

# TRAINING REGULATIONS



## Furniture Making (Finishing) NC II

### FURNITURE AND FIXTURES SECTOR

TECHNICAL EDUCATION AND SKILLS DEVELOPMENT AUTHORITY  
East Service Road, South Superhighway, Taguig City, Metro Manila

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# TRAINING REGULATIONS FOR FURNITURE MAKING (FINISHING) NC II

## SECTION 1 FINISHING NC II QUALIFICATION

The Furniture Making (Finishing) NC II Qualification consists of competencies that a person must achieve to enable him / her to prepare surface for final coating, apply final coating using spray gun system and perform basic preventive maintenance servicing for spray gun equipment and booth.

This Qualification is packaged from the competency map of Furniture Making sector as shown in Annex A.

The Units of Competency comprising this Qualification include the following:

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

#### **Units of Competency**

500311105	Participate in workplace communication
500311106	Work in a team environment
500311107	Practice career professionalism
500311108	Practice occupational health and safety procedures

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

#### **Units of Competency**

CON311203	Perform mensuration and calculations
CON311202	Interpret technical drawings and plans
CON311201	Observe procedures, specifications and manual of instructions
FUR714201	Comply with occupational health and safety (OH & S) practices and 5S in the workplace
CON311204	Maintain tools and equipment
FUR714202	Use hand tools
FUR714203	Apply quality standards

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

#### **Units of Competency**

FUR714301	Prepare surface for final coating
FUR714302	Apply final coating using spray gun system
FUR714303	Perform basic preventive maintenance servicing for spray gun equipment and booth

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

Furniture Maker Finisher

## SECTION 2      COMPETENCY STANDARDS

This section gives the details of the contents of the basic, common and core units of competency required in **Furniture Making (Finishing) NC II** qualification.

### BASIC COMPETENCIES

<b>UNIT OF COMPETENCY:</b>	<b>PARTICIPATE IN WORKPLACE COMMUNICATION</b>
<b>UNIT CODE</b> :	<b>500311105</b>
<b>UNIT DESCRIPTOR</b> :	This unit covers the knowledge, skills and attitudes required to gather, interpret and convey information in response to workplace requirements.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from <b><i>appropriate sources</i></b> 1.2 Effective questioning , active listening and speaking skills are used to gather and convey information 1.3 Appropriate <b><i>medium</i></b> is used to transfer information and ideas 1.4 Appropriate non- verbal communication is used 1.5 Appropriate lines of communication with supervisors and colleagues are identified and followed 1.6 Defined workplace procedures for the location and <b><i>storage</i></b> of information are used 1.7 Personal interaction is carried out clearly and concisely
2. Participate in workplace meetings and discussions	2.1 Team meetings are attended on time 2.2 Own opinions are clearly expressed and those of others are listened to without interruption 2.3 Meeting inputs are consistent with the meeting purpose and established <b><i>protocols</i></b> 2.4 <b><i>Workplace interactions</i></b> are conducted in a courteous manner 2.5 Questions about simple routine workplace procedures and matters concerning working conditions of employment are asked and responded to 2.6 Meetings outcomes are interpreted and implemented

<p>3. Complete relevant work related documents</p>	<p>3.1 Range of <b>forms</b> relating to conditions of employment are completed accurately and legibly</p> <p>3.2 Workplace data is recorded on standard workplace forms and documents</p> <p>3.3 Basic mathematical processes are used for routine calculations</p> <p>3.4 Errors in recording information on forms/ documents are identified and properly acted upon</p> <p>3.5 Reporting requirements to supervisor are completed according to organizational guidelines</p>
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## RANGE OF VARIABLES

VARIABLE	RANGE
1. Appropriate sources	1.1 Team members 1.2 Suppliers 1.3 Trade personnel 1.4 Local government 1.5 Industry bodies
2. Medium	2.1 Memorandum 2.2 Circular 2.3 Notice 2.4 Information discussion 2.5 Follow-up or verbal instructions 2.6 Face to face communication
3. Storage	3.1 Manual filing system 3.2 Computer-based filing system
4. Forms	4.1 Personnel forms, telephone message forms, safety reports
5. Workplace interactions	5.1 Face to face 5.2 Telephone 5.3 Electronic and two way radio 5.4 Written including electronic, memos, instruction and forms, non-verbal including gestures, signals, signs and diagrams
6. Protocols	6.1 Observing meeting 6.2 Compliance with meeting decisions 6.3 Obeying meeting instructions

## 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 Demonstrates ability to prepare written communication following standard format of the organization</li> <li>1.2 Demonstrates ability to access information using communication equipment</li> <li>1.3 Made use of relevant terms as an aid to transfer information effectively</li> <li>1.4 Conveyed information effectively adopting the formal or informal communication</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Effective communication</li> <li>2.2 Different modes of communication</li> <li>2.3 Written communication</li> <li>2.4 Organizational policies</li> <li>2.5 Communication procedures and systems</li> <li>2.6 Technology relevant to the enterprise and the individual's work responsibilities</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Follow simple spoken language</li> <li>3.2 Perform routine workplace duties following simple written notices</li> <li>3.3 Participate in workplace meetings and discussions</li> <li>3.4 Complete work related documents</li> <li>3.5 Estimate, calculate and record routine workplace measures</li> <li>3.6 Basic mathematical processes of addition, subtraction, division and multiplication</li> <li>3.7 Ability to relate to people of social range in the workplace</li> <li>3.8 Gather and provide information in response to workplace requirements</li> </ul>
<p>4. Resource Implications</p>	<ul style="list-style-type: none"> <li>4.1 Fax machine</li> <li>4.2 Telephone</li> <li>4.3 Writing materials</li> <li>4.4 Internet</li> </ul>
<p>5. Methods of Assessment</p>	<ul style="list-style-type: none"> <li>5.1 Direct Observation</li> <li>5.3 Oral interview and written test</li> </ul>
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency may be assessed individually in the actual workplace or through accredited institution</li> </ul>

<b>UNIT OF COMPETENCY:</b>	<b>WORK IN TEAM ENVIRONMENT</b>
<b>UNIT CODE</b> :	<b>500311106</b>
<b>UNIT DESCRIPTOR</b> :	This unit covers the skills, knowledge and attitudes to identify role and responsibility as a member of a team.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Describe team role and scope	<p>1.1 The <b><i>role and objective of the team</i></b> is identified from available <b><i>sources of information</i></b></p> <p>1.2 Team parameters, reporting relationships and responsibilities are identified from team discussions and appropriate external sources</p>
2. Identify own role and responsibility within team	<p>2.1 Individual role and responsibilities within the team environment are identified</p> <p>2.2 Roles and responsibility of other team members are identified and recognized</p> <p>2.3 Reporting relationships within team and external to team are identified</p>
3. Work as a team member	<p>3.1 Effective and appropriate forms of communications used and interactions undertaken with team members who contribute to known team activities and objectives</p> <p>3.2 Effective and appropriate contributions made to complement team activities and objectives, based on individual skills and competencies and <b><i>workplace context</i></b></p> <p>3.3 Observed protocols in reporting using standard operating procedures</p> <p>3.4 Contribute to the development of teamwork plans based on an understanding of team's role and objectives and individual competencies of the members.</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Role and objective of team	1.1 Work activities in a team environment with enterprise or specific sector 1.2 Limited discretion, initiative and judgement maybe demonstrated on the job, either individually or in a team environment
2. Sources of information	2.1 Standard operating and/or other workplace procedures 2.2 Job procedures 2.3 Machine/equipment manufacturer's specifications and instructions 2.4 Organizational or external personnel 2.5 Client/supplier instructions 2.6 Quality standards 2.7 OHS and environmental standards
3. Workplace context	3.1 Work procedures and practices 3.2 Conditions of work environments 3.3 Legislation and industrial agreements 3.4 Standard work practice including the storage, safe handling and disposal of chemicals 3.5 Safety, environmental, housekeeping and quality guidelines

