questionnaires</li> <li>4.3 Assessment packages</li> </ul>
5. Methods of Assessment	<p>Competency must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Interview</li> <li>5.2 Actual demonstration</li> <li>5.3 Authenticated portfolio (related certificates of training/seminar)</li> </ul>
6. Context of Assessment	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in actual workplace or simulated environment</li> </ul>

## COMMON COMPETENCIES

**UNIT OF COMPETENCY:** PREPARE CONSTRUCTION MATERIALS AND TOOLS

**UNIT CODE :** CON931201

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes on identifying, requesting and receiving construction materials and tools based on the required performance standards.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized</i> terms are elaborated in the Range of Variable
1. Identify materials	1.1 <b>Materials</b> are listed as per job requirements 1.2 Quantity and <b>description of materials</b> conform with the job requirements 1.3 Tools and accessories are identified according to job requirements
2. Requisition materials	2.1 Materials and tools needed are requested according to the list prepared 2.2 Request is done as per <b>company standard operating procedures (SOP)</b> 2.3 Substitute materials and tools are provided without sacrificing cost and quality of work
3. Receive and inspect materials	3.1 Materials and tools issued are inspected as per quantity and specification 3.2 Tools, accessories and materials are checked for damages according to enterprise procedures 3.3 Materials and tools are set aside to appropriate location nearest to the workplace

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials and Tools	1.1 Electrical supplies 1.2 Structural 1.3 Plumbing 1.4 Welding/pipefitting 1.5 Carpentry 1.6 Masonry
2. Description of Materials and Tools	2.1 Brand name 2.2 Size 2.3 Capacity 2.4 Kind of application
3. Company standard procedures	3.1 Job order 3.2 Requisition slip 3.3 Borrower slip

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Listed materials and tools according to quantity and job requirements</li> <li>1.2 Requested materials and tools according to the list prepared and as per company SOP</li> <li>1.3 Inspected issued materials and tools as per quantity and job specifications</li> <li>1.4 Tools provided with appropriate safety devices</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Types and uses of construction materials and tools</li> <li>2.2 Different forms</li> <li>2.3 Requisition procedures</li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Preparing materials and tools</li> <li>3.2 Proper handling of tools and equipment</li> <li>3.3 Following instructions</li> </ul>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace location</li> <li>4.2 Materials relevant to the unit of competency</li> <li>4.3 Technical plans, drawings and specifications relevant to the activities</li> </ul>
<p>5. Methods of assessment</p>	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation and oral questioning</li> </ul>
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the workplace or in a simulated workplace</li> <li>6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</li> </ul>

**UNIT OF COMPETENCY: OBSERVE PROCEDURES, SPECIFICATIONS AND MANUALS OF INSTRUCTIONS**

**UNIT CODE : CON311201**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes on identifying, interpreting, applying services to specifications and manuals and storing manuals.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Identify and access specification/manuals	1.1 Appropriate manuals are identified and accessed as per job requirements 1.2 Version and date of manual are checked to ensure that correct specification and procedures are identified
2. Interpret manuals	2.1 Relevant sections, chapters of specifications/manuals are located in relation to the work to be conducted 2.2 Information and procedure in the manual are interpreted in accordance with industry practices
3. Apply information in manual	3.1 <b>Manual</b> is interpreted according to job requirements 3.2 Work steps are correctly identified in accordance with manufacturer's specification 3.3 Manual data are applied according to the given task 3.4 All correct sequencing and adjustments are interpreted in accordance with information contained on the manual or specifications
4. Store manuals	4.1 Manual or specification is stored appropriately to prevent damage, ready access and updating of information when required in accordance with company requirements

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Procedures, Specifications and Manuals of Instructions	Kinds of Manuals: 1.1 Manufacturer's Specification Manual 1.2 Repair Manual 1.3 Maintenance Procedure Manual 1.4 Periodic Maintenance Manual

## EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Identified and accessed specification/manuals as per job requirements 1.2 Interpreted manuals in accordance with industry practices 1.3 Applied information in manuals according to the given task 1.4 Stored manuals in accordance with company requirements
2. Underpinning knowledge	2.1 Types of manuals used in construction sector 2.2 Identification of symbols used in the manuals 2.3 Identification of units of measurements 2.4 Unit conversion
3. Underpinning skills	3.1 Reading and comprehension skills required to identify and interpret construction manuals and specifications 3.2 Accessing information and data
4. Resource implications	The following resources should be provided: 4.1 All manuals/catalogues relative to construction sector
5. Methods of assessment	Competency should be assessed through: 5.1 Direct observation 5.2 Questions/interview  Assessment of underpinning knowledge and practical skills may be combined
6. Context of assessment	6.1 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines 6.2 Assessment may be conducted in the workplace or a simulated environment

**UNIT OF COMPETENCY: INTERPRET TECHNICAL DRAWINGS AND PLANS**  
**UNIT CODE : CON311202**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes in analyzing and interpreting symbols, data and work plan based on the required performance standards.

<b>ELEMENTS</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Analyze signs, symbols and data	1.1 <b>Technical plans</b> are obtained according to job requirements 1.2 Signs, symbols and data are identified according to job specifications 1.3 Signs symbols and data are determined according to <b>classification</b> or as appropriate in <b>drawing</b>
2. Interpret technical drawings and plans	2.1 Necessary <b>tools, materials</b> and equipment are identified according to the <b>plan</b> 2.2 Supplies and materials are listed according to specifications 2.3 Components, assemblies or objects are recognized as required 2.4 Dimensions are identified as appropriate to the plan 2.5 Specification details are matched with existing/available resources and in line with job requirements 2.6 Work plan is drawn following the specifications
3. Apply freehand sketching	3.1 Where applicable, correct freehand sketching is produced in accordance with the job requirements

## RANGE OF VARIABLES

VARIABLES	RANGE
1. Technical Plans	Including but not limited to: 1.1 Electrical plans 1.2 Structural plans 1.3 Architectural plans 1.4 Plumbing plans 1.5 Welding Procedures Specifications (WPS)
2. Work plan	2.1 Job requirements 2.2 Installation instructions 2.3 Components instruction
3. Classification	Including but not limited to: 3.1 Electrical 3.2 Mechanical 3.3 Plumbing
4. Drawing	4.1 Drawing symbols 4.2 Alphabet of lines 4.3 Orthographic views 4.4 Front view 4.5 Right side view/left side view 4.6 Top view 4.7 Pictorial 4.8 Schematic diagram 4.9 Electrical drawings 4.10 Structural drawings 4.11 Plumbing drawings 4.12 Water 4.13 Sewerage/Drainage 4.14 Ventilation 4.15 Welding symbols
5. Tools and materials	Including but not limited to: 5.1 Compass 5.2 Divider 5.3 Rulers 5.4 Triangles 5.5 Drawing tables 5.6 Computer

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified and determined signs, symbols and data according to work plan, job requirements and classifications</li> <li>1.2 Identified tools and equipment in accordance with job requirements</li> <li>1.3 Listed supplies and materials according to blueprint specifications</li> <li>1.4 Drawn work plan following specifications</li> <li>1.5 Demonstrated ability to determine job specifications based on working / technical drawing</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 TRADE MATHEMATICS               <ul style="list-style-type: none"> <li>2.1.1 Linear measurement</li> <li>2.1.2 Dimension</li> <li>2.1.3 Unit conversion</li> </ul> </li> <li>2.2 BLUEPRINT READING AND PLAN SPECIFICATION               <ul style="list-style-type: none"> <li>2.2.1 Electrical, mechanical plan, symbols and abbreviations</li> <li>2.2.2 Drawing standard symbols</li> </ul> </li> <li>2.3 TRADE THEORY               <ul style="list-style-type: none"> <li>2.3.1 Basic technical drawing</li> <li>2.3.2 Types technical plans</li> <li>2.3.3 Various types of drawings</li> <li>2.3.4 Notes and specifications</li> </ul> </li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Interpreting drawing/orthographic drawing</li> <li>3.2 Interpreting technical plans</li> <li>3.3 Matching specification details with existing resources</li> <li>3.4 Following instructions</li> <li>3.5 Handling of drawing instruments</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace</li> <li>4.2 Drawings and specification relevant to task</li> <li>4.3 Materials and instrument relevant to proposed activity</li> </ul>

