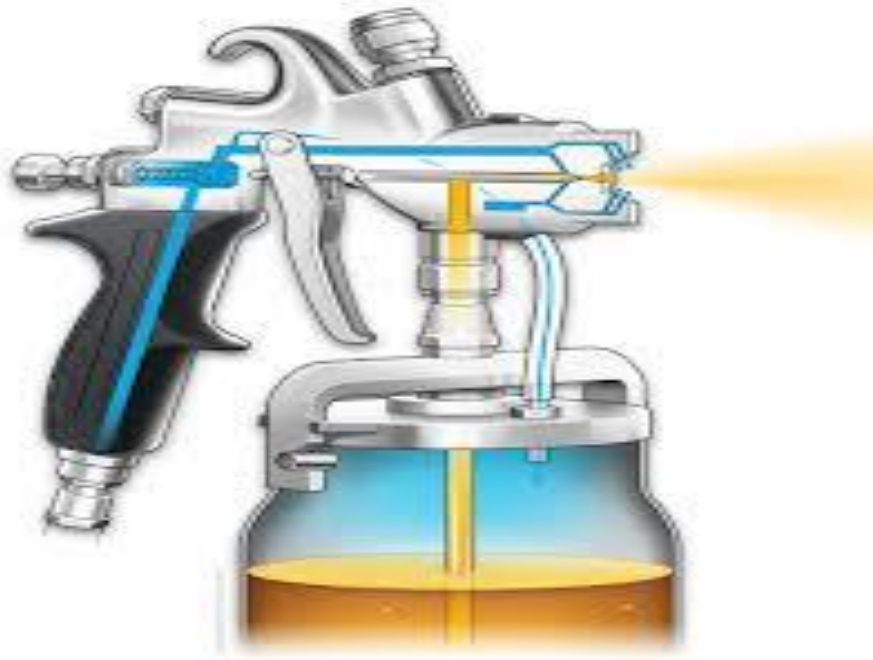




COMPETENCY BASED STANDARD

FURNITURE TRADE SECTOR



FURNITURE FINISHER

SKILLS LEVEL III

ISCO 7421

ADB Grant 0211-LAO

Strengthening Technical and Vocational Education and Training (STVET) Project





DRAFT
VERSION 1

NATIONAL COMPETENCY STANDARDS
FOR
FURNITURE FINISHER (SPRAYING) LEVEL III

A COMPETENCY STANDARD DEVELOPED FOR
THE LAO NATIONAL VOCATIONAL QUALIFICATION FRAMEWORK
STRENGTHENED TECHNICAL AND VOCATIONAL EDUCATION AND TRAINING PROJECT
ADB GRANT 0211 – LAO

VIENTIANE, LAO PDR
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LAO NATIONAL VOCATIONAL QUALIFICATION FRAMEWORK

The Lao National Vocational Qualification Framework (LNVQF) establishes the system in the development and implementation of national standards, institutional arrangements and processes relating to quality assurance, assessment and the award of qualifications in technical –vocational education and training. The Lao National Vocational Qualification Framework classifies qualifications according to set criteria for specific levels of learning achieved, which aim to integrate and coordinate national qualifications sub-systems and improve the transparency, access, progression and quality of qualifications in relation to the labor market and civil society. The framework establishes the use of Competency Standards in the undertaking of technical – vocational education and training.

The Competency Standards serves as basis for the development of other components of the qualification framework as follows:

1. Development of competency – based curriculum;
2. Development of modular competency –based learning package;
3. Development of competency – based assessment tools and instruments;
4. Competency assessment and certification;
5. Registration and accreditation of newly developed technical –vocational courses and their respective levels of qualifications to the technical – vocational education and training Authority.

FURNITURE FINISHER (SPRAYING)

TABLE OF CONTENTS

Lao Qualification Levels and Descriptors	5
Composition of a Competency Standard	6
Competency Standard for Furniture Finisher – Level III	7
Unit of Competencies	8
Basic Competencies	9
Common competencies	25
Core Competencies	35
Curriculum Design	46
Basic Competencies	46
Common competencies	47
Core Competencies	48
Related Information	49
Curriculum Design	49
Technical Facility	49
Institutional Assessment	49
National Assessment and Certification	49
Glossary of Competency Standard Terms	50
Glossary of Wood Working Terms	53
Understanding the Unit Code	62
Acknowledgment	66
Awards and Progression Training Entry/ Requirement Model – Furniture Trade	

LAO QUALIFICATION LEVELS AND DESCRIPTORS

The Lao Qualification (LQ) Levels is a vital part of LNVQF's quality assurance system in standardizing the classification of job qualifications across all occupations where a competency standard has to be developed for the purpose of education and employment.

LQ Levels indicate the quantity and coverage of competencies an individual has to successfully demonstrate in order to receive a national certification or a professional recognition. The qualifications are titled by their alpha – numerical levels and give distinction to each unit of competency.

The level of qualification is defined based on the following criteria:

Qualification Level	Descriptors
LQ 5 (Advance Diploma)	Can translate engineering designs and concepts into practical actions; supervise the skilled workers and perform work programming, calculations, and fine tuning of systems, work processes and equipment; ensure implementation of quality assurance.
LQ 4 (Diploma)	Can supervise the routine work of others; responsible for evaluation and improvement of work processes; analyse and troubleshoots occurring work problems; Perform a whole range of work at high level of competence including those involving technical decision-making, limited interpretation and execution of plans and work designs. Operates programmed or computerized production equipment.
LQ 3 (Level III)	Can perform complicated fabrication work using complex or multi-functional equipment; can work on jobs requiring minimal tolerance; responsible for the entrusted equipment; can solve work problems using basic methods, tools materials and information.
LQ 2 (Level II)	Can operate simple or basic machines and equipment; interpret and make simple sketches or diagrams and perform repetitive tasks. Can perform simple mathematical operations, calculations, estimates and do preventive maintenance on equipment and housekeeping.
LQ 1 (Level I)	Can apply basic factual information and skills to perform simple tasks requiring close supervision.

COMPOSITION OF A COMPETENCY STANDARD

The Competency Standard is a written specification of job performance determined by industry experts and developed together with institutional experts that identified the skills, knowledge and attitudes essential for the successful performance of the job¹. The Competency Standard contains the following components and descriptions:

Basic Competency	Is a work competency that is classified as non-technical skills but is very necessary in the successful performance of any work since it is manifested by core behaviors and abilities that determine the effective and efficient outcome of work. These competencies forms part of the competency standards and their degree of application could vary depending on the work role ² . A basic competency is a competency used across all trade or occupational areas.
Common Competency	Is a work competency common to one trade or occupational areas. A common competency can be either technical or non-technical knowledge, skills and attitude but is very necessary in the successful performance of any work since it is manifested by core behaviors and abilities that determine the effective and efficient outcome of work
Core Competency	The core technical knowledge, skills and attitude that a person must possess in order to perform a job effectively with respect to expected outcome at an acceptable time and degree of quality. Core competencies are described and linked to industry-based competency standards and they play a different role in the overall way a person applies their skills and knowledge in work or other roles ³ .
Unit of Competency	A statement that refers to the relevant unit of competency necessary to perform a given tasks. It is stated in terms of outcome. Each unit is a building block of the competency standard specifying the elements, performance criteria, range of variable and evidence guide.
Unit Code⁴	Represents the unit of competency in alpha-numeric form from amongst the different unit of competencies of the trade or occupational areas.
Unit Descriptor	Describes the scope of the unit of competency in terms of knowledge, skills and attitudes. It is an expansion of the Unit Title which states the general application of skills and knowledge and attitude on the job.
Element of Competency	Is the building block of a unit of competency which describes the key aspects of the job a person must be able to do relative to his role or function.
Performance Criteria	Are evaluative statements specifying the performance standards to be achieved and linked to assessment procedures.

¹ Manual on Competency Standard Setting, STVET Project

²These competencies are not a technical description of specific work but are more like underpinning abilities that an individual applies when working effectively and efficiently. Generic Employability Skills, Draft Regional Model Competency Standards, ILO 2010.

³Generic Employability Skills, Draft Regional Model Competency Standards, ILO 2010.

⁴ The Unit Code used in basic, common and core competencies in this manual are just a proposal and not yet final.