## EVIDENCE GUIDE

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Demonstrates ability to operate in a team to complete workplace activity 1.2 Demonstrates ability to work effectively with others 1.3 Demonstrates ability to convey information in written or oral form 1.4 Demonstrates ability to select and use appropriate workplace language 1.5 Demonstrates ability to follow designated work plan for the job 1.6 Demonstrates ability to report outcomes
2. Underpinning Knowledge and Attitude	2.1 Communication process 2.2 Team structure 2.3 Team roles 2.4 Group planning and decision making
3. Underpinning Skills	3.1 Communicate appropriately, consistent with the culture of the workplace
4. Resource Implications	The following resources MUST be provided: 4.1 Access to relevant workplace or appropriately simulated environment where assessment can take place 4.2 Materials relevant to the proposed activity or tasks
5. Methods of Assessment	Competency may be assessed through: 5.1 Observation of the individual member in relation to the work activities of the group 5.2 Observation of simulation and or role play involving the participation of individual member to the attainment of organizational goal 5.3 Case studies and scenarios as a basis for discussion of issues and strategies in teamwork
6. Context for Assessment	6.1 Competency may be assessed in workplace or in a simulated workplace setting 6.2 Assessment shall be observed while task are being undertaken whether individually or in group

<b>UNIT OF COMPETENCY:</b>	<b>PRACTICE CAREER PROFESSIONALISM</b>
<b>UNIT CODE</b> :	<b>500311107</b>
<b>UNIT DESCRIPTOR</b> :	This unit covers the knowledge, skills and attitudes in promoting career growth and advancement.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Integrate personal objectives with organizational goals	1.1 Personal growth and work plans are pursued towards improving the qualifications set for the profession 1.2 Intra- and interpersonal relationships is are maintained in the course of managing oneself based on performance <b>evaluation</b> 1.3 Commitment to the organization and its goal is demonstrated in the performance of duties
2. Set and meet work priorities	2.1 Competing demands are prioritized to achieve personal, team and organizational goals and objectives 2.2 <b>Resources</b> are utilized efficiently and effectively to manage work priorities and commitments 2.3 Practices along economic use and maintenance of equipment and facilities are followed as per established procedures
3. Maintain professional growth and development	3.1 <b>Training and career opportunities</b> are identified and availed of based on job requirements 3.2 <b>Recognition</b> is sought/received and demonstrated as proof of career advancement 3.3 <b>Licenses and/or certifications</b> relevant to job and career are obtained and renewed

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Evaluation	1.1 Performance Appraisal 1.2 Psychological Profile 1.3 Aptitude Tests
2. Resources	2.1 Human 2.2 Financial 2.3 Technology 2.3.1 Hardware 2.3.2 Software
3. Training and career opportunities	3.1 Participation in training programs 3.1.1 Technical 3.1.2 Supervisory 3.1.3 Managerial 3.1.4 Continuing Education 3.2 Serving as Resource Persons in conferences and workshops
4. Recognition	4.1 Recommendations 4.2 Citations 4.3 Certificate of Appreciation 4.4 Commendations 4.5 Awards 4.6 Tangible and Intangible Rewards
5. Licenses and/or certifications	5.1 National Certificates 5.2 Certificate of Competency 5.3 Support Level Licenses 5.4 Professional Licenses

## 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 Demonstrates ability to attain job targets within key result areas (KRAs)</li> <li>1.2 Demonstrates ability to maintain intra - and interpersonal relationship in the course of managing oneself based on performance evaluation</li> <li>1.3 Demonstrates ability to complete training and career opportunities which are based on the requirements of the industries</li> <li>1.4 Demonstrates ability to acquire and maintain licenses and/or certifications according to the requirement of the qualification</li> </ul>
<p>2. Underpinning Knowledge</p>	<ul style="list-style-type: none"> <li>2.1 Work values and ethics (Code of Conduct, Code of Ethics, etc.)</li> <li>2.2 Company policies</li> <li>2.3 Company-operations, procedures and standards</li> <li>2.4 Fundamental rights at work including gender sensitivity</li> <li>2.5 Personal hygiene practices</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Appropriate practice of personal hygiene</li> <li>3.2 Intra and Interpersonal skills</li> <li>3.3 Communication skills</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources <b>MUST</b> be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace or assessment location</li> <li>4.2 Case studies/scenarios</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency may be assessed through:</p> <ul style="list-style-type: none"> <li>5.1 Portfolio Assessment</li> <li>5.2 Interview</li> <li>5.3 Simulation/Role-plays</li> <li>5.4 Observation</li> <li>5.5 Third Party Reports</li> <li>5.6 Exams and Tests</li> </ul>
<p>6. Context of 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> </ul>

<b>UNIT OF COMPETENCY:</b>	<b>PRACTICE OCCUPATIONAL HEALTH AND SAFETY PROCEDURES</b>
<b>UNIT CODE</b> :	<b>500311108</b>
<b>UNIT DESCRIPTOR</b> :	This unit covers the outcomes required to comply with regulatory and organizational requirements for occupational health and safety.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
1. Identify hazards and risks	<p>1.1 <b>Safety regulations</b> and workplace safety and hazard control practices and procedures are clarified and explained based on organization procedures</p> <p>1.2 <b>Hazards/risks</b> in the workplace and their corresponding indicators are identified to minimize or eliminate risk to co-workers, workplace and environment in accordance with organization procedures</p> <p>1.3 <b>Contingency measures</b> during workplace accidents, fire and other emergencies are recognized and established in accordance with organization procedures</p>
2. Evaluate hazards and risks	<p>2.1 Terms of maximum tolerable limits which when exceeded will result in harm or damage are identified based on threshold limit values (TLV)</p> <p>2.2 Effects of the hazards are determined</p> <p>2.3 OHS issues and/or concerns and identified safety hazards are reported to designated personnel in accordance with workplace requirements and relevant workplace OHS legislation</p>
3. Control hazards and risks	<p>3.1 Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace are consistently followed</p> <p>3.2 Procedures for dealing with workplace accidents, fire and emergencies are followed in accordance with organization OHS policies</p> <p>3.3 <b>Personal protective equipment (PPE)</b> is correctly used in accordance with organization OHS procedures and practices</p> <p>3.4 Appropriate assistance is provided in the event of a workplace emergency in accordance with established organization protocol</p>

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and Italicized</i> terms are elaborated in the Range of Variables
4. Maintain OHS awareness	4.1 <b><i>Emergency-related drills and training</i></b> are participated in as per established organization guidelines and procedures 4.2 <b><i>OHS personal records</i></b> are completed and updated in accordance with workplace requirements