5. Methods of Assessment	Competency should be assessed through: 5.1 Direct Observation 5.2 Questions/Interview 5.3 Written test related to underpinning knowledge
6. Context of Assessment	6.1 Competency assessment may occur in the workplace or in any appropriate simulated environment 6.2 Assessment shall be observed while task are being undertaken whether individually or in group 6.3 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

**UNIT OF COMPETENCY: PERFORM MENSURATIONS AND CALCULATIONS**  
**UNIT CODE : CON311203**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes on identifying and measuring objects based on the required performance standards.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms</i> are elaborated in the Range of Variable
1. Select measuring instruments	1.1 Object or component to be measured is identified, classified and interpreted according to the appropriate regular <b>geometric shape</b> 1.2 Measuring tools are selected/identified as per object to be measured or job requirements 1.3 Correct specifications are obtained from relevant sources 1.4 Appropriate measuring instruments are selected according to job requirements 1.1 Alternative measuring tools are used without sacrificing cost and quality of work
2. Carry out measurements and calculations	2.1 Accurate <b>measurements</b> are obtained according to job requirements 2.2 Alternative measuring tools are used without sacrificing cost and quality of work 2.3 <b>Calculation</b> needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/) including but not limited to: trigonometric functions, algebraic computations 2.4 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks 2.5 Numerical computation is self-checked and corrected for accuracy 2.6 Instruments are read to the limit of accuracy of the tool 2.7 Systems of measurement identified and converted according to job requirements/ISO 2.8 Workpieces are measured according to job requirements

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Geometric shape	Including but is not limited to: 1.1 Round 1.2 Square 1.3 Rectangular 1.4 Triangle 1.5 Sphere 1.6 Conical
2. Measuring instruments	Including but not limited to: 2.1 Micrometer (In-out, depth) 2.2 Vernier caliper (out, inside) 2.3 Dial gauge with mag, std. 2.4 Straight edge 2.5 Thickness gauge 2.6 Torque gauge 2.7 Small hole gauge 2.8 Telescopic gauge 2.9 Try-square 2.10 Protractor 2.11 Combination gauge 2.12 Steel rule 2.13 Voltmeter 2.14 Ammeter 2.15 Mega-ohmeter 2.16 Kilowatt hour meter 2.17 Gauges 2.18 Thermometers
3. Measurements and calculations	3.1 Linear 3.2 Volume 3.3 Area 3.4 Wattage 3.5 Voltage 3.6 Resistance 3.7 Amperage 3.8 Frequency 3.9 Impedance

VARIABLE	RANGE
	3.10 Conductance 3.11 Capacitance 3.12 Displacement 3.16 Inside diameter 3.17 Circumference 3.18 Length 3.19 Thickness 3.20 Outside diameter 3.21 Taper 3.22 Out of roundness 3.23 Oil clearance 3.24 End play/Thrust clearance

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <p>1.1 Selected and prepared appropriate measuring instruments in accordance with job requirements</p> <p>1.2 Performed measurements and calculations according to job requirements/ ISO</p>
<p>2. Underpinning knowledge</p>	<p>TRADE MATHEMATICS / MENSURATION</p> <p>2.1 Four fundamental operation</p> <p>2.2 Linear measurement</p> <p>2.3 Dimensions</p> <p>2.4 Unit conversion</p> <p>2.5 Ratio and proportion</p> <p>2.6 Trigonometric functions</p> <p>2.8 Algebraic equations</p>
<p>3. Underpinning skills</p>	<p>3.1 Performing calculation by addition, subtraction, multiplication and division; trigonometric functions and algebraic equations</p> <p>3.2 Visualizing objects and shapes</p> <p>3.3 Interpreting formulas for volume, areas, perimeters of plane and geometric figures</p> <p>3.4 Proper handling of measuring instruments</p>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <p>4.1 Workplace location</p> <p>4.2 Problems to solve</p> <p>4.3 Measuring instrument appropriate to carry out tasks</p> <p>4.4 Instructional materials relevant to the propose activity</p> <p>Assessment of underpinning knowledge and practical skills may be combined</p>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <p>5.1 Actual demonstration</p> <p>5.2 Direct observation</p> <p>5.3 Written test/questioning related to underpinning knowledge</p>
<p>6. Context of assessment</p>	<p>6.1 Competency assessment may occur in workplace or any appropriate simulated environment</p> <p>6.2 Assessment shall be observed while task are being undertaken whether individually or in group</p> <p>6.3 Competency assessment must be undertaken in accordance with the TESDA assessment guidelines</p>

**UNIT OF COMPETENCY: MAINTAIN TOOLS AND EQUIPMENT**  
**UNIT CODE : CON311204**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes on checking condition, performing preventive maintenance and storing of tools and equipment based on the required performance standards.

<b>ELEMENTS</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized</i> terms are elaborated in the Range of Variables
1. Check condition of tools and equipment	1.1 <b>Materials, tools and equipment</b> are identified according to classification and job requirements 1.2 Non-functional tools and equipment are segregated and labeled according to classification 1.3 Safety of tools and equipment are observed in accordance with manufacturer's instructions 1.4 Condition of <b>PPE</b> are checked in accordance with manufacturer's instructions
2. Perform basic preventive maintenance	2.1 Appropriate lubricants are identified according to types of equipment 2.2 Tools and equipment are lubricated according to preventive maintenance schedule or manufacturer's specifications 2.3 Measuring instruments are checked and calibrated in accordance with manufacturer's instructions 2.3 Tools are cleaned and lubricated according to standard procedures 2.5 Defective instruments, equipment and accessories are inspected and replaced according to manufacturer's specifications 2.6 Tools are inspected, repaired and replaced after use 2.7 Work place is cleaned and kept in safe state in line with OSHA regulations

<p>3. Store tools and equipment</p>	<p>3.1 Inventory of tools, instruments and equipment are conducted and recorded as per company practices</p> <p>3.2 Tools and equipment are stored safely in appropriate locations in accordance with manufacturer's specifications or company procedures</p>
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## RANGE OF VARIABLES

VARIABLES	RANGE
1. Materials	Including but not limited to: 1.1 Lubricants 1.2 Cleaning materials 1.3 Rust remover 1.4 Rugs 1.5 Spare parts
2. Tools and equipment	Including but not limited to: 2.1 Tools Cutting tools - hacksaw, crosscut saw, rip saw Boring tools - auger, brace, grinlet, hand drill Holding tools - vise grip, C-clamp, bench vise Threading tools - die and stock, taps 2.2 Measuring instruments/equipment
3. PPE	Including but not limited to: 3.1 Goggles 3.2 Gloves 3.3 Safety shoes 3.4 Aprons/Coveralls
4. Forms	4.1 Maintenance schedule forms 4.2 Requisition slip 4.3 Inventory Form 4.4 Inspection Form 4.5 Procedures