COMPETENCY STANDARD FOR FURNITURE FINISHER (SPRAYING) – LEVEL III

QUALIFICATION DESCRIPTOR

Lao Qualification Level III

A person that has a Lao Qualification 3 (LQ 3) Level III can perform complicated fabrication work using complex or multi-functional equipment; can work on jobs requiring minimal tolerance; responsible for the entrusted equipment; can solve work problems using basic methods, tools materials and information.

Level III is the third level of the national competency qualification for a furniture maker in the furniture making industry. This consists of competencies that a person must achieve in order to perform the competencies of a Furniture Finisher (Spraying) Level III.

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

1. Furniture Making Finisher

In particular, a person with a Certificate Level III Qualification has core competencies in:

1. Processing surface of wood furnitures
2. Use a spray gun and compressor

TRAINEE ENTRY REQUIREMENTS:

A person who would like to attend the competency training and assessment in LQ 3 (Level III) must satisfy the following criteria:

1. A graduate of a Certificate 9 program or has at least one (1) year of work and/or technical experience in a public or private company.
2. Has completed Window Maker Level II or Table Maker Level II
3. Able to communicate orally and in writing.
4. Proficient in verbal reasoning.
5. Physically fit

TRAINER REQUIREMENT:

A Trainer who will conduct Level III training must be a certified Trainer Qualification III Trainer with at least two (2) years experience as a TVET or industry trainer in furniture finishing.

UNIT OF COMPETENCIES
FURNITURE FINISHER (SPRAYING) LEVEL III

Basic Competency

Unit Code	Basic Competencies
742.7421.031.001.01.01	Participate in workplace communication
742.7421.031.002.01.01	Use mathematical concepts and techniques
742.7421.031.003.01.01	Work in team environment
742.7421.031.004.01.01	Apply gender and social equity principles and policies

Common Competency

Unit Code	Common Competencies
742.7421.031.005.01.01	Interpret technical drawings and plans
742.7421.031.006.01.01	Perform measurement and calculation
742.7421.031.007.01.01	Apply quality standards

Core Competency

Unit Code	Core Competencies
742.7421.031.008.01.01	Prepare surface for coating
742.7421.031.009.01.01	Use Spray gun system and hand tools
742.7421.031.010.01.01	Apply surface coating using Spray Gun system

BASIC COMPETENCIES

UNIT OF COMPETENCY: **Participate in workplace communication**

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitude required to gather, interpret and convey information in response to workplace requirements.

UNIT CODE: **742.7421.031.001.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Obtain and convey workplace information	1.1 Specific and relevant information is accessed from appropriate sources 1.2 Effective questioning, active listening and speaking skills are used to gather and convey information 1.3 Appropriate medium 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 storage 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 protocols 2.4 Workplace interactions 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
3. Complete relevant work related documents	3.1 Range of forms relating to conditions of employment are completed accurately and legibly 3.2 Workplace data is recorded on standard workplace forms and documents 3.3 Basic mathematical processes are used for routine calculations 3.4 Errors in recording information on forms/ documents are identified and properly acted upon 3.5 Reporting requirements to supervisor are completed according to organizational guidelines

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 4.2 Telephone message forms 4.3 Safety report forms
5. Workplace interactions	5.1 Face to face 5.2 Telephone 5.3 Electronic and two way radio 5.4 Written instructions 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"> 1.1 Prepared written communication following standard format of the organization 1.2 Accessed information using communication equipment 1.3 Made use of relevant terms as an aid to transfer information effectively 1.4 Conveyed information effectively adopting the formal or informal communication
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Effective communication 2.2 Different modes of communication 2.3 Written communication 2.4 Organizational policies 2.5 Communication procedures and systems 2.6 Technology relevant to the enterprise and the individual's work responsibilities
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Follow simple spoken language 3.2 Perform routine workplace duties following simple written notices 3.3 Participate in workplace meetings and discussions 3.4 Complete work related documents 3.5 Estimate, calculate and record routine workplace measures 3.6 Basic mathematical processes of addition, subtraction, division and multiplication 3.7 Ability to relate to people of social range in the workplace 3.8 Gather and provide information in response to workplace requirements
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> 4.1 Fax machine 4.2 Telephone 4.3 Writing materials 4.4 Internet
<p>5. Method of Assessment</p>	<p>Competency may be assess through:</p> <ul style="list-style-type: none"> 5.1 Direct Observation 5.2 Oral interview and written test
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency may be assessed individually in the actual workplace or through accredited institution

UNIT OF COMPETENCY: **Use mathematical concepts and techniques**

UNITDESCIRPTOR: This unit covers the knowledge, skills and attitude required in the application of mathematical concepts and techniques.

UNIT CODE: **742.7421.031.002.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Identify mathematical tools and techniques to solve problem	1.1 Problem areas are identified based on given condition 1.2 Mathematical techniques are selected based on the given problem
2. Apply mathematical procedure and 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 out come 3.2 Appropriate action is applied in case of error

RANGE OF VARIABLES

VARIABLE	RANGE
1. Mathematical techniques	May include but not limited to: 1.1 Four fundamental operations 1.2 Measurements 1.3 Use and conversion of units of measurements 1.4 Use of standard formulas
2. Appropriate action	May include but not limited to: 2.1 Review in the use of mathematical techniques 2.2 Report error to immediate superior for proper action

EVIDENCE GUIDE

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

UNIT OF COMPETENCY: **Work in a team environment**

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitude to identify role and responsibility as a member of a team.

UNIT CODE: **742.7421.031.003.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Describe team role and scope	<p>1.1 The role and objective of the team is identified from available sources of information</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 workplace context</p> <p>3.3 Observed protocols in reporting using standard operating procedures</p> <p>3.4 Contribute to the development of team work 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 judgment 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

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Operated in a team to complete workplace activity 1.2 Worked effectively with others 1.3 Conveyed information in written or oral form 1.4 Selected and used appropriate workplace language 1.5 Followed designated work plan for the job 1.6 Reported outcomes
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Communication process 2.2 Team structure 2.3 Team roles 2.4 Group planning and decision making
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Communicate appropriately, consistent with the culture of the workplace
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <ul style="list-style-type: none"> 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
<p>5. Method of Assessment</p>	<p>Competency may be assess through:</p> <ul style="list-style-type: none"> 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
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> 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

UNIT OF COMPETENCY: **Apply gender and social equity principles and policies**

UNIT DESCIRPTOR: This unit covers the knowledge, skills and attitudes to apply principles and policies on gender and social equity contributing to positive and productive work environment. This deals with complying with gender and social equity guidelines in the workplace; promoting gender and social equity in the workplace; and recognizing and preventing gender abuse and other forms of social inequities.

UNIT CODE: **742.7421.031.004.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Follow guidelines or rules of conduct related to gender and social equity in the workplace	<p>1.1 Workplace practices and work instructions relating to interacting with different social groups based on gender, ethnicity and disability are recognized and followed, and clarification is sought where necessary.</p> <p>1.2 Relevant legislation, codes and national standards that impact on gender and social equity are recognized and followed.</p> <p>1.3 Introduction of and amendments to guidelines in the work conduct related to gender and social fairness practices are responded to positively and promptly in accordance with organizational requirements.</p>
2. Contribute to improve workplace guidelines in promoting gender and social equity	<p>2.1 Suggestions are made to designated personnel on how to improve social interaction and communication in the workplace to better promote gender and social equity</p> <p>2.2 Information is gathered and improvements are suggested to help improve workplace guidelines and policies in promoting observing gender and social fairness.</p> <p>2.3 Gender and social equity issues in the workplace practices are discussed in the workplace with colleagues and designated personnel.</p> <p>2.4 Contributions to the review of workplace guidelines and policies gender and social equity guidelines and policies are made within limits of responsibility</p>

<p>3. Recognize and report suspected cases of gender and other forms of social inequity</p>	<p>3.1 Signs and manifestations of gender and social inequities and its impact in the workplace are recognized.</p> <p>3.2 Information about or observations of a suspected problem related to gender and social inequity are reported to supervisors and appropriate authorities.</p> <p>3.3 Location and extent of suspected gender and social inequities is accurately recorded.</p> <p>3.4 Reports on the effect of gender and social inequities are completed according to organizational guidelines.</p>
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RANGE OF VARIABLES