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Safety regulations	May include but are not limited to: 1.1 Clean Air Act 1.2 Building code 1.3 National Electrical and Fire Safety Codes 1.4 Waste management statutes and rules 1.5 Philippine Occupational Safety and Health Standards 1.6 DOLE regulations on safety legal requirements 1.7 ECC regulations
2. Hazards/Risks	May include but are not limited to: 2.1 Physical hazards – impact, illumination, pressure, noise, vibration, temperature, radiation 2.2 Biological hazards- bacteria, viruses, plants, parasites, mites, molds, fungi, insects 2.3 Chemical hazards – dusts, fibers, mists, fumes, smoke, gasses, vapors 2.4 Ergonomics <ul style="list-style-type: none"> <li>2.4.1 Psychological factors – over exertion/ excessive force, awkward/static positions, fatigue, direct pressure, varying metabolic cycles</li> <li>2.4.2 Physiological factors – monotony, personal relationship, work out cycle</li> </ul>
3. Contingency measures	May include but are not limited to: 3.1 Evacuation 3.2 Isolation 3.3 Decontamination 3.4 (Calling designed) emergency personnel
4. PPE	May include but are not limited to: 4.1 Mask 4.2 Gloves 4.3 Goggles 4.4 Hair Net/cap/bonnet 4.5 Face mask/shield 4.6 Ear muffs 4.7 Apron/Gown/coverall/jump suit 4.8 Anti-static suits

VARIABLE	RANGE
5. Emergency-related drills and training	5.1 Fire drill 5.2 Earthquake drill 5.3 Basic life support/CPR 5.4 First aid 5.5 Spillage control 5.6 Decontamination of chemical and toxic 5.7 Disaster preparedness/management
6. OHS personal records	6.1 Medical/Health records 6.2 Incident reports 6.3 Accident reports 6.4 OHS-related training completed

## 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 Demonstrates ability to explain clearly established workplace safety and hazard control practices and procedures</li> <li>1.2 Demonstrates ability to identify hazards/risks in the workplace and its corresponding indicators in accordance with company procedures</li> <li>1.3 Demonstrates ability to recognize contingency measures during workplace accidents, fire and other emergencies</li> <li>1.4 Demonstrates ability to identify terms of maximum tolerable limits based on threshold limit value- TLV</li> <li>1.5 Demonstrates ability to follow Occupational Health and Safety (OHS) procedures for controlling hazards/risks in workplace</li> <li>1.6 Used Personal Protective Equipment (PPE) in accordance with company OHS procedures and practices</li> <li>1.7 Completed and updated OHS personal records in accordance with workplace requirements</li> </ul>
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> <li>2.1 OHS procedures and practices and regulations</li> <li>2.2 PPE types and uses</li> <li>2.3 Personal hygiene practices</li> <li>2.4 Hazards/risks identification and control</li> <li>2.5 Threshold Limit Value -TLV</li> <li>2.6 OHS indicators</li> <li>2.7 Organization safety and health protocol</li> <li>2.8 Safety consciousness</li> <li>2.9 Health consciousness</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Practice of personal hygiene</li> <li>3.2 Hazards/risks identification and control skills</li> <li>3.3 Interpersonal skills</li> <li>3.4 Communication 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 Workplace or assessment location</li> <li>4.2 OHS personal records</li> <li>4.3 PPE</li> <li>4.4 Health records</li> </ul>

5. Methods of Assessment	Competency may be assessed through: 5.1 Portfolio Assessment 5.2 Interview 5.3 Case Study/Situation
6. Context for Assessment	6.1 Competency may be assessed in the work place or in a simulated work place setting

## COMMON COMPETENCIES

<b>UNIT OF COMPETENCY:</b>	<b>PERFORM MENSURATION AND CALCULATION</b>
<b>UNIT CODE:</b>	<b>CON311203</b>
<b>UNIT DESCRIPTOR:</b>	This unit includes identifying caring, handling and use of measuring instruments

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and italicized</i> terms are elaborated in the Range of Variables
1. Select measuring instruments	1,1 Object or component to be measured is identified 1.2 Correct specifications are obtained from relevant source 1.3 Appropriate <b><i>measuring instrument</i></b> is selected according to job requirements
2. Carry out measurements and calculation	2.1 Measuring tools are selected in line with job requirements 2.2 Accurate measurements are obtained to job 2.3 Calculation needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/). 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 Instruments are read to the limit of accuracy of the tool
3. Maintain measuring instruments	3.1 Measuring instruments must kept free from corrosion 3.2 Measuring instruments not dropped to avoid damage 3.3 Measuring instruments cleaned before and after using

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Measuring instruments	Measuring instruments includes: Multitester Micrometer (In-out, depth) Vernier caliper (Out, inside) Dial Gauge with Mag. Std. Plastigauge Straight Edge Thickness gauge Torque Gauge Small Hole gauge Telescopic Gauge Try square Protractor Combination gauge Steel rule
2. Calculation	Kinds of part mensuration include: 2.1 Volume 2.2 Area 2.3 Displacement 2.4 Inside diameter 2.5 Circumference 2.6 Length 2.7 Thickness 2.8 Outside diameter 2.9 Taper 2.10 Out of roundness 2.11 Oil clearance 2.12 End play/thrust clearance

## EVIDENCE GUIDE

<p>1. Critical aspect of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Selected measuring instruments</li> <li>1.2 Carried-out measurements and calculations</li> <li>1.3 Maintained measuring instruments</li> </ul>
<p>2. Underpinning knowledge and attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Types of Measuring instruments and its uses</li> <li>2.2 Safe handling procedures in using measuring instruments</li> <li>2.3 Four fundamental operation of mathematics</li> <li>2.4 Formula for Volume, Area, Perimeter and other geometric figures</li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Caring and Handling measuring instruments</li> <li>3.2 Calibrating and using measuring instruments</li> <li>3.3 Performing calculation by Addition, Subtraction, multiplication and Division</li> <li>3.4 Visualizing objects and shapes</li> <li>3.5 Interpreting formula for volume, area, perimeter and other geometric figures</li> </ul>
<p>4. Resource implication</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> <li>4.1 Workplace location</li> <li>4.2 Measuring instrument appropriate to servicing processes</li> <li>4.3 Instructional materials relevant to the propose activity</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency should be assessed by:</p> <ul style="list-style-type: none"> <li>5.1 Direct observation</li> <li>5.2 Written test</li> <li>5.3 Interview</li> <li>5.4 Practical application</li> </ul> <p>Assessment of underpinning knowledge and practical skills May be combined</p>
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Competency elements must be assessed in a safe working environment</li> <li>6.2 Assessment may be conducted in a workplace or simulated environment</li> </ul>

<b>UNIT OF COMPETENCY:</b>	<b>INTERPRET TECHNICAL DRAWINGS AND PLANS</b>
<b>UNIT CODE</b> :	<b>CON311202</b>
<b>UNIT DESCRIPTOR</b> :	This unit covers the knowledge, skills and attitudes on analyzing and interpreting symbols, data and work plan based on the required performance standards.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and 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

VARIABLE	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) 1.6 Cutting list
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 4.3.1 Front view 4.3.2 Right side view/left side view 4.3.3 Top view 4.3.4 Pictorial 4.4 Schematic diagram 4.5 Electrical drawings 4.6 Structural drawings 4.7 Plumbing drawings 4.7.1 Water 4.7.2 Sewerage/Drainage 4.7.3 Ventilation 4.8 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

1. Critical aspects of competency	Assessment requires that the candidate: 1.1 Identified and determined signs, symbols and data according to work plan, job requirements and classifications 1.2 Identified tools and equipment in accordance with job requirements 1.3 Listed supplies and materials according to blueprint specifications 1.4 Drawn workplan following specifications 1.5 Determined job specifications based on working/technical drawing
2. Underpinning knowledge	2.1 TRADE MATHEMATICS 2.1.1 Linear measurement 2.1.2 Dimension 2.1.3 Unit conversion 2.2 BLUEPRINT READING AND PLAN SPECIFICATION 2.2.1 Electrical, mechanical plan, symbols and abbreviations 2.2.2 Drawing standard symbols 2.3 TRADE THEORY 2.3.1 Basic technical drawing 2.3.2 Types technical plans 2.3.3 Various types of drawings 2.3.4 Notes and specifications
3. Underpinning skills	3.1 Interpreting drawing/orthographic drawing 3.2 Interpreting technical plans 3.3 Matching specification details with existing resources 3.4 Following instructions 3.5 Handling of drawing instruments
4. Resource implications	The following resources should be provided: 4.1 Workplace 4.2 Drawings and specification relevant to task 4.3 Materials and instrument relevant to proposed activity
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