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Selected and used appropriate processes, tools and equipment to carry out task</li> <li>1.2 Identified functional and non-functional tools and equipment</li> <li>1.3 Checked, lubricated and calibrated tools, equipment and instruments according to manufacturer's specifications</li> <li>1.4 Replaced defective tools, equipment and their accessories</li> <li>1.5 Observed and applied safe handling of tools and equipment and safety work practices</li> <li>1.6 Prepared and submitted inventory report, where applicable</li> <li>1.7 Maintained workplace in accordance with OHSA regulations</li> <li>1.8 Stored tools and equipment safely in appropriate locations and in accordance with company practices</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 SAFETY PRACTICES               <ul style="list-style-type: none"> <li>2.1.1 Use of PPE</li> <li>2.1.2 Handling of tools and equipment</li> <li>2.1.3 Good housekeeping</li> </ul> </li> <li>2.2 MATERIALS, TOOLS AND EQUIPMENT               <ul style="list-style-type: none"> <li>2.2.1 Types and uses of lubricants</li> <li>2.2.2 Types and uses of cleaning materials</li> <li>2.2.3 Types and uses of measuring instruments and equipment</li> </ul> </li> <li>2.3 PREVENTIVE MAINTENANCE               <ul style="list-style-type: none"> <li>2.3.1 Methods and techniques</li> <li>2.3.2 Procedures</li> </ul> </li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Preparing maintenance materials, tools and equipment</li> <li>3.2 Proper handling of tools and equipment</li> <li>3.3 Performing preventive maintenance</li> <li>3.4 Following instructions</li> </ul>
<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace</li> <li>4.2 Maintenance schedule</li> <li>4.1 Maintenance materials, tools and equipment relevant to the proposed activity/task</li> </ul>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation</li> <li>5.2 Written test/questioning relevant to Underpinning knowledge</li> </ul>
<p>6. Context of assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency assessment may occur in workplace or any appropriate simulated environment</li> <li>6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines</li> </ul>

## CORE COMPETENCIES

**UNIT OF COMPETENCY:**     **INSTALL ARCHITECTURAL CEILING, WALL SHEATS/PANELS/BOARDS AND FLOOR FINISHES**

**UNIT CODE**                   **CON712322**

**UNIT DESCRIPTOR**        **:**     This unit covers the knowledge, skills and attitudes in installing architectural ceiling, wall sheats/panels/boards and floor finishes.

ELEMENT	PERFORMANCE CRITERIA
<p>1. Prepare materials for installing architectural ceilings, wall sheats/panels/boards and floor finishes</p>	<p style="text-align: center;"><i>Italicized terms</i> are elaborated in the Range of Variables</p> <p>1.1 Appropriate <b>PPE</b> is selected and used according to job requirements and OSHA specifications.</p> <p>1.2 Related <b>plans and details</b> are and interpreted according to job requirements.</p> <p>1.3 <b>Materials, power and hand tools and equipment</b> are selected and prepared consistent with job requirements</p> <p>1.4 Materials are re-checked according to specifications.</p> <p>1.5 <b>Unexpected situations</b> are dealt with according to company rules and regulations.</p> <p>1.6 Housekeeping is performed according to safety regulations.</p>
<p>2. Establish lay-out of wall/floor and ceiling pattern</p>	<p>2.1 Appropriate PPE is used according to job requirements and safety regulations</p> <p>2.2 Lay-out is located according to job specifications.</p> <p>2.3 Materials are cut and fitted according to required size with <math>\pm 3</math> mm for squareness, plumbness, levelness and dimension.</p> <p>2.4 Finished materials are in correct lay-out position.</p> <p>2.5 Unexpected situations are dealt with according to company rules and regulations.</p> <p>2.6 Housekeeping is performed according to safety regulations.</p>

<p>3. Install architectural ceiling, wall sheats/panels/boards and floor finishes</p>	<p>3.1 Finished materials are aligned, tacked and nailed according to lay-out.  3.2 Installed finished materials' connections, levelness, smoothness are checked according to job requirements.  3.3 Work area is cleaned and made safe according to OSHA regulation.  3.4 Unexpected situations are dealt with according to company rules and regulations.</p>
<p>4. Complete work</p>	<p>4.1 Final checks are made to ensure that work conforms with instructions and to requirements  4.2 Completion report is prepared and submitted to appropriate officer.  4.3 Power and hand tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures  4.4 Work area is monitored as to cleanliness and safety</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. PPE	May include but not limited to: 1.1 Safety Shoes 1.2 Hard Hat 1.3 Goggles 1.4 Dust mask 1.5 Safety belts 1.6 Working clothes 1.7 Rope (lifeline) 1.8 Gloves
2. Plans and details	2.1 Reflected ceiling plan 2.2 Exact location 2.3 Dimensions 2.4 Symbols and abbreviations 2.5 Sections and details 2.6 Quality and quantity of materials
3. Materials	May include but not limited to: 3.1 Shop lumber 3.2 Finish sheathings, panels and boards 3.3 Finish and common wire nails 3.4 Metal screw 3.5 Adhesives 3.6 Decorative mouldings

<p>4. Power, hand tools and equipment</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>4.1 Saw</li> <li>4.2 Hammer</li> <li>4.3 Chalk lines</li> <li>4.4 Pencil</li> <li>4.5 Push-pull/zigzag rule</li> <li>4.6 Chisel</li> <li>4.7 Try square</li> <li>4.8 Plane</li> <li>4.9 Electric drill</li> <li>4.10 Screw gun</li> <li>4.11 Drill bits</li> <li>4.12 Screw driver (Philips and standard)</li> <li>4.13 Riveter</li> <li>4.14 Ramset</li> <li>4.15 Staple gun</li> </ul>
<p>5. Unexpected situations</p>	<ul style="list-style-type: none"> <li>5.1 Damage to materials, power or hand tools, equipment</li> <li>5.2 Injury to personnel</li> </ul>

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Competency assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Interpreted related plans and details according to job requirements.</li> <li>1.2 Selected, and prepared materials, hand tools and power tools, equipment and PPE are consistent with job requirements.</li> <li>1.3 Installed ceilings, wall sheats/ panels/boards and floor finishes in accordance with established procedures, job requirements and specifications.</li> <li>1.4 Complied with safety regulations for worksite operations.</li> <li>1.5 Followed safe and effective operational use of tools and equipment.</li> <li>1.6 Completed work operations without injury to personnel and damage to materials.</li> <li>1.7 Communicated interactively with others to ensure safe and effective workplace operations.</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Types and uses of PPE</li> <li>2.2 Mensuration</li> <li>2.3 Interpretation of plans and details</li> <li>2.4 Materials, hand tools, power tools and equipment use and specification</li> <li>2.5 5-S</li> <li>2.6 Procedures for installing architectural / ceilings / walls / panels and floor finishes</li> <li>2.7 Safe and effective use of power and hand tools, and equipment</li> <li>2.8 Economic use of material</li> <li>2.9 Material handling and storing</li> <li>2.10 Company rules and regulations</li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Using PPE</li> <li>3.2 Applying mensuration</li> <li>3.3 Interpreting plans and details</li> <li>3.4 Following safe and effective operational use of power and hand tools and equipment</li> <li>3.5 Selecting, preparing and using materials economically</li> <li>3.6 Following procedures for installing architectural / ceilings / walls / panels and floor finishes</li> <li>3.7 Applying 5S</li> <li>3.8 Following company rules and regulations</li> </ul>

<p>4. Resource implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Well ventilated and lighted work place location</li> <li>4.2 Power and hand tools and equipment appropriate to installing architectural ceiling / walls sheats/panels/boards and floor finishes</li> <li>4.3 Materials relevant to the proposed activity</li> <li>4.4 Plans and details relevant to the task</li> <li>4.5 Appropriate PPE</li> </ul>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation of application to tasks</li> <li>5.2 Questions related to underpinning knowledge</li> <li>5.3 Third party report</li> <li>5.4 Portfolio</li> </ul>
<p>6. Context for assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the work place or in a simulated work place setting</li> <li>6.2 Assessment shall be done while tasks are undertaken individually under limited supervision.</li> </ul>