VARIABLE	RANGE
1. Workplace practices and work instructions	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 1.1 Social diversity awareness, recognition and analysis in the workplace 1.2 Use of gender fair and socially inclusive language in dealing with co-workers and students 1.3 Sexual harassment and bullying incident recording and reporting procedures 1.4 Verbal instructions from persons with responsibility related to gender and social equity awareness and sensitivity
2. Legislation, codes and national standards	<ul style="list-style-type: none"> 2.1 Code of Conduct on sexual harassment in TVET institutions under MoES 2.2 National Strategy for the Advancement of Women, 2005-2010 (includes goals and programmes to promote Lao women’s education, skill levels, income generating opportunities, among others) 2.3 Lao PDR Law on Development and Protection of Women (Among others, aims to promote women’s knowledge and competency, revolutionary morals and virtues, gender equality; seeks to eliminate all forms of discrimination against women; creates enabling conditions for women’s participation; and for women to be equal force in national protection and development) 2.4 Labor Law of Lao PDR, 1994 (Articles 2, 39 & 35) 2.5 Constitution of Lao PDR, 2003 (Articles 22, 24 & 27, statement on women of all ethnic groups should receive equal treatment in terms of legal rights, economic and social opportunities) 2.6 National obligations to international human rights conventions (Convention on the Elimination of all Forms of Discrimination against Women (CEDAW), 1981; Convention on the Rights of the Child (CRC), 1990)

VARIABLE	RANGE
3. Suggestions	<p>3.1 Be sensitive in terms of gender, ethnicity and disability in verbal and non-verbal communication</p> <p>3.2 Stop the repetition of sexist and discriminatory sex jokes</p> <p>3.3 Create and share jokes that are not told at the expense of different social groups</p> <p>3.4 Recognize the rights of different social groups i.e. women, different ethnic groups, the disabled to equal access to training and skills development, respectful treatment, etc.</p>
4. Designated personnel	<p>4.1 School Administrator</p> <p>4.2 Head teacher</p> <p>4.3 Teacher and school staff designated as gender and social equity focal point</p>
5. Workplace guidelines and policies in promoting observing gender and social fairness	<p>5.1 Guiding workplace conduct against committing and reporting sexual harassment</p> <p>5.2 Using language that is sensitive in terms of gender, ethnicity and disability</p> <p>5.3 Information on personnel policies that are aligned with national and official policies and guidelines that uphold the rights of women, ethnic groups and the disabled</p> <p>5.4 Provision of separate and secure accommodations, toilets wash and resting areas for women, ethnic groups and disabled people</p> <p>5.5 The designation of a gender focal point among teachers, non-teaching staff and among student population.</p>
6. Gender and social equity issues	<p>6.1 Sexual harassment</p> <p>6.2 Bullying</p> <p>6.3 Voyeurism</p> <p>6.4 Different forms of gender-based violence</p> <p>6.5 Inappropriate and discriminatory language</p> <p>6.6 Sex jokes that are discriminatory against women, ethnic groups, disabled people</p> <p>6.7 Discrimination in the workplace</p>

VARIABLE	RANGE
7. Signs or manifestations	7.1 Sub-standard performance, social withdrawal of affected group or individual 7.2 Lack of motivation to advance or excel 7.3 Absenteeism, intention to resign without reason 7.4 Display of fear, nervous and seemingly irrational behavior of affected group in the presence of perpetrator
8. Reported	8.1 Verbally (face-to-face or through communication equipment) 8.2 In writing (memo, notes, faxes, email or electronic messages) 8.3 Witness or third party accounts
9. Recorded	9.1 Incident report 9.2 Public petitions 9.3 Close Circuit Television (CCTV) in the workplace

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Demonstrated knowledge of workplace practices and work instructions. 1.2 Described relevant legislations, codes and national standards related to gender and social equity issues in the workplace 1.3 Followed workplace practices, policies and guidelines related to gender and social equity 1.4 Contributed to improve workplace guidelines in promoting gender and social equity 1.5 Recognized and reported on suspected cases of gender and other forms of social inequity 1.6 Reported, recorded or became aware of the need to report and document lack of compliance with guidelines and policies on gender and social fairness in the workplace
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Relevant legislation from all levels of government on gender and other social equity issues involving ethnic groups and disability 2.2 Relevant gender and social equity official legislation, policies and workplace practices and procedures 2.3 Good practice approaches relevant to work area particularly in regard to observance of and compliance with guidelines and policies that uphold and promote gender and social equity. 2.4 Gender and other social equity issues, especially in regard to sexual harassment and gender and other discrimination in the workplace 2.5 Gender issues in TVET areas traditionally not associated with women 2.6 General work place practices and their potential impact on the gender and other dimensions of social equity.

<p>3. Underpinning Skills</p>	<p>3.1 Discuss and explain gender and other social equity issues in TVET</p> <p>3.2 Communicate with co-workers and students in an inclusive manner that respects the rights of the different groups that constitute the workplace and the classroom</p> <p>3.3 Recognize signs and manifestations of sexual harassment and other forms of gender-based violence in the workplace and in the classroom</p> <p>3.4 Follow workplace directions and instructions</p> <p>3.5 Ability to report and document cases of sexual harassment and other forms of gender-based violence and violence directed at other disadvantaged groups</p>
<p>4. Resource Implications</p>	<p>The following resources must be provided:</p> <p>4.1 Basic sensitization workshop on gender and other social equity issues</p> <p>4.2 Legislation, policies, procedures, protocols and local ordinances relating to gender and social equity.</p> <p>4.3 Case studies and scenarios relating to the reporting and handling of cases of sexual harassment and other forms of gender-based violence</p>
<p>5. Method of Assessment</p>	<p>Competency may be assess through:</p> <p>5.1. Written or oral Examination</p> <p>5.2. Interview or Third Party Reports</p> <p>5.3. Certificate of attendance in basic sensitization workshop on gender and other social equity issues</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>

COMMON COMPETENCIES

UNIT OF COMPETENCY: **Interpret technical drawings and plans**

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitude in analyzing and interpreting technical drawings, symbols, data and work plan.

UNIT CODE: **742.7421.031.005.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Analyze signs, symbols and data	1.1 Technical plans 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 classification or as appropriate in the technical drawing
2. Interpret technical drawings and plans	2.1 Necessary equipment, tools and materials are identified according to the work plan 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 or available resources and in line with job requirements 2.6 Work plan is drawn following the specifications
3. Apply freehand sketching	3.1 Freehand sketching of parts, components, views and joineries is produced as required by the job. 3.2 Freehand sketch is prepared based on technical drawing standards.

RANGE OF VARIABLES

VARIABLE	RANGE
1. Technical plans	May include but not limited to: 1.1 Blueprint 1.2 Technical drawing 1.3 Working drawings 1.4 Work plan
2. Technical drawing	May include but not limited to: 2.1 Drawing symbols 2.2 Alphabet of lines 2.3 Orthographic views 2.3.1 Front view 2.3.2 Right side view/left side view 2.3.3 Top view 2.3.4 Pictorial view 2.4 Schematic drawing
3. Tools and materials	May include but not limited to: 3.1 Compass 3.2 Divider 3.3 Rulers 3.4 Triangles 3.5 Drawing tables 3.6 Pencil 3.7 Drawing paper 3.8 Computer
4. Work plan	4.1 Job requirements 4.2 Installation instructions 4.3 Components instruction

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 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 work plan following specifications 1.5 Determined job specifications based on technical drawing and work plan
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Trade Mathematics <ul style="list-style-type: none"> 2.1.1 Linear measurement 2.1.2 Dimension 2.1.3 Unit conversion 2.2 Blueprint Reading and Plan Specification <ul style="list-style-type: none"> 2.2.1 Electrical, mechanical plan, symbols and abbreviations 2.2.2 Drawing standard symbols 2.3 Trade Theory <ul style="list-style-type: none"> 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
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Interpreting drawing or 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
<p>4. Resource Implications</p>	<p>The following resources should be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace 4.2 Drawings and specification relevant to task 4.3 Materials and instrument relevant to proposed activity
<p>5. Method of Assessment</p>	<p>Competency may be assess through:</p> <ul style="list-style-type: none"> 5.1 Direct observation 5.2 Interview 5.3 Test related to underpinning skills

6. Context for Assessment	<p data-bbox="614 212 1422 280">6.1 Competency may be assessed in the work place or in a simulated work place</p> <p data-bbox="614 295 1366 362">6.2 Assessment shall be observed while task are being undertaken whether individually or in group</p> <p data-bbox="614 378 1329 445">6.3 Competency assessment must be undertaken in accordance with the assessment guidelines</p>
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UNIT OF COMPETENCY: **Perform measurement and calculation**

UNITDESCIRPTOR: This unit covers the knowledge, skills and attitude on identifying and measuring objects based on the required performance standards.