<p>6. Context of assessment</p>	<p>6.1 Competency assessment may occur in the workplace or in 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 endorsed TESDA assessment guidelines</p>
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<b>UNIT OF COMPETENCY:</b>	<b>OBSERVE PROCEDURES, SPECIFICATIONS AND MANUALS OF INSTRUCTIONS</b>
<b>UNIT CODE</b> :	<b>CON311201</b>
<b>UNIT DESCRIPTOR</b> :	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>Bold and 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

<b>UNIT TITLE:</b>	<b>APPLY OCCUPATIONAL HEALTH AND SAFETY (OH&amp;S) PRACTICES AND 5S IN THE WORKPLACE</b>
<b>UNIT CODE:</b>	<b>FUR714201</b>
<b>UNIT DESCRIPTOR:</b>	This unit covers the knowledge, skills and attitudes and values needed to work safely in the workplace, interpret safety signs and symbols and follow emergency procedures.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> Bold and italicized terms are elaborated in the Range of Variables
1. Follow safe workplace procedures for hazard identification and risk control	1.1 <b>Hazards</b> in the work area are recognized and reported <b>to designated personnel</b> according to workplace procedures 1.2 Workplace procedures and work instructions for controlling risks are followed accurately 1.3 Workplace procedures for dealing with <b>emergencies</b> are followed whenever necessary within the scope of responsibilities and competencies 1.4 All work areas are kept clean, free from obstacles and emergency exits are known and kept clear at all times 1.5 All <b>equipment and safety devices</b> are used according to company or manufacturer's procedures 1.6 <b>Occupational health and safety standards</b> are applied at all times in daily work routines
2. Employ safe working practices	2.1 <b>Hazard warnings and safety signs</b> are recognized and observed at all times 2.2 Work is conducted within <b>ergonomic</b> guidelines 2.3 All hazardous materials and equipment are handled in accordance with manufacturer's guidelines and specified safe handling guidelines 2.4 Safe manual handling techniques and safe equipment operation techniques are employed at all times 2.5 Potentially hazardous situations when identified, including faulty and dangerous equipment, are immediately reported
3. Respond to accidents	3.1 Workplace accidents are identified 3.2 Workplace emergency first aid procedures are followed

4. Maintain accident records and statistics	4.1 Accident/incident records maintained in accordance with standard operating procedures 4.2 Records analyzed for trends or particular problem areas are identified
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## RANGE OF VARIABLES

VARIABLE	RANGE
1. Hazards	These include but not limited to: 1.1 Burns 1.2 Falls 1.3 Eye accidents 1.4 Spills 1.5 Explosion 1.6 Obstructions 1.7 Loose objects/fixtures 1.8 Chemicals 1.9 Faulty equipment 1.10 Electrical faults
2. Designated personnel	2.1 Assigned staff as OH & S representative 2.2 Supervisors
3. Emergencies	Emergencies may include the following but not limited to: 3.1 Fire 3.2 Explosion 3.3 Spills 3.4 Falls
4. Equipment and safety devices	4.1 Protective eyewear 4.2 Gloves 4.3 Apron 4.4 Ground strap 4.5 Wrist strap 4.6 Safety belt 4.7 Hard hat 4.8 Ear plug 4.9 Finger cuts 4.10 Electro static discharge (ESD) shoes
5. OH & S standards	5.1 Philippine Electrical Code 5.2 Philippine OHS standards 5.3 Philippine Environmental Standards

6. Ergonomic guidelines	6.1 Types of equipment used 6.2 Appropriate furniture 6.3 Seating posture 6.4 Lifting posture 6.5 Visual display unit screen brightness 6.6 Manual handling
7. Hazard warnings and safety signs	7.1 Internationally-recognized hazard warning signs and safety symbols 7.2 Industry-recognized hazard warning signs and safety symbols

## EVIDENCE GUIDE

<p>1. Critical aspect of competencies</p>	<p>Assessment must show that the candidate:</p> <ul style="list-style-type: none"> <li>1.1 Identified and described safety</li> <li>1.2 Working practices relating to all tasks undertaken in the workplace</li> <li>1.3 Identified and selected appropriate equipment and safety devices for particular workplace tasks and activities</li> <li>1.4 Interpreted hazard warnings and safety signs correctly and described the application of these warnings and signs in the work activities</li> <li>1.5 Responded to accidents</li> <li>1.6 Maintained accident records</li> </ul>
<p>2. Underpinning knowledge</p>	<ul style="list-style-type: none"> <li>2.1 5S of good housekeeping</li> <li>2.2 General OH &amp; S principles, responsibilities and legislations</li> <li>2.3 General ergonomic principles</li> <li>2.4 OH &amp; S requirements in relation to work safety</li> <li>2.5 Environmental requirements relative to work safety</li> <li>2.6 Hazard identification</li> <li>2.7 First Aid</li> <li>2.8 Accident/hazard reporting</li> </ul>
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> <li>3.1 Reading skills required to interpret work instruction</li> <li>3.2 Communication skills</li> <li>3.3 Problem-solving in emergency situation</li> </ul>
<p>4. Method of assessment</p>	<p>The assessor may select two (2) of the following assessment methods to objectively assess the candidate:</p> <ul style="list-style-type: none"> <li>4.1 Observation</li> <li>4.2 Questioning</li> <li>4.3 Practical demonstration</li> </ul>
<p>5. Resource implication</p>	<ul style="list-style-type: none"> <li>5.1 Safety signs</li> <li>5.2 Accident reporting procedures</li> <li>5.3 First Aid materials and guidelines</li> <li>5.4 Housekeeping equipment and materials</li> <li>5.5 Safety devices</li> </ul>
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> <li>6.1 Assessment may be conducted in the workplace or in a simulated environment</li> </ul>

<b>UNIT OF COMPETENCY:</b>	<b>MAINTAIN TOOLS AND EQUIPMENT</b>
<b>UNIT CODE :</b>	<b>CON311204</b>
<b>UNIT DESCRIPTOR :</b>	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 2.4 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 OHSA regulations
3. Store tools and equipment	3.1 Inventory of tools, instruments and equipment are conducted and recorded as per company practices 3.2 Tools and equipment are stored safely in appropriate locations in accordance with manufacturer's specifications or company procedures

## 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 2.1 Cutting tools - hacksaw, crosscut saw, rip saw 2.2 Boring tools - auger, brace, grinlet, hand drill 2.3 Holding tools - vise grip, C-clamp, bench vise 2.4 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>	<p><b>SAFETY PRACTICES</b></p> <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> <p><b>2.2 MATERIALS, TOOLS AND EQUIPMENT</b></p> <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> <p><b>2.3 PREVENTIVE MAINTENANCE</b></p> <ul style="list-style-type: none"> <li>2.3.1 Methods and techniques</li> <li>2.3.2 Procedures</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>4.3 Maintenance materials, tools and equipment relevant to the proposed activity/task</li> </ul>

5. Methods of assessment	Competency should be assessed through: 5.1 Direct observation 5.2 Written test/questioning relevant to underpinning knowledge
6. Context of assessment	6.1 Competency assessment may occur in workplace or any appropriate simulated environment 6.2 Competency assessment must be undertaken in accordance with the endorsed TESDA assessment guidelines