**UNIT OF COMPETENCY: FABRICATE / INSTALL DOOR / WINDOW JAMBS AND PANELS**

**UNIT CODE CON712323**

**UNIT DESCRIPTOR :** This unit covers the knowledge, skills and attitudes for fabricating / installing door / window jambs and panels.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms</i> are elaborated in the Range of Variables
1. Prepare materials for fabricating/ installing door/window jambs and panels	1.1 Appropriate <b>PPE</b> is selected and used according to job requirements and OSHA specifications. 1.2 Related <b>plans and details</b> are correctly identified and interpreted according to job requirements. 1.3 <b>Materials, power and hand tools and equipment</b> are selected and prepared consistent with job requirements. 1.4 Materials are re-checked for correct specifications and to ensure that it is free from <b>defects</b> otherwise defects are reported to immediate supervisor for appropriate action. 1.5 <b>Unexpected situations</b> are responded to in accordance with company rules and regulations. 1.6 Housekeeping is performed according to safety regulations.
2. Fabricate door/window jambs and panels	2.1 Materials are cut according to size and to required specifications with tolerance of +5 cm for length and $\pm 3$ mm for squareness and evenness. 2.2 Stock is planed, smoothed and squared to the required specifications of the door/window jamb and panels. 2.3 Stocks are <b>cut</b> and <b>shaped</b> according to specifications. 2.4 Parts are assembled according to dimensions and specifications. 2.5 Fabricated materials are correctly positioned for installation/assembly. 2.6 Unexpected situations are responded to in accordance with company rules and regulations. 2.7 Housekeeping is performed according to safety regulations.

<p>3. Assemble/install doors/ window jambs and panels</p>	<p>3.1 Pre-fabricated mouldings on door, window jambs and panels are installed according to specifications.</p> <p>3.2 Doors/jambs/panels and windows are installed to specified measurements with <math>\pm 3</math> mm for squareness, levelness, and plumbness.</p> <p>3.3 Temporary bracings are removed without causing damage to frame 24 hours after pouring mortar or concrete.</p> <p>3.4 Finishing hardware materials and accessories are attached to installed door, window jambs and panels and packed based on specifications.</p> <p>3.5 Unexpected situations are responded to in accordance with company rules and regulations.</p> <p>3.6 Work area is cleaned and made safe according to OSHA regulations.</p>
<p>4. Complete work</p>	<p>4.1 Final checks are made to ensure that work conforms with instructions and to requirements</p> <p>4.2 Completion report is prepared and submitted to appropriate officer.</p> <p>4.3 Power and hand tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures</p> <p>4.4 Work area is monitored as to cleanliness and safety</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. PPE	May include but not limited to: 1.1 Safety shoes 1.2 Dust mask 1.3 Working clothes 1.4 Gloves 1.5 Goggles 1.6 Hard hat
2. Plans and details	2.1 Exact location 2.2 Dimensions 2.3 Symbols and abbreviations 2.4 Sections and details 2.5 Quality and quantity of materials
3. Materials	May include but not limited to: 3.1 Surfaced and seasoned lumber 3.2 Surface sheath finishes 3.2.1 Plyboard 3.2.2 Plywood 3.2.3 Laminated veneer 3.2.4 Fornica 3.3 Finishing nails 3.4 Adhesives 3.5 Wood filler 3.6 Packing materials 3.6.1 Tape 3.6.2 Polyurethane/polyvinyl 3.7 Hardware finishes 3.7.1 Door knobs 3.7.2 Locks 3.7.3 Hinges and screws 3.7.4 Barrel bolts 3.7.5 Catches 3.7.6 Foot bolt 3.7.7 Door/eye viewer 3.7.8 Door stopper

<p>4. Power and hand tools and equipment</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>4.1 Portable circular saw</li> <li>4.2 Router</li> <li>4.3 Portable groove cutter</li> <li>4.4 Portable planer</li> <li>4.5 Electric drill</li> <li>4.6 Hand saw</li> <li>4.7 Hammer</li> <li>4.8 Try square</li> <li>4.9 Wood chisel</li> <li>4.10 Spirit level</li> <li>4.11 Leveling hose</li> <li>4.12 Pencil</li> <li>4.13 Plumb bob</li> <li>4.14 Push-pull tape / zigzag rule</li> <li>4.15 Plane</li> <li>4.16 Steel square</li> <li>4.17 Screw driver (Philips or standard)</li> <li>4.18 Hole saw</li> <li>4.19 Drill bits</li> <li>4.20 Miter box</li> </ul>
<p>5. Defects</p>	<ul style="list-style-type: none"> <li>5.1 Natural</li> <li>5.2 Manufacturer</li> </ul>
<p>6. Unexpected situations</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>5.1 Injury to personnel</li> <li>5.2 Damage to materials</li> </ul>
<p>7. Cut</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>7.1 Dovetail</li> <li>7.2 Finger joints</li> </ul>
<p>8. Shaped</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>8.1 Mouldings</li> <li>8.2 Rabbet cut</li> <li>8.3 Groove</li> </ul>

## E VIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Competency assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"><li>1.1 Identified and interpreted related plans and details according to job requirements</li><li>1.2 Selected, and prepared materials, power and hand tools and equipment and PPE are consistent with job requirements.</li><li>1.3 Fabricated/installed doors / window jambs and panels following standard procedures and job requirements.</li><li>1.4 Complied with safety regulations for worksite operations</li><li>1.5 Used power and hand tools safely and effectively</li><li>1.6 Communicated interactively with others to ensure safe and effective workplace operations</li><li>1.7 Completed work without injury to personnel or damage to materials.</li></ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"><li>2.1 Types and uses of PPE</li><li>2.2 Mensuration</li><li>2.3 Interpretation of related plans and details</li><li>2.4 Materials, power and hand tools, and equipment uses and specifications.</li><li>2.5 5-S</li><li>2.6 Knowledge of installing door / jambs / window panels processes</li><li>2.7 Principles of squareness, evenness and smoothness for stock and panel preparation and plumbness and levelness for installation of doors / jambs and window panels.</li><li>2.8 Finished and installed doors / window / jambs packing procedures</li><li>2.9 Safe and effective use of hand and power tools</li><li>2.10 Understand economic use of material</li><li>2.11 Knowledge of mounting finishing hardware</li><li>2.12 Company rules and regulations</li></ul>

<p>3. Underpinning skills</p>	<p>3.1 Using PPE  3.2 Applying mensuration  3.3 Interpreting related plans and details  3.4 Selecting, preparing and using materials, power and hand tools and equipment  3.5 Following fabricating and installing procedures for door / jambs and panels  3.6 Following packing procedures for jambs / windows and doors  3.7 Following safe and effective use of hand and power tools  3.8 Performing procedures for mounting finishing hardwares  3.9 Following company rules and regulations</p>
<p>4. Resource implications</p>	<p>The following resources should be provided:  4.1 Well-ventilated and lighted work place location  4.2 Power and hand tools and equipment appropriate to fabrication and installation processes  4.3 Materials relevant to the proposed activity  4.4 Plans and details relevant to the task  4.5 Appropriate PPE</p>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:  5.1 Direct observation of application to tasks  5.2 Questions related to underpinning knowledge  5.3 Third party report  5.4 Portfolio</p>
<p>6. Context for assessment</p>	<p>6.1 Competency may be assessed in the work place or in a simulated work place setting</p>

**UNIT OF COMPETENCY:**      **INSTALL STAIR COMPONENTS AND/OR PRE-FABRICATED STAIRS ASSEMBLY**

**UNIT CODE**                              **CON712324**

**UNIT DESCRIPTOR**            :      This unit covers the knowledge, skills and attitudes in installing stair components and/or pre-fabricated stairs assembly.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms</i> are elaborated in the Range of Variables
1. Prepare materials for installing stairs, balusters and railings	1.1 Appropriate <b>PPE</b> is selected and used according to job requirements and OSHA specifications. 1.2 Related <b>plans and details</b> are correctly identified and interpreted according to job requirements. 1.3 <b>Materials, power and hand tools and equipment</b> are selected and prepared consistent with job requirements. 1.4 Materials are re-checked based on specifications and <b>defects</b> and reported to immediate supervisor for appropriate action, if necessary. 1.5 <b>Unexpected situations</b> are responded to in accordance with company rules and regulations. 1.6 Housekeeping is performed according to safety regulations.
2. Fabricate stair components and/or stairs assembly	2.1 Appropriate PPE is used according to job requirements and safety regulations. 2.2 Stair case requirements are identified from working drawings and specifications. 2.3 Height and number of risers and width of tread are determined according to working drawings and specifications. 2.4 Stringer or stair horse is constructed in accordance with the height and number of risers and width of tread. 2.5 Steps/baluster/railings are prepared and cut using pattern with $\pm 1$ mm tolerance for squareness, evenness and smoothness and other dimensions. 2.6 Unexpected situations are dealt with in accordance with company rules and regulations. 2.7 Housekeeping is performed according to safety regulations.