UNIT CODE: **742.7421.031.006.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Select measuring instruments	<p>1.1 Object or component to be measured is identified</p> <p>1.2 Correct specifications are obtained from relevant sources</p> <p>1.3 Appropriate measuring instrument is selected according to job requirements</p>
2. Carry out measurements and calculation	<p>2.1 Measuring tools are selected in line with job requirements</p> <p>2.2 Accurate measurements are obtained as required on the job</p> <p>2.3 Calculation needed to complete work tasks are performed using the four basic process of addition (+), subtraction (-), multiplication (x) and division (/)</p> <p>2.4 Calculations involving fractions, percentages and mixed numbers are used to complete workplace tasks</p> <p>2.5 Numerical computation is self-checked and corrected for accuracy Instruments are read to the limit of accuracy of the tool</p>
3. Maintain measuring instruments	<p>3.1 Measuring instruments must kept free from corrosion</p> <p>3.2 Dropping of measuring instruments and devices are avoided in order not to incur damage</p> <p>3.3 Measuring instruments cleaned before and after using</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Measuring instruments	May include but not limited to: 1.1 Vernier caliper 1.2 Straight Edge 1.3 Try square 1.4 Divider 1.5 Measuring tape 1.6 Spring rule 1.7 Carpenter's rule 1.8 Plumb level 1.9 Torpedo level
2. Calculations	May include but not limited to: 2.1 Area 2.2 Inside diameter 2.3 Circumference 2.4 Length 2.5 Depth 2.6 Thickness 2.7 Outside diameter

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 1.1 Selected measuring instruments 1.2 Carried-out measurements and calculations 1.3 Maintained measuring instruments
<p>2. Underpinning Knowledge and Attitude</p>	<ul style="list-style-type: none"> 2.1 Types of measuring instruments and its uses 2.2 Safe handling procedures in using measuring instruments 2.3 Four fundamental operation of mathematics 2.4 Formula for Volume, Area, Perimeter and other geometric figures
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 3.1 Caring and Handling measuring instruments 3.2 Calibrating and using measuring instruments 3.3 Performing calculation by Addition, Subtraction, Multiplication and Division 3.4 Visualizing objects and shapes 3.5 Interpreting formula for volume, area, perimeter and other geometric figures
<p>4. Resource Implications</p>	<p>The following resources Must be provided:</p> <ul style="list-style-type: none"> 4.1 Workplace location 4.2 Measuring instrument appropriate to servicing processes 4.3 Instructional materials relevant to the propose activity
<p>5. Method of Assessment</p>	<p>Competency may be assess through:</p> <ul style="list-style-type: none"> 5.1 Direct observation 5.2 Written test 5.3 Interview 5.4 Practical application
<p>6. Context for Assessment</p>	<ul style="list-style-type: none"> 6.1 Assessment of underpinning knowledge and underpinning skills may be combined 6.2 Competency elements must be assessed in a safe working environment 6.3 Assessment may be conducted in a workplace or simulated environment

UNIT OF COMPETENCY: **Apply quality standard**

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitude 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.

UNIT CODE: **742.7421.031.007.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

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

RANGE OF VARIABLES

VARIABLE	RANGE
1. Materials or component parts	<p>Materials and components include but not limited to:</p> <ul style="list-style-type: none"> 1.1 Woods 1.2 Spare parts of tools 1.3 Spare parts of equipment 1.4 Spart parts of machine 1.5 Accessories 1.6 Cutting blade 1.7 Stays 1.8 Lock and catch
2. Faults	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 2.1 Components and materials not according to specification 2.2 Components and materials containing manufacturing defects 2.3 Components and materials do not conform with government regulation i.e., Lao electrical code, environmental code 2.4 Components and materials have safety defect
3. Documentation	<ul style="list-style-type: none"> 3.1 Organization work procedures 3.2 Manufacturer's instruction manual 3.3 Customer requirements 3.4 Forms
4. Quality standards	<p>Quality standards may relate but not limited to the following:</p> <ul style="list-style-type: none"> 4.1 Materials 4.2 Component parts 4.3 Final product 4.4 Production processes
5. Customer	<ul style="list-style-type: none"> 5.1 Co-worker 5.2 Supplier 5.3 Client 5.4 Organization receiving the product or service

EVIDENCE GUIDE

<p>1. Critical aspects of competency</p>	<p>Assessment requires evidence that the candidate:</p> <p>1.1 Carried out work in accordance with the company's standard operating procedures</p> <p>1.2 Performed task according to specifications</p> <p>1.3 Reported defects detected in accordance with standard operating procedures</p> <p>1.4 Carried out work in accordance with the process improvement procedures</p>
<p>2. Underpinning Knowledge and Attitude</p>	<p>2.1 Relevant production processes, materials and products</p> <p>2.2 Characteristics of materials/component parts used in electronic production processes</p> <p>2.3 Quality checking procedures</p> <p>2.4 Workplace procedures</p> <p>2.5 Safety and environmental aspects of production processes</p> <p>2.6 Fault identification and reporting</p> <p>2.7 Quality improvement process</p>
<p>3. Underpinning Skills</p>	<p>3.1 Reading skills required to interpret work instruction</p> <p>3.2 Communication skills needed to interpret and apply defined work procedures</p> <p>3.3 Carry out work in accordance with OHS policies and procedures</p>
<p>4. Resource Implications</p>	<p>The assessor may select two (2) of the following assessment methods to objectively assess the candidate:</p> <p>4.1 Observation</p> <p>4.2 Questioning</p> <p>4.3 Practical demonstration</p>
<p>5. Method of Assessment</p>	<p>5.1 Materials and component parts and equipment to be used in a real or simulated production situation</p>
<p>6. Context for Assessment</p>	<p>6.1 Assessment may be conducted in the workplace or in a simulated environment</p>

CORE COMPETENCIES

UNIT OF COMPETENCY: **Prepare surface for coating**

UNIT DESCIRPTOR: This unit covers the knowledge, skills and attitude required to prepare surface for final coating.

UNIT CODE: **742.7421.031.008.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Prepare materials, tools and equipment	<p>1.1 Occupational safety and health requirements are complied with.</p> <p>1.2 Personal protective equipment are selected and used following occupational health and safety requirements</p> <p>1.3 Work instruction is secured from appropriate personnel following company rules and regulations.</p> <p>1.4 Materials, tools and equipment are prepared following job specifications and manufacturer’s recommendations</p>
2. Prepare surface	<p>2.1 Surface preparation procedure is performed following job requirements</p> <p>2.2 Prepared items are stacked following company standard operating procedure</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	<p>May include but not limited to</p> <p>1.1 Availability of dust collector</p> <p>1.2 Availability of dust masks</p>
2. Personal protective equipment	<p>May include but not limited to:</p> <p>2.1 Dust masks</p> <p>2.2 Gloves</p> <p>2.3 Apron</p> <p>2.4 Safety goggles</p> <p>2.5 Safety shoes</p>
3. Work instruction	<p>3.1 Verbal</p> <p>3.2 Written</p>
4. Materials, tools and equipment	<p>May include but not limited to:</p> <p>4.1 Materials</p> <p style="padding-left: 20px;">4.1.1 Sand paper</p> <p style="padding-left: 20px;">4.1.2 Putty</p> <p style="padding-left: 20px;">4.1.3 Paint remover</p> <p style="padding-left: 20px;">4.1.4 Filler</p> <p style="padding-left: 20px;">4.1.5 Glaze</p> <p style="padding-left: 20px;">4.1.6 Stain</p> <p>4.2 Tool</p> <p style="padding-left: 20px;">4.2.1 Pallet knife</p> <p style="padding-left: 20px;">4.2.2 Sanding block</p> <p style="padding-left: 20px;">4.2.3 Brushes</p> <p style="padding-left: 20px;">4.2.4 Rags</p> <p style="padding-left: 20px;">4.2.5 Steel wool</p> <p>4.3 Equipment</p> <p style="padding-left: 20px;">4.3.1 Portable sander</p> <p style="padding-left: 20px;">4.3.2 Working table</p>