<b>UNIT TITLE:</b>	<b>USE HAND TOOLS</b>
<b>UNIT CODE:</b>	<b>FUR714202</b>
<b>UNIT DESCRIPTOR:</b>	This unit covers the knowledge, skills and attitudes on the safe use, handling and maintenance of tools

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and italicized</i> terms are elaborated in the Range of Variables
1. Plan and prepare for tasks to be undertaken	1.1 Tasks to be undertaken are properly identified 1.2 Appropriate <b><i>hand tools</i></b> are identified and selected according to the task requirements
2. Prepare hand tools	2.1 Appropriate hand tools are checked for proper operation and safety 2.2 Unsafe or faulty tools are identified and marked for repair according to standard company procedure
3. Use appropriate hand tools and test equipment	3.1 Tools are used according to tasks undertaken 3.2 All safety procedures in using tools are observed at all times and appropriate <b><i>personal protective equipment</i></b> (PPE) are used 3.3 Malfunctions, unplanned or unusual events are reported to the supervisor
4. Maintain hand tools	4.1 Tools are not dropped to avoid damage 4.2 Routine <b><i>maintenance</i></b> of tools undertaken according to standard operational procedures, principles and techniques 4.3 Tools are stored safely in appropriate locations in accordance with manufacturer's specifications or standard operating procedures

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Hand tools	1.1 Hand tools for adjusting, dismantling, assembling, finishing, cutting. 1.2 Tool set includes the following but not limited to: screw drivers, pliers, punches, wrenches, files
2. Personal Protective Equipment (PPE)	2.1 Gloves 2.2 Protective eyewear 2.3 Apron/overall
3. Maintenance	3.1 Cleaning 3.2 Lubricating 3.3 Tightening 3.4 Simple tool repairs 3.5 Hand sharpening 3.6 Adjustment using correct procedures

## EVIDENCE GUIDE

1. Critical aspect of competency	Assessment must show that the candidate: 1.1 Demonstrated safe working practices at all times 1.2 Communicated information about processes, events or tasks being undertaken to ensure a safe and efficient working environment 1.3 Planned tasks in all situations and reviewed task requirements as appropriate 1.4 Performed all tasks to specification 1.5 Maintained and stored tools in appropriate location
2. Underpinning knowledge	2.1 Safety 2.2 Safety requirements in handling tools 2.3 Tools 2.4 Function, Operation, Common faults 2.5 Processes, Operations, Systems 2.6 Maintenance of tools 2.7 Storage of Tools
3. Underpinning skills	3.1 Reading skills required to interpret work instruction and numerical skills 3.2 Communication skills 3.3 Problem solving in emergency situation
4. Method of assessment	Competency in this unit must be assessed through: 4.1 Observation 4.2 Oral questioning
5. Resource Implication	Tools may include the following but not limited to: 5.1 Screw drivers 5.2 Pliers 5.3 Punches 5.4 Wrenches, files
6. Context of Assessment	6.1 Assessment may be conducted in the workplace or in a simulated environment

<b>UNIT TITLE:</b>	<b>APPLY QUALITY STANDARDS</b>
<b>UNIT CODE:</b>	<b>FUR714203</b>
<b>UNIT DESCRIPTOR:</b>	This unit covers the knowledge, skills, (and) attitudes and values needed to apply quality standards in the workplace. The unit also includes the application of relevant safety procedures and regulations, organization procedures and customer requirements

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and italicized</i> terms are elaborated in the Range of Variables
1. Assess quality of received materials or components	1.1 Work instructions are obtained and work is carried out in accordance with standard operating procedures 1.2 Received <b>materials or component parts</b> are checked against workplace standards and specifications 1.3 Faulty material or components related to work are identified and isolated 1.4 <b>Faults</b> and any identified causes are recorded and/or reported to the supervisor concerned in accordance with workplace procedures 1.5 Faulty materials or components are replaced in accordance with workplace procedures
2. Assess own work	2.1 <b>Documentation</b> relative to quality within the company is identified and used 2.2 Completed work is checked against workplace standards relevant to the task undertaken 2.3 Faulty pieces are identified and isolated 2.4 Information on the quality and other indicators of production performance is recorded in accordance with workplace procedures 2.5 In cases of deviations from specified <b>quality standards</b> , causes are documented and reported in accordance with the workplace' standards operating procedures
3. Engage in quality improvement	3.1 Process improvement procedures are participated in <b>relation</b> to workplace assignment 3.2 Work is carried out in accordance with process improvement procedures 3.3 Performance of operation or quality of product or service to ensure <b>customer</b> satisfaction is monitored

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials/components	1.1 Materials may include but not limited to: 1.1.1 wires 1.1.2 cables, soldering lead 1.1.3 electrical tape 1.2 Components may include but not limited to: 1.2.1 ICs 1.2.2 Diodes
2. Faults	2.1 Faults may include but not limited to: 2.2 Components/materials not <b>according</b> to specification 2.3 Components/materials contain manufacturing defects 2.4 Components/materials do not conform with government regulation i.e., PEC, environmental code 2.5 Components/materials have safety defect
3. Documentation	3.1 Organization work procedures 3.2 Manufacturer's instruction manual 3.3 Customer requirements 3.4 Forms
4. Quality standards	Quality standards may relate but not limited to the following: 4.1 Materials 4.2 Component parts 4.3 Final product 4.4 Production processes
5. Customer	5.1 Co-worker 5.2 Supplier 5.3 Client 5.4 Organization receiving the product or service

## EVIDENCE GUIDE

1. Critical aspect of competency	Assessment must show that the candidate: 1.1 Carried out work in accordance with the company's standard operating procedures 1.2 Performed task according to specifications 1.3 Reported defects detected in accordance with standard operating procedures 1.4 Carried out work in accordance with the process improvement procedures
2. Underpinning knowledge	2.1 Relevant production processes, materials and products 2.2 Characteristics of materials/component parts used in electronic production processes 2.3 Quality checking procedures 2.4 Workplace procedures 2.5 Safety and environmental aspects of production processes 2.6 Fault identification and reporting 2.7 Quality improvement process
3. Underpinning skills	3.1 Reading skills required to interpret work instruction 3.2 Communication skills needed to interpret and apply defined work procedures 3.3 Carry out work in accordance with OHS policies and procedures
4. Method of assessment	The assessor may select two (2) of the following assessment methods to objectively assess the candidate: 4.1 Observation 4.2 Questioning 4.3 Practical demonstration
5. Resource implication	Materials and component parts and equipment to be used in a real or simulated electronic production situation
6. Context of Assessment	6.1 Assessment may be conducted in the workplace or in a simulated environment

## CORE COMPETENCIES

<b>UNIT OF COMPETENCY:</b>	<b>PREPARE SURFACE FOR FINAL COAT</b>
<b>UNIT CODE</b> :	<b>FUR714301</b>
<b>UNIT DESCRIPTOR</b> :	This unit covers the knowledge, skills and attitude required to prepare surface for final coating.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and italicized</i> terms are elaborated in the Range of Variables
1. Prepare materials, tools and equipment	1.1 <b><i>Occupational safety and health requirements</i></b> are complied with. 1.2 <b><i>Personal protective equipment</i></b> are selected and used following occupational health and safety requirements 1.3 <b><i>Work instruction</i></b> is secured from appropriate personnel following company rules and regulations. 1.4 <b><i>Materials, tools and equipment</i></b> are prepared following job specifications and manufacturer's recommendations
2. Prepare surface	2.1 <b><i>Surface preparation procedure</i></b> is performed following job requirements 2.2 <b><i>Prepared items</i></b> are stacked following company standard operating procedure
3. Perform good housekeeping	3.1 Put away procedure is performed following company regulations 3.2 Completion report is prepared and submitted to appropriate personnel following company standard operating procedure (SOP). 3.3 Work area is cleaned following company SOP.