<p>3. Install wooden stairs, balusters and railings and/or pre-fabricated stairs assembly</p>	<p>3.1 Appropriate PPE is used according to job requirements and safety regulations.</p> <p>3.2 Stair components are assembled and/or pre-fabricated stairs assembly are set out in accordance with working drawings and specifications.</p> <p>3.3 <b>Stair components</b> and/or pre-fabricated stairs assembly are installed in accordance with working drawings and specifications.</p> <p>3.4 Work area is cleaned and made safe according to OSHA regulations.</p> <p>3.5 Unexpected situations are dealt with in accordance with company rules and regulations.</p>
<p>4. Complete work</p>	<p>4.1 Final checks are made to ensure that work conforms with instructions and to requirements</p> <p>4.2 Completion report is prepared and submitted to appropriate officer.</p> <p>4.3 Power and hand tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures</p> <p>4.4 Work area is monitored as to cleanliness and safety</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. PPE	May include but not limited to: 1.1 Safety shoes 1.2 Working clothes 1.3 Hard hat 1.4 Gloves 1.5 Safety belt/body harness
2. Plans and details	2.1 Exact location 2.2 Dimensions 2.3 Symbols and abbreviations 2.4 Elevations 2.5 Sections and details 2.6 Quality and quantity of materials
3. Materials	May include but not limited to: 3.1 Surfaced and seasoned lumber 3.2 Other than wood 3.2.1 Balusters 3.2.2 Nosing 3.2.3 Railings 3.3 Finishing nails 3.4 Screw bolts 3.5 Angular plate or bracket

<p>4. Power and hand tools and equipment</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>4.1 Saw</li> <li>4.2 Hammer</li> <li>4.3 Try square</li> <li>4.4 Plane</li> <li>4.5 Steel square</li> <li>4.6 Portable planer</li> <li>4.7 Electric drill</li> <li>4.8 Table saw</li> <li>4.9 Surfacer</li> <li>4.10 Router</li> <li>4.11 Jointer planer</li> <li>4.12 Chisel</li> <li>4.13 Spirit level</li> <li>4.14 Leveling hose</li> <li>4.15 Pencil</li> <li>4.16 Plumb bob</li> <li>4.17 Push-pull / zigzag rule</li> <li>4.18 Ladder</li> <li>4.19 Scaffold</li> <li>4.20 Approved lifeline</li> </ul>
<p>5. Defects</p>	<ul style="list-style-type: none"> <li>5.1 Natural</li> <li>5.2 Manufacturer</li> </ul>
<p>6. Stair components</p>	<ul style="list-style-type: none"> <li>6.1 Balusters</li> <li>6.2 Railings</li> <li>6.3 Stringers</li> <li>6.4 Tread/unit run</li> <li>6.5 Nosing</li> <li>6.6 Riser cover</li> </ul>

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Competency assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified and interpreted related plans and details according to job requirements.</li> <li>1.2 Selected and prepared materials, power and hand tools, equipment and PPE are consistent with job requirements.</li> <li>1.3 Installed stair components and/or pre-fabricated assembled stair according to standard procedures, job requirements and specifications.</li> <li>1.4 Complied with safety regulations for worksite operations</li> <li>1.5 Demonstrated safe and effective operational use of tools and equipment.</li> <li>1.6 Completed work operations without injury and damage to materials.</li> <li>1.7 Communicated interactively with others to ensure safe and effective workplace operations.</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Types and uses of PPE</li> <li>2.2 Mensuration</li> <li>2.3 Shop/Trade Mathematics</li> <li>2.4 Interpretation of related plans and details</li> <li>2.5 Materials, power and hand tools uses and specifications</li> <li>2.6 5-S</li> <li>2.7 Principles for installing stairs and/or pre-fabricated stairs assembly.</li> <li>2.8 Procedures for installing stair components and/or pre-fabricated stairs assembly</li> <li>2.9 Safe and effective operational use of power and hand tools</li> <li>2.10 Understand economic use of material</li> <li>2.11 Company rules and regulations</li> <li>2.12 Safety rules and regulations</li> </ul>

<p>3. Underpinning skills</p>	<p>3.1 Using PPE  3.2 Applying mensuration and shop/trade Mathematics  3.3 Interpreting related plans and details  3.4 Preparing and selecting materials, power and hand tools and equipment  3.5 Following 5S  3.6 Following procedures for installing stair components and/or pre-fabricated stairs assembly  3.7 Following safe and effective operational use of power and hand tools  3.8 Using materials economically  3.9 Following company rules and regulations  3.10 Applying safety rules and regulations</p>
<p>4. Resource implications</p>	<p>The following resources should be provided:  4.1 Work place location  4.2 Power and hand tools and equipment appropriate for installing stair components and/or pre-fabricated stairs assembly.  4.3 Materials relevant to the proposed activity  4.4 Working drawings and specifications relevant to the task  4.5 Appropriate PPE</p>
<p>5. Methods of assessment</p>	<p>Competency should be assessed through:  5.1 Direct observation of application to tasks  5.2 Questions related to underpinning knowledge</p>
<p>6. Context for assessment</p>	<p>6.1 Competency may be assessed in the work place or in a simulated work place setting.</p>

**UNIT OF COMPETENCY:**      **INSTALL BUILT-IN AND/OR PRE-FABRICATED CABINETS**  
**UNIT CODE**                      **CON712325**  
**UNIT DESCRIPTOR**         :    This unit covers the knowledge, skills and attitudes in installing built-in and/or pre-fabricated cabinets.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Italicized terms</i> are elaborated in the Range of Variables
1. Prepare materials for installing built-in and or pre-fabricated cabinets	1.1 Appropriate <b>PPE</b> is selected and used according to job requirements and OSHA specifications. 1.2 Related <b>plans and details</b> are correctly identified and interpreted according to job requirements. 1.3 <b>Materials, power and hand tools and equipment</b> are selected and prepared consistent with job requirements 1.4 Materials are re-checked based on specifications and <b>defects</b> and reported to immediate supervisor for appropriate action, if necessary. 1.5 <b>Unexpected situations</b> are responded to in accordance with company rules and regulations. 1.6 Housekeeping is performed according to safety regulations.
2. Fabricate built-in cabinet components and/or pre-fabricated cabinet	2.1 Appropriate PPE is used according to job requirements and safety regulations. 2.2 Cabinet location is identified from working drawings and specifications. 2.3 <b>Cabinet components</b> are fabricated and/or pre-fabricated cabinets are prepared/assembled according to working drawings and specifications. 2.4 Unexpected situations are dealt with in accordance with company rules and regulations. 2.5 Housekeeping is performed according to safety regulations.