<p>5. Surface preparation procedure</p>	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 5.1 Sanding, sealing and base coating 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
<p>6. Prepared items</p>	<ul style="list-style-type: none"> 6.1 Furniture parts 6.2 Semi-assembled parts 6.3 Full-assembled furniture 6.4 Fittings

EVIDENCE GUIDE

<p>1. Critical Aspects of Competency</p>	<p>Assessment requires evidence that the candidate:</p> <ul style="list-style-type: none"> 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
<p>2. Underpinning Knowledge and Attitudes</p>	<ul style="list-style-type: none"> 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
<p>3. Underpinning Skills</p>	<ul style="list-style-type: none"> 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
<p>4. Resource Implications</p>	<p>The following resources must be provided</p> <ul style="list-style-type: none"> 4.1 Materials, tools and equipment relevant to the activity 4.2 PPE 4.3 Job specifications
<p>5. Methods of Assessment</p>	<p>Competency maybe assessed using the following methods</p> <ul style="list-style-type: none"> 5.1 Observation of practical skills 5.2 Oral questioning
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Competency in this unit maybe assessed in the workplace or in a simulated environment.

UNIT OF COMPETENCY: **Use Spray Gun system and hand tools**

UNIT DESCRIPTOR: This unit covers the knowledge, skills and attitudes on the safe use, handling and maintenance of tools.

UNIT CODE: **742.7421.031.009.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Prepare for tasks to be undertaken	1.1 Tasks to be undertaken are properly identified 1.2 Appropriate hand tools are identified and selected according to the task requirements
2. Prepare Spray Gun system and hand tools	1.1 Function and parts of Spray Gun is checked for proper operation 1.2 Appropriate hand tools are checked for proper operation and safety 1.3 Unsafe or faulty tools are identified and marked for repair according to standard company procedure
3. Use spray gun, hand tools and test equipment	1.1 Spray Gun and hand tools are used according to tasks undertaken 1.2 All safety procedures in using Spray Gun and hand tools are followed at all times and appropriate Personal Protective Equipment (PPE) are used 1.3 Malfunctions, unplanned or unusual events are reported to the supervisor
4. Maintain Spray Gun system and hand tools	1.1 Spray Gun and hand tools are not dropped to avoid damage 1.2 Routine maintenance of tools undertaken according to standard operational procedures, principles and techniques 1.3 Spray gun and tools are stored safely in accordance with manufacturer's specifications or standard operating procedures

RANGE OF VARIABLES

VARIABLE	RANGE
1. Parts of Spray Gun	1.1 Spreader Adjustment Valve 1.2 Air Valve 1.3 Air Cap 1.4 Needle Packing 1.5 Fluid Adjustment Screw 1.6 Fluid Tip 1.7 Fluid Needle
2. Hand tools	2.1 Hand tools for adjusting, dismantling, assembling, finishing and cutting. 2.2 Tool set includes the following but not limited to: 2.2.1 Screw drivers 2.2.2 Pliers 2.2.3 Adjustable Wrench 2.2.4 Allen Wrench
3. Personal Protective Equipment (PPE)	3.1 Gloves 3.2 Protective eyewear 3.3 Apron 3.4 Protective mask
4. Routine maintenance	4.1 Maintenance Activity 4.1.1 Cleaning 4.1.2 Lubricating 4.1.3 Tightening 4.1.4 Simple tool repairs 4.1.5 Hand sharpening 4.2 Maintenance Schedule 4.2.1 Daily 4.2.2 Weekly 4.2.3 Monthly 4.2.4 Quarterly

EVIDENCE GUIDE

<p>1. Critical aspect of competency</p>	<p>Assessment must show that the candidate:</p> <ul style="list-style-type: none"> 1.1 Applied safety procedures in using Spray Gun system and hand tools 1.2 Ability to use and operate Spray Gun system as specified by the job 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
<p>2. Underpinning knowledge and Attitudes</p>	<ul style="list-style-type: none"> 2.1 Ability to identify parts of the Spray Gun and hand tools and detect defective parts 2.2 Safety requirements in handling tools 2.3 Identify types of hand tools 2.4 Function, Operation, Common faults 2.5 Processes, Operations, Systems 2.6 Maintenance of tools 2.7 Storage of Tools
<p>3. Underpinning skills</p>	<ul style="list-style-type: none"> 3.1 Skills in the use and operation of Spray Gun system and hand tools 3.2 Reading skills required to interpret work instruction and numerical skills 3.3 Communication skills 3.4 Problem solving in emergency situation
<p>4. Method of assessment</p>	<p>Competency in this unit must be assessed through:</p> <ul style="list-style-type: none"> 4.1 Observation 4.2 Oral questioning
<p>5. Resource Implication</p>	<p>Tools may include the following but not limited to:</p> <ul style="list-style-type: none"> 5.1 Screw drivers 5.2 Pliers 5.3 Punches 5.4 Wrenches, files
<p>6. Context of Assessment</p>	<ul style="list-style-type: none"> 6.1 Assessment may be conducted in the workplace or in a simulated environment

UNIT OF COMPETENCY: **Apply surface coating using spray gun system**

UNITDESCIRPTOR: This unit covers the knowledge, skills and attitude required to apply surface coating using spray gun system.

UNIT CODE: **742.7421.031.010.01.01**

ELEMENTS AND PERFORMANCE CRITERIA

ELEMENT	PERFORMANCE CRITERIA
1. Prepare materials, tools and equipment	<p>1.1 Occupational safety and health requirements are complied with.</p> <p>1.2 Personal protective equipment are selected and used following occupational health and safety requirements</p> <p>1.3 Work instruction is secured from appropriate personnel following company rules and regulations.</p> <p>1.4 Materials, tools and equipment are prepared following job specifications and manufacturer's recommendations.</p>
2. Mix coating colors	<p>2.1 Coating materials are mixed together in accordance with paint, coating and safety specifications</p> <p>2.2 Color is tested in conformance with the specified coating color of the surface</p> <p>2.3 Safety in using and working with highly flammable materials is observed during mixture process</p> <p>2.4 Final color and quality of material are inspected and approved by superior for surface coating</p>
3. Perform testing and pre-coating	<p>3.1 Function and operation of Spray Gun is tested according to job and safety procedures</p> <p>3.2 Function of air-compressor and pressure system is checked and tested according to safety procedures</p> <p>3.3 Coating procedures is practiced prior to actual spraying of coating</p>
4. Apply surface coating	<p>4.1 Tools and equipment are tested to conform with job specifications.</p> <p>4.2 Spray gun system is activated according to manufacturer's recommendations.</p> <p>4.3 Finished items are moved following safe handling procedure.</p>
5. Perform good housekeeping	<p>5.1 Put away procedure is performed following company regulations</p> <p>5.2 Completion report is prepared and submitted to appropriate personnel following company standard operating procedure (SOP).</p> <p>5.3 Work area is cleaned following company SOP.</p>

RANGE OF VARIABLES

VARIABLE	RANGE
1. Occupational safety and health requirements	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 1.1 Spray booth is working properly 1.2 Appropriate breathing apparatus or mask 1.3 Appropriate gloves
2. Personal protective equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 2.1 Mask and breathing apparatus 2.2 Apron 2.3 Safety shoes 2.4 Gloves 2.5 Goggles
3. Work instruction	<ul style="list-style-type: none"> 3.1 Verbal 3.2 Written 3.3 Actual sample
4. Personnel	<ul style="list-style-type: none"> 4.1 Finishing Supervisor 4.2 Production Manager 4.3 Company Owner
5. Materials, tools and equipment	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 5.1 Materials <ul style="list-style-type: none"> 5.1.1 Paints 5.1.2 Thinner 5.1.3 Color stains 5.1.4 Sealers 5.1.5 Varnish 5.2 Tools <ul style="list-style-type: none"> 5.2.1 Spray gun 5.2.2 Viscosity cup 5.2.3 Wet and dry thermometer 5.2.4 Wrenches 5.2.5 Cleaning brushes 5.3 Equipment <ul style="list-style-type: none"> 5.3.1 Spray booth 5.3.2 Air compressors 5.3.3 Regulator and filter