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Occupational safety and health requirements	May include but not limited to 1.1 Availability of dust collector 1.2 Availability of dust masks
2. Personal protective equipment	May include but not limited to: 2.1 Dust masks 2.2 Gloves 2.3 Apron 2.4 Safety goggles 2.5 Safety shoes
3. Work instruction	3.1 Verbal 3.2 Written
4. Materials, tools and equipment	May include but not limited to: 4.1 Materials 4.1.1 Sand paper 4.1.2 Putty 4.1.3 Paint remover 4.1.4 Filler 4.1.5 Glaze 4.1.6 Stain 4.2 Tools 4.2.1 Pallet knife 4.2.2 Sanding block 4.2.3 Brushes 4.2.4 Rags 4.2.5 Steel wool 4.3 Equipment 4.3.1 Portable sander 4.3.2 Working table
5. Surface preparation procedure	May include but not limited to: 5.1 Sanding, sealing and <u>base coating</u> 5.2 Sanding, staining and sealing 5.3 Sanding, filling and sealing 5.4 Sanding, filling and staining 5.5 Sanding, filling and special finish

6. Prepared items	6.1 Furniture parts 6.2 Semi-assembled parts 6.3 Full-assembled furniture 6.4 Fittings
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## EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Demonstrates ability to comply with occupational health and safety requirements 1.2 Demonstrates ability to prepare materials, tools and equipment following job specifications 1.3 Demonstrates ability to perform surface preparation procedure 1.4 Demonstrates ability to perform good housekeeping
2. Underpinning Knowledge and Attitudes	2.1 Occupational safety and health standards 2.2 Surface preparation materials, tools and equipment types and uses 2.3 Job specifications or work requirement 2.4 Follow good housekeeping
3. Underpinning Skills	3.1 Complying with occupational health and safety standards 3.2 Using surface preparation materials, tools and equipment 3.3 Following job specifications or work requirement 3.4 Performing good housekeeping
4. Resource Implications	The following resources <b>MUST</b> be provided 4.1 Materials, tools and equipment relevant to the activity 4.2 PPE 4.3 Job specifications
5. Methods of Assessment	Competency <b>MAYBE</b> assessed using the following methods 5.1 Observation of practical skills 5.2 Oral questioning
6. Context of Assessment	6.1 Competency in this unit maybe assessed in the workplace or in a simulated environment.

<b>UNIT OF COMPETENCY:</b>	<b>APPLY SURFACE COATING USING SPRAY GUN SYSTEM</b>
<b>UNIT CODE :</b>	<b>FUR714302</b>
<b>UNIT DESCRIPTOR :</b>	This unit covers the knowledge, skills and attitude required to apply surface coating using spray gun system.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and italicized</i> terms are elaborated in the Range of Variables
1. Prepare materials, tools equipment	<p>1.1 <b>Occupational safety and health requirements</b> are complied with.</p> <p>1.2 <b>Personal protective equipment</b> are selected and used following occupational health and safety requirements</p> <p>1.3 <b>Work instruction</b> is secured from appropriate <b>personnel</b> following company rules and regulations.</p> <p>1.4 <b>Materials, tools and equipment</b> are prepared following <b>job specifications</b> and manufacturer's recommendations.</p>
2. Apply surface coating	<p>2.1 Tools and equipment are tested to conform with job specifications.</p> <p>2.2 <b>Spray gun system</b> is activated according to manufacturer's recommendations.</p> <p>2.3 <b>Finished items</b> are moved following <b>safe handling procedure</b>.</p>
3. Perform good housekeeping	<p>3.1 Put away procedure is performed following company regulations</p> <p>3.2 Completion report is prepared and submitted to appropriate personnel following company standard operating procedure (SOP).</p> <p>3.3 Work area is cleaned following company SOP.</p>

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Occupational safety and health requirements	May include but not limited to: 1.1 Spray booth is working properly 1.2 Appropriate breathing apparatus or mask 1.3 Appropriate gloves
2. Personal protective equipment	May include but not limited to: 2.1 Mask and breathing apparatus 2.2 Apron 2.3 Safety shoes 2.4 Gloves 2.5 Goggles
3. Work instruction	3.1 Verbal 3.2 Written 3.3 Actual sample
4. Personnel	4.1 Finishing Supervisor 4.2 Production Manager 4.3 Company Owner
5. Materials, tools and equipment	May include but not limited to: 5.1 Materials 5.1.1 Paints 5.1.2 Thinner 5.1.3 Color stains 5.1.4 Sealers 5.1.5 Varnish 5.2 Tools 5.2.1 Spray gun 5.2.2 Viscosity cup 5.2.3 Wet and / or dry thermometer 5.2.4 Wrenches 5.2.5 Cleaning brushes 5.3 Equipment 5.3.1 Spray booth 5.3.2 Air compressors 5.3.3 Regulator and filter
6. Job specifications	May include but not limited to: 6.1 Coating type 6.1.1 Base coat 6.1.2 In-between coat 6.1.2 Final or top coat

7. Spray gun system	7.1 Pressure-feed system 7.2 Siphon-feed system 7.3 High volume low pressure 7.4 Airless system 7.5 Air-assisted airless system
8. Finished items	May include but not limited to: 8.1 Furniture parts 8.2 Semi-assembled parts 8.3 Full-assembled furniture 8.4 Fittings 8.4.1 Handles 8.4.2 Hinges
9. Safe handling procedure	May include but not limited to the use of: 9.1 Conveyors 9.2 Pallet trucks 9.3 Trolleys 9.4 Racks

## 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 Demonstrates ability to comply with occupational health and safety requirements</li> <li>1.2 Demonstrates ability to prepare materials, tools and equipment following manufacturer's recommendations and job specifications</li> <li>1.3 Demonstrates ability to apply surface coating following the specified volume per surface area</li> <li>1.4 Demonstrates ability to perform good housekeeping</li> </ul>
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> <li>2.1 Occupational safety and health standards</li> <li>2.2 Coating materials, tools and equipment types and uses</li> <li>2.3 Interpret manufacturer's recommendations</li> <li>2.4 Work piece standard requirements</li> <li>2.5 Follow good housekeeping</li> <li>2.6 Trade Mathematics</li> </ul>
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> <li>3.1 Complying with occupational safety and health standards</li> <li>3.2 Using coating materials, tools and equipment</li> <li>3.3 Interpreting and following manufacturer's recommendations</li> <li>3.4 Following work piece standard requirements</li> <li>3.5 Performing good housekeeping</li> <li>3.6 Applying Trade Mathematics</li> </ul>
<p>4. Resource Implications</p>	<p>The following resources <b>MUST</b> be provided</p> <ul style="list-style-type: none"> <li>4.1 Tools, equipment and materials relevant to the activity</li> <li>4.2 Workplace</li> <li>4.3 PPE</li> </ul>
<p>5. Methods of Assessment</p>	<p>Competency <b>MAYBE</b> assessed using the following methods</p> <ul style="list-style-type: none"> <li>5.1 Observation of practical skills</li> <li>5.2 Oral questioning</li> <li>5.3 Written test</li> </ul>
<p>6. Context of Assessment</p>	<p>6.1 Competency in this unit maybe assessed in the workplace or in a simulated environment.</p>

<b>UNIT OF COMPETENCY:</b>	<b>PERFORM BASIC PREVENTIVE MAINTENANCE ON SPRAY EQUIPMENT AND BOOTH</b>
<b>UNIT CODE :</b>	<b>FUR714303</b>
<b>UNIT DESCRIPTOR :</b>	This unit covers the knowledge, skills and attitude required to perform basic preventive maintenance servicing for spray gun system and booth.