ELEMENT	PERFORMANCE CRITERIA <i>Italicized terms</i> are elaborated in the Range of Variables
3. Install built-in cabinet components and/or pre-fabricated cabinet assembly	3.1 Appropriate PPE is used according to job requirements and safety regulations. 3.2 Built-in cabinet components and/or pre-fabricated cabinet assembly are set-out in accordance with working drawings and specifications. 3.3 Built-in cabinet components and/or pre-fabricated cabinet assembly are installed in accordance with working drawings and specifications. 3.4 Finishing hardwares are installed as per <b><i>working drawings</i></b> . 3.5 Work area is cleaned and made safe according to OSHA regulations. 3.6 Unexpected situations are dealt with in accordance with company rules and regulations.
4. Complete work	4.1 Final checks are made to ensure that work conforms with instructions and to requirements 4.2 Completion report is prepared and submitted to appropriate officer. 4.3 Power and hand tools, equipment and any surplus resources and materials are checked and monitored in accordance with established procedures 4.4 Work area is monitored as to cleanliness and safety

## RANGE OF VARIABLES

VARIABLE	RANGE
1. PPE	May include but not limited to: 1.1 Safety shoes 1.2 Hard hat 1.3 Gloves 1.4 Working clothes 1.5 Goggles 1.6 Dust mask
2. Plans and details	2.1 Exact location 2.2 Dimensions 2.3 Elevations 2.4 Sections and details 2.5 Quality and quantity of materials
3. Materials	May include but not limited to: 3.1 Surfaced and seasoned lumber 3.2 Finishing nails 3.3 Cabinet accessories as specified 3.4 Laminated veneer 3.5 Adhesives 3.6 Plywood 3.7 Plyboard

<p>4. Power and hand tools and equipment</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>4.1 Measuring tools</li> <li>4.2 Portable planer</li> <li>4.3 Circular saw</li> <li>4.4 Electric drill</li> <li>4.5 Planer</li> <li>4.6 Portable router</li> <li>4.7 Portable jigsaw</li> <li>4.8 Marking gauge</li> <li>4.9 Screw driver</li> <li>4.10 Hammer</li> <li>4.11 Philip screw</li> <li>4.12 Pencil</li> <li>4.13 Plumb bob</li> <li>4.14 Spirit level</li> <li>4.15 Wood chisel</li> <li>4.16 Try-square</li> <li>4.17 Scaffolding</li> <li>4.18 Levelling hose</li> <li>4.19 Steel square</li> </ul>
<p>5. Defects</p>	<ul style="list-style-type: none"> <li>5.1 Natural</li> <li>5.2 Manufacturer</li> </ul>
<p>6. Unexpected situations</p>	<ul style="list-style-type: none"> <li>6.1 Damage to material</li> <li>6.2 Injury to personnel</li> </ul>
<p>7. Cabinet components</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>7.1 Door panel</li> <li>7.2 Shelves</li> <li>7.3 Drawers</li> <li>7.4 Roller</li> <li>7.5 Catches</li> <li>7.6 Drawer locks</li> <li>7.7 Hinges <ul style="list-style-type: none"> <li>7.7.1 Piano hinge</li> <li>7.7.2 Butt</li> <li>7.7.3 Concealed hinge</li> <li>7.7.4 Double-action hinge</li> </ul> </li> <li>7.8 Pullers and knobs</li> </ul>
<p>8. Working drawings</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> <li>8.1 Manufacturer's instructions manual</li> <li>8.2 Mounting details</li> <li>8.3 Cabinet detailed drawings</li> </ul>

## EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Competency assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified and interpreted related plans and details according to job requirements.</li> <li>1.2 Selected and prepared materials, power and hand tools, equipment and PPE are consistent with job requirements.</li> <li>1.3 Installed built-in and/or pre-fabricated cabinets according to standard procedures, job requirements and specifications.</li> <li>1.4 Complied with safety regulations for worksite operations</li> <li>1.5 Demonstrated safe and effective operational use of tools and equipment.</li> <li>1.6 Completed work operations without injury and damage to materials.</li> <li>1.7 Communicated interactively with others to ensure safe and effective workplace operations.</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Types and uses of PPE</li> <li>2.2 Mensuration</li> <li>2.3 Shop/Trade Mathematics</li> <li>2.4 Interpretation of related plans and details</li> <li>2.5 Materials, power and hand tools uses and specifications</li> <li>2.6 5-S</li> <li>2.7 Principles for installing built-in and/or pre-fabricated cabinets.</li> <li>2.8 Procedures for installing built-in and/or pre-fabricated cabinets</li> <li>2.9 Safe and effective operational use of power and hand tools</li> <li>2.10 Understand economic use of material</li> <li>2.11 Company rules and regulations</li> <li>2.12 Safety rules and regulations</li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Using PPE</li> <li>3.2 Applying mensuration and shop/trade Mathematics</li> <li>3.3 Interpreting related plans and details</li> <li>3.4 Preparing and selecting materials, power and hand tools and equipment</li> <li>3.5 Following 5S</li> <li>3.6 Following procedures for installing built-in and/or pre-fabricated cabinets</li> <li>3.7 Following safe and effective operational use of power and hand tools</li> <li>3.8 Using materials economically</li> <li>3.9 Following company rules and regulations</li> <li>3.10 Applying safety rules and regulations</li> </ul>

4. Resource implications	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace location</li> <li>4.2 Power and hand tools and equipment appropriate to installing built-in and/or pre-fabricated cabinet</li> <li>4.3 Materials relevant to the proposed activity</li> <li>4.4 Drawings and specifications relevant to the task</li> <li>4.5 Appropriate PPE</li> </ul>
5. Methods of assessment	<p>Competency should be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation of application to tasks</li> <li>5.2 Questions related to underpinning knowledge</li> </ul>
6. Context for assessment	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed in the workplace or in a simulated workplace setting</li> </ul>

## SECTION 3 TRAINING STANDARDS

These standards are set to provide technical and vocational education and training (TVET) providers with information and other important requirements to consider when designing training programs for certain occupations.

They include information on curriculum design, training delivery, trainee entry requirements, tools and equipment, training facilities and trainer's qualification among others.

### 3.1 CURRICULUM DESIGN

Course Title: **CARPENTRY**

NC Level: **III**

Suggested Nominal Training Duration:

**20 hours (Basic)**  
**24 hours (Common)**  
**320 hours (Core)**

Course Description:

This course is designed to enhance the knowledge, skills and desirable work attitude in Carpentry NC III. It covers core competencies to install architectural ceiling/wall sheats / panels and floor finishes; fabricate / install door / window jambs and panels; install stair components and / or pre-fabricated; and stairs assembly. Install built-in / pre-fabricated cabinet.

### BASIC COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Lead workplace communication	1.1 Communicate information about workplace processes 1.2 Lead workplace discussions 1.3 Identify and communicate issues arising in the workplace	Lecture  Demonstration  Practical exercises	Observation and oral questioning  Written test
2. Lead small team	2.1 Provide team leadership 2.2 Assign responsibilities 2.3 Set performance expectations for team members 2.4 Supervised team performance	Lecture  Demonstration  Practical exercises	Observation and oral questioning  Written test

<p>3. Solve workplace problems related to work activities</p>	<p>3.1 Identify the problem  3.2 Determine fundamental cause problem  3.3 Determine correct / preventive action  3.4 Provide recommendation to manager</p>	<p>Lecture  Demonstration  Practical exercises</p>	<p>Observation and oral questioning  Written test</p>
<p>4. Develop and practice negotiation skills</p>	<p>4.1 Identify relevant information in planning negotiations  4.2 Participate in negotiations  4.2 Document areas for agreement</p>	<p>Direct observation  Simulation / role playing  Case studies</p>	<p>Written test  Practical / performance test</p>
<p>5. Use mathematical concepts and techniques</p>	<p>5.1 Identify mathematical tools and techniques to solve problem  5.2 Apply mathematical procedures / solution  5.3 Analyze results</p>	<p>Direct observation  Simulation / role playing  Case studies</p>	<p>Written test  Practical / performance test</p>
<p>6. Use relevant technologies</p>	<p>6.1 Identify appropriate technology  6.2 Apply relevant technology  6.3 Maintenance / enhance relevant technology</p>	<p>Direct observation  Simulation / role playing  Case studies</p>	<p>Written test  Practical performance test</p>