6. Job specifications	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 6.1 Coating type <ul style="list-style-type: none"> 6.1.1 Base coat 6.1.2 In-between coat 6.1.3 Final or top coat
7. Spray gun system	<ul style="list-style-type: none"> 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	<p>May include but not limited to:</p> <ul style="list-style-type: none"> 8.1 Furniture parts 8.2 Semi-assembled parts 8.3 Full-assembled furniture 8.4 Fittings <ul style="list-style-type: none"> 8.4.1 Handles 8.4.2 Hinges
9. Safe handling procedure	<p>May include but not limited to the use of:</p> <ul style="list-style-type: none"> 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> <p>1.1 Demonstrates ability to comply with occupational health and safety requirements</p> <p>1.2 Demonstrates ability to prepare materials, tools and equipment following manufacturer's recommendations and job specifications</p> <p>1.3 Demonstrates ability to apply surface coating following the specified volume per surface area</p> <p>1.4 Demonstrates ability to perform good housekeeping</p>
<p>2. Underpinning Knowledge and Attitudes</p>	<p>2.1 Occupational safety and health standards</p> <p>2.2 Coating materials, tools and equipment types and uses</p> <p>2.3 Interpret manufacturer's recommendations</p> <p>2.4 Work piece standard requirements</p> <p>2.5 Follow good housekeeping</p> <p>2.6 Trade Mathematics</p>
<p>3. Underpinning Skills</p>	<p>3.1 Complying with occupational safety and health standards</p> <p>3.2 Using coating materials, tools and equipment</p> <p>3.3 Interpreting and following manufacturer's recommendations</p> <p>3.4 Following work piece standard requirements</p> <p>3.5 Performing good housekeeping</p> <p>3.6 Applying Trade Mathematics</p>
<p>4. Resource Implications</p>	<p>The following resources must be provided</p> <p>4.1 Tools, equipment and materials relevant to the activity</p> <p>4.2 Workplace</p> <p>4.3 PPE</p>
<p>5. Methods of Assessment</p>	<p>Competency maybe assessed using the following methods</p> <p>5.1 Observation of practical skills</p> <p>5.2 Oral questioning</p> <p>5.3 Written test</p>
<p>6. Context of Assessment</p>	<p>6.1 Competency in this unit maybe assessed in the workplace or in a simulated environment.</p>

CURRICULUM DESIGN

FURNITURE FINISHER (SPRAYING) – LEVEL III

BASIC COMPETENCIES

UNIT OF COMPETENCY	LEARNING OUTCOME	METHODOLOGY	ASSESSMENT
1. Participate in workplace communication	1.1 Obtain and convey workplace information 1.2 Participate in workplace meetings and discussions 1.3 Complete relevant work related documents	<ul style="list-style-type: none"> • Lecture • Discussion • Role playing 	<ul style="list-style-type: none"> • Observation • Oral questioning • Interview • Demonstration
2. Use Mathematical concepts and techniques	2.1 Identify mathematical tools and techniques to solve problem 2.2 Apply mathematical procedure/solution 2.3 Analyze results	<ul style="list-style-type: none"> • Lecture • Discussion • Self-paced learning • Case study 	<ul style="list-style-type: none"> • Oral questioning • Written test
3. Work in team environment	3.1 Describe team role and scope 3.2 Identify own role and responsibility within team 3.3 Work as a team member	<ul style="list-style-type: none"> • Lecture • Discussion • Role playing • Case study 	<ul style="list-style-type: none"> • Oral questioning • Demonstration • Observation
4. Apply gender and social equity principles and policies	4.1 Follow guidelines or rules of conduct related to gender and social equity in the workplace 4.2 Contribute to improve workplace guidelines in promoting gender and social equity 4.3 Recognize and report suspected cases of gender and other forms of social inequity	<ul style="list-style-type: none"> • Lecture • Discussion • Role playing • Case study 	<ul style="list-style-type: none"> • Oral questioning • Demonstration • Observation

COMMON COMPETENCIES

UNIT OF COMPETENCY	LEARNING OUTCOME	METHODOLOGY	ASSESSMENT
1. Interpret technical drawings and plans	1.1 Analyze signs, symbols and data 1.2 Interpret technical drawings and plans 1.3 Apply freehand sketching	<ul style="list-style-type: none"> • Discussion • Practical exercises 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written test
2. Perform measurement and calculation	2.1 Select measuring instruments 2.2 Carry out measurements and calculation 2.3 Maintain measuring instrument	<ul style="list-style-type: none"> • Discussion • Practical exercises 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written test
3. Apply quality standards	3.1 Assess quality of received materials or components 3.2 Assess own work 3.3 Engage in quality improvement	<ul style="list-style-type: none"> • Discussion • Practical exercises 	<ul style="list-style-type: none"> • Direct observation • Oral questioning • Written test

CORE COMPETENCIES

UNIT OF COMPETENCY	LEARNING OUTCOME	METHODOLOGY	ASSESSMENT
1. Prepare surface for coating	1.1 Prepare tools, materials and equipment 1.2 Prepare surface 1.3 Perform good housekeeping	<ul style="list-style-type: none"> • Discussion • Self-paced instruction • Practical exercises 	<ul style="list-style-type: none"> • Observation • Questioning • Written test
2. Use Spray gun system and hand tools	2.1 Prepare for the task to be undertaken 2.2 Prepare spray gun system hand tools 2.3 Use spray gun handtools and equipment 2.4 Maintain spray gun system hand tools	<ul style="list-style-type: none"> • Discussion • Practical exercises 	<ul style="list-style-type: none"> • Observation • Oral questioning • Written test
3. Apply surface coating using spray gun system	3.1 Prepare tools, materials and equipment 3.2 Mix coating colors 3.3 Perform testing and pre-coating 3.4 Apply surface coating 3.5 Perform good housekeeping	<ul style="list-style-type: none"> • Discussion • Self-paced instruction • Practical exercises 	<ul style="list-style-type: none"> • Observation • Questioning • Written test

RELATED INFORMATION

Curriculum Design

The Competency – Based Curriculum is developed and used for the delivery of the LQ training programs. The curriculum design provides TVET trainers and training providers with important information in order to achieve the unit of competencies for the qualification. This information provides guidelines and requirements such as training duration for each unit of competency, technical facility, training tools and equipment, training methodology, assessment methods and other resources.

Technical Facility

The technical facility for conducting competency-based training for TVET and industry trainers must include among others the following areas: practical work area, learning resource center, training resource and production area, assessment area, quality control and support area. The technical facility should conform to training standards and requirements set by the Authority.

At the minimum, a technical facility has provisions for lecture room and workshop area, learning resource area, audio – visual room, multimedia and computer laboratory and meets the minimum requirement for workshop or production area.

Institutional Assessment

The training institution conducting the competency-based training should conduct a competency-based assessment to trainees that completed the training to determine the achievement of each unit of competency. The institutional assessment is conducted prior to the assessment for national certification. It follows the assessment guidelines established by the Authority. A certificate or diploma is issued by the institution to trainees who were able to pass the assessment.

National Assessment and Certification

Trainees who completed the competency-based training are candidates for the national assessment and certification. They must demonstrate competence in all the units of competency of the Trainer Qualification Level they have undertaken. Successful candidates shall be awarded a National Certification on Trainer Qualification by the issuing Authority.