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b> <i>Bold and italicized</i> terms are elaborated in the Range of Variables
1. Identify defects	1.1 Occupational safety and health requirements are complied with 1.2 <b>Personal protective equipment</b> are selected and used following occupational health and safety requirements 1.3 <b>Spray gun equipment and booth minor defects</b> are identified following company standard operating procedure (SOP) 1.4 <b>Spray gun equipment and booth major defects</b> are identified and reported following SOP
2. Perform basic preventive maintenance servicing	2.1 <b>Basic hand tools and repair kit</b> are prepared according to job requirements 2.2 <b>Basic preventive maintenance servicing</b> for spray gun equipment and booth is performed according to job requirements
3. Prepare maintenance report	3.1 Maintenance report is accomplished to appropriate <b>personnel</b> following company SOP 3.2 Maintenance report is submitted to appropriate personnel following company SOP

## RANGE OF VARIABLES

VARIABLE	RANGE
1. Personal protective equipment	May include but not limited to: 1.1 Mask and breathing apparatus 1.2 Apron 1.3 Safety shoes 1.4 Gloves 1.5 Goggles
2. Spray gun equipment and booth minor defects	May include but not limited to: 2.1 Clogged spray gun 2.2 Worn-out gaskets 2.3 Broken spring 2.4 Saturated and worn-out filter
3. Spray gun equipment and booth major defects	May include but not limited to: 3.1 Burned motor suction system 3.2 Defective water pump 3.3 Defective air compressor 3.4 Leaks in hoses and tubes 3.5 Defective air filter 3.6 Busted lights
4. Basic hand tools and repair kit	May include but not limited to: 4.1 Basic hand tools 4.1.1 Spray gun wrench 4.2 Repair kit 4.2.1 Nozzle 4.2.2 Gasket 4.2.3 Spring
5. Basic preventive maintenance servicing	5.1 Clean clogged spray gun 5.2 Replace worn-out gaskets 5.3 Replace broken spring 5.4 Replace filter 5.5 Replace damaged nozzle
6. Personnel	May include but not limited to: 6.1 Maintenance 6.2 Finishing supervisor 6.3 Production manager

## EVIDENCE GUIDE

1. Critical Aspects of Competency	Assessment requires evidence that the candidate: 1.1 Demonstrates ability to identify spray gun equipment and booth major and minor defects 1.2 Demonstrates ability to perform basic preventive maintenance servicing for spray gun equipment and booth minor defects 1.3 Demonstrates ability to accomplish maintenance report
2. Underpinning Knowledge and Attitudes	2.1 Spray gun equipment and booth minor and major defects 2.2 Basic preventive maintenance servicing procedure for minor defects 2.3 Company standard operating procedure
3. Underpinning Skills	3.1 Identifying and servicing spray gun equipment and booth minor defects 3.2 Identifying and reporting spray gun equipment and booth major defects 3.3 Complying with company standard operating procedures
4. Resource Implications	The following resources <b>MUST</b> be provided 4.1 Defective spray gun equipment and booth 4.2 Basic hand tools and repair kit 4.3 Maintenance report form
5. Methods of Assessment	Competency <b>MAYBE</b> assessed using the following methods 5.1 Observation of practical skills 5.2 Oral questioning
6. Context of Assessment	6.1 Competency in this unit maybe assessed in the workplace or in a simulated environment.

## 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 **FURNITURE MAKING (FINISHING) NC II**.

### 3.1 CURRICULUM DESIGN

Course Title: **Furniture Finishing**

Level: **NC II**

**Nominal Training Duration:**

**Course Description:**

This course is designed to enhance the knowledge, skills and desirable work attitude of a furniture finisher. It covers the basic, common and core competencies i.e. lay and repair floor and wall tiles, tile corners and curved surfaces.

### BASIC COMPETENCIES (18\_Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Participate in workplace communication	1.1 Obtain and convey workplace information 1.2 Complete relevant work related documents 1.3 Participate in workplace meeting and discussion.	Group discussion Interaction	Demonstration Observation Interviews/ questioning
2. Work in a team environment	2.1 Describe and identify team role and responsibility in a team 2.2 Describe work as a team member	Discussion Interaction	Demonstration Observation Interviews/ questioning

<p>3. Practice career professionalism</p>	<p>3.1 Integrate personal objectives with organizational goals.  3.2 Set and meet work priorities.  3.3 Maintain professional growth and development</p>	<p>Discussion  Interaction</p>	<p>Demonstration  Observation  Interviews / questioning</p>
<p>4. Practice occupational health and safety</p>	<p>4.1 Evaluate hazard and risks  4.2 Control hazards and risks  4.3 Maintain occupational health and safety awareness</p>	<p>Discussion  Plant tour  Symposium</p>	<p>Observation  Interview</p>

**COMMON COMPETENCIES**  
(96\_Hours)

Unit of Competency	Learning Outcomes	Methodology	Assessment Approach
1. Perform mensuration and calculation	1.1 Select measuring instruments 1.2 Carry out measurements and calculations	Self –paced instructions Discussion Practical exercises	Observation Oral questioning Written test
2. Interpret Technical Drawing	2.1 Analyze sign, symbols and data 2.2 Interpret technical drawing and plans 2.3 Apply freehand sketching	Self –paced instructions Discussion Practical exercises	Observation Oral questioning Written test
3. Observe procedures, Specifications and Manuals of Instructions	3.1 Identify and access specification/ manuals	Self –paced instructions Discussion Practical exercises	Observation Oral questioning Written test
4. Comply with industry (OH&S) guidelines and standards  5. Maintain tools and equipment	4.1 Follow safe workplace procedures for hazard identification and risk control 4.2 Employ safe working practices 4.3 Respond to accidents 5.1 Check condition of tools and equipment 5.2 Perform basic preventive Maintenance 5.3 Store tools and equipment	Self –paced instructions Discussion Practical exercises  Self –paced instructions Discussion Practical exercises	Observation Oral questioning Written test  Observation Oral questioning Written test

**Unit of  
Competency**

<b>Unit of Competency</b>	<b>Learning Outcomes</b>	<b>Methodology</b>	<b>Assessment Approach</b>
6. Use hand tools	6.1 Prepare hand tools 6.2 Utilize hand tools 6.3 Store hand tools	Self –paced instructions Discussion Practical exercises	Observation Oral questioning Written test
7. Apply quality standards	7.1 Assess quality of received materials or components 7.2 Assess own work 7.3 Engage in process improvement	Self –paced instructions Discussion Practical exercises	Observation Oral questioning Written test

**CORE COMPETENCIES**  
(98\_Hours)

<b>Unit of Competency</b>	<b>Learning Outcomes</b>	<b>Methodology</b>	<b>Assessment Approach</b>
1. Perform basic preventive maintenance on spray equipment and booth	1.1 Identify coating tools and equipment defects 1.2 Perform basic preventive maintenance servicing	Self –paced instructions Discussion Practical exercises	Observation Oral questioning Written test
2. Prepare surface for final coat	2.1 Prepare materials, 2.2 Tools and equipment 2.3 Prepare surface 2.4 Perform good housekeeping	Self –paced instructions Discussion Practical exercises	Observation Oral Questioning Written test
3. Apply surface coating using spray gun system	3.1 Prepare materials, tools and equipment 3.2 Apply surface coating	self –paced instructions Discussion Practical exercises	Observation Interview Written test

## 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 learner-centered and should accommodate individualized and self-paced learning strategies;

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;

Training program allows for recognition of prior learning (RPL) or current competencies;

Training allows for multiple entry and exit; and

Training programs are registered with the UTPRAS.