## COMMON COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Prepare construction materials and tools	1.1 Identify Materials 1.2 Requisition Materials 1.3 Receive and inspect materials	Audio Visual Simulation Discussion Practical Exercise Demonstration	Direct observation Questions or interview Portfolio (credentials) Written / Oral Test Demonstration
2. Observe procedures, Specifications and Manuals of Instructions	2.1 Identify and access specification/ manuals	Audio Visual Simulation Discussion Practical Lab Demonstration	Direct observation Oral questioning Written test or examination Third party report Demonstration (able to impart knowledge and skills)

<p>3. Perform mensuration and calculation</p>	<p>3.1 Select measuring instruments</p> <p>3.2 Carry out measurements and calculations</p>	<p>Audio Visual Simulation</p> <p>Discussion Practical Lab Demonstration</p>	<p>Direct observation</p> <p>Oral questioning</p> <p>Written test or examination</p> <p>Third party report</p> <p>Demonstration (able to impart knowledge and skills)</p>
<p>4. Maintain tools and equipment</p>	<p>4.1 Check condition of tools and equipment</p> <p>4.2 Perform basic preventive maintenance</p> <p>4.3 Sharpen edge and tooth cutting tools</p> <p>4.4 Store tools and equipment</p>	<p>Audio Visual Simulation</p> <p>Discussion Practical Lab Demonstration</p>	<p>Direct observation of application of tasks</p> <p>Oral questioning</p> <p>Written test or examination</p> <p>Third party report</p> <p>Demonstration</p>
<p>5. Interpret technical drawings and plans</p>	<p>5.1 Read / Interpret blueprints and plans</p> <p>5.2 Perform freehand sketching</p>	<p>Lecture</p> <p>Demonstration</p> <p>Practical exercises</p>	<p>Demonstration and oral questioning</p> <p>Written test</p>

## CORE COMPETENCIES

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Install architectural ceiling, wall sheats / panels and floor finishes	1.1 Select, check and prepare materials and tools in installing architectural ceiling, wall frames ,panels and floor finishes  1.2 Established lay-out of wall / floor and ceiling pattern  1.3 Install architectural ceiling wall/sheet / panels and floor finishes according to job requirements	Audio Visual  Simulation  Discussion practical lab  Demonstration	Direct observation  Questions or interview  Portfolio (credentials)  Written Test (about symbols)  Demonstration
2. Fabricate / install door / window jambs and panels	2.1 Select and prepare power/hand tools and materials required in fabricating door/widow jambs/panels  2.2 Fabricate jambs/ panels of doors/windows according to plans  2.3 Install fabricated door / window jambs / panels and pre-fabricated moldings	Audio Visual  Simulation  Discussion practical lab  Demonstration	Direct observation  Questions or interview  Portfolio (credentials)  Written Test (about symbols)  Demonstration

<b>Unit of Competency</b>	<b>Learning Outcomes</b>	<b>Methodology</b>	<b>Assessment Approach</b>
3. Install stair components and / or pre-fabricated stairs assembly	<p>3.1 Interpret plans, working drawings, specifications and identify construction materials according to job requirements</p> <p>3.2 Prepare materials for installing of stair components , stair balusters and railings</p> <p>3.3 Fabricate stair component and /or stair assembly</p> <p>3.4 Install wooden stairs, balusters and railings and / or pre-fabricated stairs assembly</p>	<p>Audio Visual</p> <p>Simulation</p> <p>Discussion practical lab</p> <p>Demonstration</p>	<p>Audio Visual</p> <p>Simulation</p> <p>Discussion practical lab</p> <p>Demonstration</p>
4. Install built-in / pre-fabricated cabinet	<p>4.1 Prepare materials, tools and equipment for installing built-in and /or pre-fabricated cabinets</p> <p>4.2 Fabricate/assemble built-in cabinet components and/or pre-fabricated cabinet</p> <p>4.3 Assemble and install built-in and pre-fabricated cabinet components</p>	<p>Audio Visual</p> <p>Simulation</p> <p>Discussion practical lab</p> <p>Demonstration</p>	<p>Direct observation</p> <p>Written test or examination</p> <p>Questioning</p> <p>Third party report (to include report on work attitude)</p> <p>Demonstration / Simulation</p>

### 3.2 TRAINING DELIVERY

The delivery of training should adhere to the design of the curriculum. Delivery should be guided by the 10 basic principles of competency-based TVET.

- The training is based on curriculum developed from the competency standards;
- Learning is modular in its structure;
- Training delivery is individualized and self-paced;
- Training is based on work that must be performed;
- Training materials are directly related to the competency standards and the curriculum modules;
- Assessment is based in the collection of evidence of the performance of work to the industry required standard;
- Training is based both on and off-the-job components;
- Allows for recognition of prior learning (RPL) or current competencies;
- Training allows for multiple entry and exit; and
- Approved training programs are Nationally Accredited

The competency-based TVET system recognizes various types of delivery modes, both on and off-the-job as long as the learning is driven by the competency standards specified by the industry. The following training modalities may be adopted when designing training programs:

- The dualized mode of training delivery is preferred and recommended. Thus programs would contain both in-school and in-industry training or fieldwork components. Details can be referred to the Dual Training System (DTS) Implementing Rules and Regulations.
- Modular/self-paced learning is a competency-based training modality wherein the trainee is allowed to progress at his own pace. The trainer just facilitates the training delivery.
- Peer teaching/mentoring is a training modality wherein fast learners are given the opportunity to assist the slow learners.
- Supervised industry training or on-the-job training is an approach in training designed to enhance the knowledge and skills of the trainee through actual experience in the workplace to acquire specific competencies prescribed in the training regulations.

- Distance learning is a formal education process in which majority of the instruction occurs when the students and instructor are not in the same place. Distance learning may employ correspondence study, audio, video or computer technologies.

### **3.3 TRAINEE ENTRY REQUIREMENTS**

This section specifies the qualifications of trainees. Other requirements like health and physical are also stated. Passing entry written examinations may also be indicated if necessary.

- can communicate both oral and written
- physically and mentally fit
- With good moral character
- can perform basic mathematical computation and mensuration
- Ability to communicate ideas

### 3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS FOR CARPENTRY NC III

Recommended list of tools, equipment and materials for the training of 25 trainees for Carpentry – NC III

TOOLS		EQUIPMENT		MATERIALS	
QTY		QTY		QTY	
25 pcs	Cross cut saw	5 sets	H-frame scaffolds,	25 pcs	Lumber, 2"x6"x8', kiln dried, tangile
25 pcs	Claw hammer 8 oz	2 unit	Portable electric drill	25 pcs	Lumber, 2"x6"x12', kiln dried, tangile
25 pcs	Claw hammer 16 oz	2 unit	Portable planer	50 pcs	Lumber, 2"x2"x12', kiln dried, tangile
25 pcs	Chalk line reel	2 unit	Portable circular saw	25 pcs	Wood moulding, 1"x4"x8', ogee
25 pcs	Pencil			25 pcs	Wood moulding, 1"x1"x8', quarter round
25 sets	Nylon string			25 pcs	Wood moulding, 1"x1"x8', cove
25 pcs	Pull-push rule, 15 meters			50 pcs	rough lumber 2"x2"x12'
5 pcs	Crow bar			50 pcs	Loose pin hinges, 4"
25 pcs	Framing square			2 kg	Finishing wire nail, 1"
25 pcs	Try square			2 kg	Finishing wire nail, 1½ inches
5 pcs	Spirit level, 36 in.			2 kg	Finishing wire nail, 2 inches
1 pcs	Automatic level			2 kg	Finishing wire nail, 3 inches
25 pcs	Nail pouch			2 kg	Common wire nail, 1"
25 set	Nail set			2 kg	Common wire nail, 1½ inches
12 pcs	Chisel, ¼"			4 kg	Common wire nail, 2 inches
12 pcs	Chisel, ½ "			4 kg	Common wire nail, 3 inches
12 pcs	Chisel, ¾ "			25 pcs	Plywood, 1/4"x4'x8'
12 pcs	Chisel, 2"			5 liters	White glue
6 pcs	Adjustable wrench, 8 inches			<b>LEARNING MATERIALS</b>	
6 pcs	Adjustable wrench, 12 inches				Interactive instructional modules