GLOSSARY OF COMPETENCY STANDARD TERMS

Assessment and Certification	<i>A national system of assessment and certification established and administered by the Technical – Vocational Education and Training Authority. It consists of assessing and certifying the competency level of a person in terms of knowledge, skills and attitude based on standards set by business and industries. A National Certification in a level of professional recognition is awarded to a person that successfully passed the assessment.</i>
Authority	<i>Refers to the governing body upon which the national vocational qualification framework for competency standard, assessment and certification, awarding of national certification is vested, i.e. Ministry of Education and Sports, Technical and Vocational Education Department, National Training Council.</i>
Basic Competency	<i>Are work competencies that are classified as non-technical skills but are very necessary in the successful performance of any work since they are manifested by core behaviors and abilities that determine the effective and efficient outcome of work. These competencies forms part of the competency standards and their degree of application could vary depending on the work role.</i>
Competency	<i>The possession and application of the cluster of skills, knowledge and attitude required in the performance of a job in accordance to set industry standards.</i>
Competency Standard	<i>Is a written specification of performance determined by industry which identify the skills, knowledge and attitudes essential for the successful the performance of the job.</i>
Competency Training Program	<i>An approved technical – vocational education and training course or program for a particular job occupation. It is based on a competency standard in line with the national qualification framework. It follows a training delivery scheme that aims to achieve the level of competency after the training.</i>
Core Competency	<i>Is the core technical knowledge, skills and attitude that a person must possess in order to perform a job effectively with respect to expected outcome at an acceptable time and degree of quality. Core competencies are described and linked to industry-based competency standards and they play a different role in the overall way a person applies their skills and knowledge in work or other roles.</i>
E – Learning	<i>An education and training modality delivered mainly through electronic learning (e-Learning). A broad combination of processes, content, and infrastructure to use computers and networks to scale and/or improve one or more significant parts of a learning value chain, including management and delivery.⁵</i>
Elements of Competency	<i>Are building blocks of a unit of competency which describes the key aspects of the job that a person must be able to do relative to his job role and function.</i>

⁵ Clark Adrich, 2004

Evidence Guide	<i>Is a part in the competency standard that specifies the required evidence of competency including the critical aspects of competency and the standards to be observed. The underpinning knowledge and skills, context of assessment, methods of assessment, and resource implication are likewise stated. The focus of assessment to which the assessor will use in evaluating the possession of competencies is the Evidence Guide.</i>
Institutional Assessment	<i>An assessment conducted by the training provider or training institution right after the competency – based training. The institutional assessment is conducted prior to the assessment for national certification. It follows the assessment guidelines established by the Authority. A certificate or diploma is issued by the institution to trainees who were able to pass the assessment.</i>
National Certificate or Certification	<i>A document issued by the Authority to an individual who have demonstrated successfully all the required units of competencies for a given qualification. Said document certifies that an individual is competent to perform a specific qualification.</i>
Performance Criteria	<i>Is a specification of the level or quality of performance. It is also an indication of the quality of the critical evidence required to meet the outcomes in the elements and linked to assessment.</i> <i>The Performance Criteria is further elaborated with Range of Variables that specifies the coverage of application and conditions to which the criteria will be used. The Range of Variables is written in Italic words in the Performance Criteria.</i>
Qualifications	<i>Are clusters of significant units of competencies that meet job performance expected by the employer. It is also a certification awarded to an individual who have successfully demonstrated his/her competence in a particular cluster of units of competencies. Qualifications represent the results of learning, regardless of whether learning has been in formal or informal contexts. The qualification level is distinguished according to its alignment with the levels of certification.</i>
Qualification Levels	<i>Are different levels of job qualifications in competency – based training, assessment and certification. The qualification level is based on a national qualification framework that determines the qualification of a person seeking skills recognition in a particular trade or job.</i>
Range of Variables	<i>Are the specific range of applications and conditions to which the performance criteria are applied.</i>

Technical Facility	<i>The technical facility is the venue for conducting competency-based training for TVET. It includes among others practical work area, learning resource center, training resource and production area, assessment area, quality control and support area.</i>
Technical – Vocational Education and Training	<i>Any technical – vocational program or activity oriented towards skill proficiency leading to a certificate or diploma in preparation for a particular occupation. Short-term programs of instruction including the acquisition of technical knowledge and skills lasting less than a school year are generally considered as technical-vocational educational activities irrespective of the training provider in which such programs are offered.</i>
Unit of Competency	<i>The building block of the competency standard specifying the elements, performance criteria, range of variable, evidence guide, resources and methods of assessment. The competency unit can logically stand alone when applied in a work situation.</i>
Unit Descriptor	<i>Describes in broad terms the coverage of unit of competency. It is an expansion of the Unit title which states the general application of skills and knowledge.</i>
Unit Code	<i>Represents the unit of competency in alpha-numeric form from amongst the different unit of competencies of the trade or occupational areas. The unit code represents the competency standard, occupational area, qualification and competency level and the competency number.</i>

GLOSSARY OF WOOD WORKING TERMS

<http://www.ewpdoors.com/glossary.htm>

Air-dried lumber	<i>Lumber that was dried, usually outside, to an equilibrium moisture content with the air it was exposed to.</i>
Alternate top bevel with raker (ATB/R)	<i>A design for a circular saw blade where four alternately beveled teeth are followed by a raker too to remove debris from the cut.</i>
Annual growth rings	<i>The layer of growth that a tree puts on in one year. The annual growth rings can be seen in the end grain of lumber.</i>
Arbor	<i>A shaft, driven by the tool's motor that turns blades or other cutting tools.</i>
Back saw	<i>A short rectangular saw with fine teeth and a rigid "spine" along the top of the blade. A backsaw is used for fine joinery work such as cutting dovetail joints.</i>
Bark	<i>The outermost, protective layer, of a tree composed of dead cork and other elements.</i>
Bead	<i>A small rounded, raised profile, routed along the edge of a board.</i>
Bench Dog	<i>A metal or wooden peg that fits into a hole in a workbench and is used to hold a workpiece in place. The peg can be round or square and sometimes fitted with special springs to hold them in place.</i>
Bevel cut	<i>An angled cut through a board.</i>
Birds-eye figure	<i>A figure on wood, usually maple and a few other species. The figure is composed of many small BB size rounded areas resembling a birds eye. The figuring is most common on plain and rotary sawn lumber.</i>
Biscuit Joint	<i>A butt joint that is reinforced with a football shaped "biscuit". The biscuits are usually made from compressed pieces of wood, usually birch. When a biscuit comes into contact with glue in the joint it swells creating a tighter joint. Also called a Plate Joint.</i>
Board Foot	<i>A form of wood measurement, where one board foot equals the volume of a board 1 inch thick, 12 inches wide, and 12 inches long, or 144 square inches.</i>
Bookmatch	<i>A term in veneering, where successive pieces of veneer from a flitch are arranged side by side. A properly done bookmatch will resemble a mirror image of the opposite side.</i>
Bore	<i>The hole for the arbor in a circular saw blade.</i>
Bow	<i>A defective piece of lumber that has warped along its length.</i>
Box joint	<i>A corner joint made up of interlocking "fingers".</i>
Brad	<i>A small finishing nail up to 1" long.</i>

Burl	<i>Bulges and irregular growths that form on the trunks and roots of trees. Burls are highly sought after for the incredible veneer they yield.</i>
Burr	<i>A raised ridge of metal used on a scraper to remove wood.</i>
Butt Joint	<i>A woodworking joint where the edges of two boards are placed against each other.</i>
Cabriole Leg	<i>A leg used on furniture. The cabriole leg is characterized by graceful curves and a shape that resembles an animal leg.</i>
Cambium	<i>The live, actively growing, layer of a tree. The cambium is one cell thick and resides between the sapwood and the phloem. It repeatedly divides itself to form new wood and causes the tree to grow and expand.</i>
Chamfer	<i>A beveled cut along the edge of a piece of furniture. (Usually 45 degrees)</i>
Carcase	<i>The body of a piece of furniture with a box like shape. (i.e. a kitchen cabinet)</i>
Case Hardening	<i>A defect in the lumber caused by improper drying. Case Hardening is caused when a board is dried too fast. The outer layers in a case hardened board are compressed while the inner layers are in tension.</i>
Cell	<i>The smallest, microscopic, structure in wood.</i>
Check	<i>A lumber defect caused by uneven shrinking of the wood during drying. A checked board has splits which develop lengthwise across the growth rings.</i>
Clear	<i>A board which is free of defects.</i>
Closed Coat	<i>A piece of sandpaper with a surface completely covered with abrasive particles. This type of paper tends to clog easily with sawdust and is generally not used for woodworking.</i>
Collet	<i>In a router, the sleeve that grips the shank of a bit.</i>
Common Grade Lumber	<i>Lumber with obvious defects.</i>
Compound Cut	<i>An angled cut to both the edge and face of a board.</i>
Concave	<i>An inward-curving shape. (i.e. a spoon)</i>
Convex	<i>An outward-curving shape. (i.e. my belly :-)</i>
Cope-and-stick joint	<i>A method of construction raised panel doors where the tongues of the rails (horizontal) connect to the grooves of the stiles (vertical).</i>
Countersink	<i>A tool that allows you to drill a hole so that the head of a screw will sit flush with the face of a board.</i>
Crook	<i>A lumber defect where there is an edgewise warp effecting the straightness of the board.</i>