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 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, or audio, video or computer technologies.

Project-Based Instruction is an authentic instructional model or strategy in which students plan, implement and evaluate projects that have real world applications.

### **3.3 TRAINEE ENTRY REQUIREMENTS**

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

- Good moral character
- Ability to communicate
- Physically fit and mentally healthy
- Can perform basic mathematical computation and mensuration

### 3.4 LIST OF TOOLS, EQUIPMENT AND MATERIALS FOR FURNITURE FINISHING NC II

TOOLS		EQUIPMENT		MATERIALS	
QTY.	ITEM	QTY.	ITEM	QTY.	ITEM
5 pcs.	Spray gun	5	Spray booth (dry type)	25 liters	Paints
5 pcs.	Viscosity cup	1 unit	Air compressors	25 liters	Thinner
1 pc.	Wet and / or dry thermometer	1 unit	Regulator and filter	13 bottles	Color stains
5 pcs.	Spray gun Wrenches	1 unit	Trolley	12.5 liters	Sealers
5 pcs.	Cleaning brushes	5 units	Racks	12.5 liters	Varnish
25 pcs.	Pallet knife	5 units	Portable sander	25 pcs.	Sample coating board (12 "X12 ")
25 pcs	Sanding block	5 units	Working table	75 pcs.	Sand paper (240, 360, 600)
25 pcs	Brushes	1 unit	Dust collector	1 liter	Putty
		25 units	PPE	5 liters	Paint remover
				5 liters	Filler
				5 liters	Glaze
				2 kilos	Rags
				5 pcs	Steel wool

### 3.5 TRAINING FACILITIES

The training facility is based on the size of class 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>
Contextual Learning Laboratory / Lecture Room		<u>40</u>	<u>40</u>
Learning Resource Center		<u>20</u>	<u>20</u>
Tool Room/Storage		<u>10</u>	<u>10</u>
Wash room		<u>20</u>	<u>20</u>
Circulation area		<u>50</u>	<u>50</u>
Shop room		<u>60</u>	<u>60</u>
<b><u>TOTAL AREA</u></b>			<b><u>200</u></b>

### **3.6 TRAINER'S QUALIFICATION FOR FURNITURE FINISHING NC II**

- Must have undergone training on Training Methodology II (TM II)
- Must be a holder of National Certificate Level II or its equivalent
- Good moral character
- Must be computer literate
- 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**

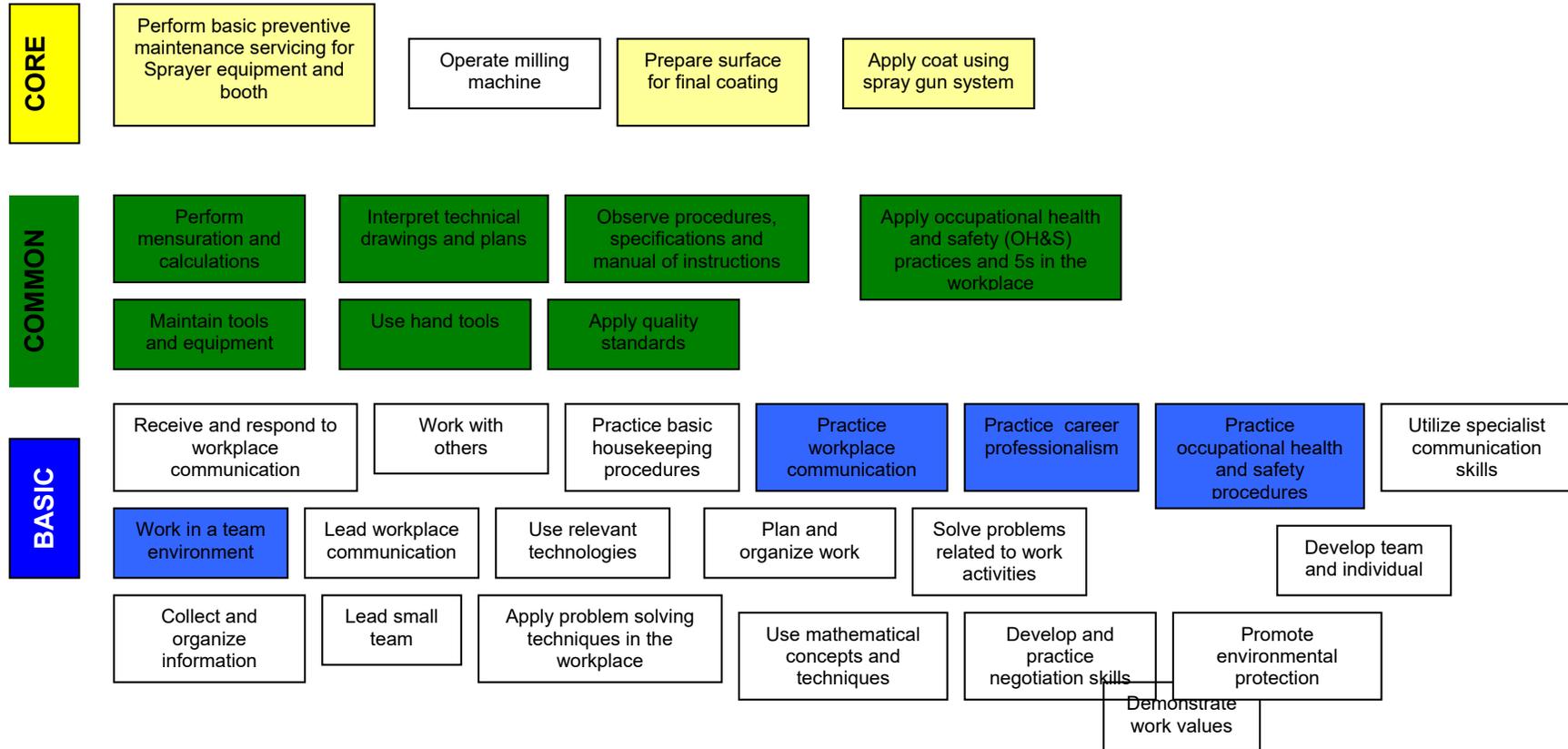
Institutional assessment is undertaken by trainees to determine their achievement of units of competency. A certificate of achievement is issued for each unit of competency.

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

- 4.1. To attain the National Qualification of **Furniture Making (Finishing) NC II**, 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.
- 4.1 The qualification of **FURNITURE MAKING (FINISHING) NC II** can be attained through demonstration of competence in a project-type assessment covering the following core units.
  - 4.1.1 Prepare surface for final coating
  - 4.1.2 Apply coat using spray gun system
  - 4.1.3 Perform basic preventive maintenance servicing for spray gun equipment and booth
- 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
  - 4.4.2. 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 FURNITURE MAKING INDUSTRY

## FINISHING (NC II)



## DEFINITION OF TERMS

1. Competency Is the application of knowledge, skills and attitudes to perform work activities to the standard expected in the workplace.
2. Certification Refers to the process of verifying and validating competencies of a person through assessment.
3. 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.
4. 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. 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.
7. 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.
8. Range of Variable It describes the circumstances or context in which the work is to be performed.
9. Unit of Competency Refers to a discrete aspect of work, which would normally be performed by only one person.

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