TOOLS		EQUIPMENT		MATERIALS	
QTY		QTY		QTY	
1 set	Combination spanner, 8mm to 24mm				Books in carpentry
12 m	Transparent hose, white, 3/8 in diameter				
12 m	Transparent hose, white, 1/4 in.				
1 pcs	Hard hat, white, (for trainer)				
25 pcs	Hard hat, yellow (for trainees)				
25 pairs	Gloves, knitted				
25 pairs	Safety shoes				
25 pcs	Goggle				

### 3.5 TRAINING FACILITIES

Based on a class size of 25 students/trainees

<u>Space Requirement</u>	<u>Size in Meters</u>	<u>Area in Sq. Meters</u>	<u>Total Area in Sq. Meters</u>
Student/Trainee Working Space		6	150
Contextual Learning Laboratory / Lecture Room		20	20
Learning Resource Center		20	20
Tool Room/Storage		10	10
Wash room		10	10
Circulation area		60	60
<b><u>TOTAL AREA</u></b>			<b>270</b>

### 3.6 TRAINER'S QUALIFICATION CONSTRUCTION SECTOR

#### CARPENTRY – NC III

- Must have undergone training on Training Methodology II (TM II)
- He must be a holder of at least National Certificate Level III
- Good moral character
- Must be physically and mentally fit
- \*Must have 1 year industry experience and/or teaching experience

\*Optional. Only when required by the hiring institution

Reference: TESDA Board Resolution No. 2004-03

### 3.7 INSTITUTIONAL ASSESSMENT

Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

## **SECTION 4 NATIONAL ASSESSMENT AND CERTIFICATION ARRANGEMENTS**

- 4.1. To attain the National Qualification of Carpentry NC III, the candidate must demonstrate competence through project-type assessment covering all the units listed in Section 1. Successful candidates shall be awarded a National Certificate signed by the TESDA Director General.
- 4.2. The qualification of Carpentry NC III maybe attained through:
  - 4.2.1 Accumulation of Certificates of Competency (COCs) in the following areas:
    - 4.2.1.1 Install architectural ceiling, wall sheats / panels / boards and floor finishes
    - 4.2.1.2 Fabricate / install door / window jambs and panels
    - 4.2.1.3 Install stair components and / or pre-fabricated stairs assembly
    - 4.2.1.4 Install built-in and / or pre-fabricated cabinets

Successful candidates shall be awarded Certificates of Competency (COCs)
  - 4.2.2 Demonstration of competence through project-type assessment covering all the required units of the qualification
- 4.3. Assessment shall focus on the core units of competency. The basic and common units shall be integrated or assessed concurrently with the core units.
- 4.4. The following are qualified to apply for assessment and certification:
  - 4.3.1 Graduates of formal, non-formal and informal including enterprise-based training programs
  - 4.3.2. Experienced Workers (wage employed or self-employed)
- 4.5. The guidelines on assessment and certification are discussed in detail in the Procedures Manual on Assessment and Certification and guidelines on the Implementation of the Philippine TVET Qualification and Certification System (PTQCS).

# COMPETENCY MAP

## CONSTRUCTION - CIVIL WORKS SUB-SECTOR

### □ CARPENTRY NC III

<b>CORE COMPETENCIES</b>	Repairs defective concrete and masonry surfaces	Perform basic masonry	Lay brick/ block for structures	Plaster concrete/ masonry	Install pre-cast ballusters and handrails	Prepare masonry materials	Prepare tools, painting materials and equipment	Prepare Surface for Painting
	Apply special cement finishes to concrete and masonry surfaces	Estimate Paint Requirements	Perform Painting Works	Stake-out Building Lines	Fabricate Formworks	Install Formwork Components	Strip Formwork Components	Install Framing Works
	Perform Single Unit Plumbing Installation and Assemblies	Perform Minor Construction Works	Install architectural ceiling, wall sheats/panels/ boards and floor finishes	Fabricate/Install Door/Window Jambes and Panels	Install stair components and/or pre-fabricated stair assembly	Install built-in and/or pre-fabricated cabinets	Perform Mixing/Tinting of Color Paints	Perform Painting Repair Work
	Perform Complex and Multi-Story Plumbing Installation and Assemblies	Perform Plumbing Repair and Maintenance Works	Conduct Pipe Leak Testing	Make Piping Joints and	Install Hot and Potable Chilled Water Piping System	Prepare Pipes for Installation	Draft Plumbing Design	
<b>COMMON COMPETENCIES</b>	Prepare construction Materials and Tools                      Observe Procedures, Specifications and Manuals of Instructions                      Maintain Tools and Equipment                      Perform Mensurations and Calculations                      Interpret Technical Drawings and Plans							
<b>BASIC COMPETENCIES</b>	Receive and Respond to workplace communication	Work with others	Demonstrate work	Participate workplace communication	Work in team environment	Practice professionalism	Practice occupational health and Safety procedures	Practice basic housekeeping procedures
	Lead workplace communication	Lead small teams	Develop and practice negotiation	Solve problems related to activities	Use mathematical method	Use technologies	Utilize specialized communication skills	Develop team and individual
	Apply problem solving techniques to workplace	Collect and organize information	Plan and organize work	Promote environment protection				

## DEFINITION OF TERMS

1. Batter board Is a temporary framework erected to hold the stretched lines of a building layout.
2. Competency Is the application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace.
3. Certification Refers to the process of verifying and validating competencies of a person through assessment.
4. Element Refers to the building blocks of a unit of competency. It describes in outcome terms the functions that a person who works in a particular area of work is able to perform.
5. Evidence Guide It is a guide for assessment that provides information on critical aspects of competency, underpinning knowledge, underpinning skills, resource implications, context of assessment and assessment method.
6. Floor Joist Refers to the structural member of a building that carries the wood flooring.
7. Handrail Refers to a rail running parallel with the inclination of the stairs that hold the balusters.
8. Level Refers to the category following the level of difficulty and complexity of skills and knowledge required to do the job.
9. Philippine TVET Qualification Framework Refers to a comprehensive, nationally consistent framework for qualifications in the TVET sector. It also provides the parameter for the integration of learning and assessment in the middle skills development.
10. Plank Refers to the piece of lumber whose thick ranges from 4 to 13 cm.
11. Qualification Refers to the national certificate issued by the TESDA or its accredited industry organizations in recognition that a person has achieved competencies relevant to a trade or industry.
12. Range of Variable It describes the circumstances or context in which the work is to be performed.

- |                        |  |
|------------------------|--|
| 13. Riser              | Refers to the vertical pace of stair steps.  |
| 14. Scaffolding        | Refers to an elevated temporary-working platform.  |
| 15. Step               | Refers to a stair, which consists of one tread and one riser.                              |
| 16. Stud               | Is the structural member of a building where the siding or partition board is nailed.      |
| 17. Staircase          | Refers to the whole set of a stair.  |
| 18. Stringer           | Refers to the inclined plane that supports or holds the tread and the risers of a stair.   |
| 19. Unit of Competency | Refers to a discrete aspect of work, which would normally be performed by only one person. |

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