Crosscut (crosscutting)	<i>A cut made perpendicular to the grain of a board.</i>
Crotch	<i>In lumber, a piece of wood taken from the fork of a tree. Crotch Veneer is highly valued for its figuring.</i>
Cup	<i>A defect in the lumber where the face of the board warps up like the letter U.</i>
Dado	<i>A rectangular channel cut partway into a board.</i>
Deciduous	<i>Trees that shed their foliage annually. Commonly referred to as hardwood.</i>
Defect	<i>An abnormality in a piece of lumber that lowers its strength and commercial value such as a check or knot.</i>
Deflection	<i>The amount of sag in a shelf, floor, joist, or counter caused by the weight it's supporting.</i>
Dado	<i>A rectangular channel cut partway into a board.</i>
Deciduous	<i>Trees that shed their foliage annually. Commonly referred to as hardwood.</i>
Defect	<i>An abnormality in a piece of lumber that lowers its strength and commercial value such as a check or knot.</i>
Deflection	<i>The amount of sag in a shelf, floor, joist, or counter caused by the weight it's supporting.</i>
Dovetail Joint	<i>A method of joining wood at corners by the use of interlocking pins and tails.</i>
Dowel	<i>A cylindrical wooden pin that is used to reinforce a wood joint.</i>
Dowel Center	<i>A cylindrical metal pin with a raised point that is inserted into a dowel hole and used to locate the exact center on a mating piece of wood.</i>
Dozuki	<i>A type of Japanese woodworking saw that is used for fine joinery work such as dovetails. Its Western equivalent is a back saw.</i>
Drawer Stop	<i>A device installed in a cabinet to limit the drawers travel.</i>
Dressing	<i>Shaping the cutting edge of a chisel to correct the bevel.</i>
Edge guide	<i>A straightedge that is used to guide tools, such as a circular saw or router, along a workpiece.</i>
Edge joining	<i>Smoothing and squaring the edge of a board so that it can be glued up squarely to another piece.</i>
Equilibrium moisture content	<i>When the level of moisture in a board is equal to the moisture in the surrounding air.</i>
Face Veneer	<i>High quality veneer that is used for the exposed surfaces on plywood.</i>

Featherboard	<i>A piece of wood with thin "fingers" that hold a board against a fence or down against the table of a power tool, usually a table saw or router.</i>
Fence	<i>A straight guide used to keep a board a set distance from a blade or other cutters.</i>
Flat-sawn Lumber	<i>In softwoods, a method of sawing lumber where the log is cut tangential to the growth rings. Also called plain sawm.</i>
Free Water	<i>Moisture found in the cell cavities of wood.</i>
Girth	<i>The distance around a tree; the circumference.</i>
Glue Joint	<i>A special interlocking grooved pattern that is used to join two pieces, edge to edge, securely.</i>
Grain	<i>The size, alignment, and color of wood fibers in a piece of lumber.</i>
Green Lumber	<i>Freshly cut lumber that has not had time to dry.</i>
Half-blind dovetail	<i>A dovetail joint where the cut does not go all of the way through the board. The ends of a half-blind dovetail are concealed. (see through dovetail joint)</i>
Hardboard	<i>A type of manufactured board similar to particle board but with a much smoother surface. A common brand of hardboard is Masonite.</i>
Heartwood	<i>The dead inner core of a tree. Usually much harder and darker than the newer wood. Also see sapwood.</i>
Herringbone Pattern	<i>In veneering, a hearing bone pattern is formed when successive layers of veneers are glued up so they form a mirror image. Usually this pattern slants upwards and outwards, like a herringbone.</i>
Infeed	<i>The direction a workpiece is fed into a blade or cutter.</i>
Jig	<i>A device used to make special cuts, guide a tool, or aid in woodworking operations.</i>
Kickback	<i>When a workpiece is thrown back, in the opposite direction the cutter is turning.</i>
Kiln	<i>In lumber drying, a kiln is a room or building where temperature, moisture, and the amount of air circulating are controlled to dry wood.</i>
Kiln Dried	<i>Lumber that has been dried in a Kiln. (See Kiln)</i>
Knot	<i>A part of the tree where a branch has been overgrown by the tree and incorporated into its trunk.</i>
Laminate	<i>A thin plastic materiel used to cover a board. The most common use of laminate is for counter and table tops. It is often referred to by the brand name Formica.</i>

Latewood	<i>The part of a trees annual growth ring that is formed later in the season.</i>
Linear Foot	<i>A measurement of the length of a board.</i>
Lumber	<i>Logs which have been sawn, planed, and cut to length.</i>
Lumber-Core Plywood	<i>Plywood where thin sheets of veneer are glued to a core of narrow boards. Lumber-core plywood differs from regular plywood in that regular plywood is made up of successive layers of alternating grain veneer.</i>
Lumber ruler	<i>A tool resembling a ruler with a handle at one end and a hood at the other which is used to calculate the board footage of a piece of lumber.</i>
Medium density fiberboard (MDF)	<i>A special type of tempered hardboard characterized by a very fine, smooth finish. MDF is used in cabinet making.</i>
Miter-and-spline joint	<i>A joint with two mitered surfaces connected by a spline. (see spline)</i>
Miter gauge	<i>A tool that slides in a slot on a power tool such as a table saw, router table, bandsaw, etc. A miter gauge can be adjusted to different angles and is used to slide the stock past the blade.</i>
Moisture Content	<i>A measure of the amount of water in a piece of lumber.</i>
Mortise	<i>A rectangular hole cut into a piece of wood to accept a tenon. (see tenon)</i>
Mortise and Tenon joint	<i>A joinery technique where the tenon from one board fits into the mortise of another.</i>
Nominal Size	<i>The rough-sawn size of a piece of lumber. When purchasing planed lumber it is sold by its nominal, rough-sawn, size. For example a 2"x4" is the nominal size for a board whose actual dimension is 1.4" x 3.25".</i>
Non-piloted bit	<i>A router bit without a guide bearing.</i>
Ogee	<i>A decorative molding profile with a S shape.</i>
Open Coat	<i>A piece of sandpaper with abrasive particles that are spread out to prevent clogging. See also - closed coat.</i>
Outfeed	<i>The side of a power tool where the board exits. (see infeed)</i>
Oven-dried weight	<i>The weight of a piece of lumber that has been dried, under high temperatures, in an oven until it is devoid of all water.</i>
Particleboard	<i>A type of manufactured plywood that is made from ground up and glued scrap wood. Particle board is very dense, heavy, and flat.</i>
Particleboard-core plywood	<i>Plywood that is made by gluing a thin layer of veneer to a piece of particleboard.</i>
Phloem	<i>The inner part of a tree's bark that delivers water and other nutrients.</i>

Photosynthesis	<i>A process that plants use to synthesize nutrients from water and minerals using sunlight.</i>
Phylum	<i>A class or group of plants. Phylum is a botanical term used by botanists to classify plants.</i>
Pilot Bit (Pilot Bearing) also Piloted Bit	<i>A router bit fitted with a bearing above the cutter which rides on the edge of a board or template keeping the bit a fixed distance from the edge</i>
Pin Router	<i>A router that is fixed above a table with its bit point down. A pin in the table is aligned with the bit and used to route the workpiece.</i>
Pitch Pocket -	<i>A pocket of resinous sap confined within the grain of many conifers.</i>
Pith -	<i>The soft core in the center of a tree trunk.</i>
Plain-Sawn Lumber	<i>A method of sawing lumber where the log is cut tangential to the growth rings. Also called flat sawn when referring to softwoods.</i>
Plate Joint	<i>A butt joint that is reinforced with a football shaped "biscuit". The biscuits are usually made from compressed pieces of wood, usually birch. When a biscuit comes into contact with glue in the joint it swells creating a tighter joint. Also called a Biscuit Joint.</i>
Plunge Router	<i>A router mounted on a spring loaded base. The router can be turned on and plunged down into the workpiece.</i>
Porous Wood	<i>Wood with larger than normal pores and vessels</i>
Pumice	<i>A fine abrasive powder that is made from volcanic ash. Pumice is used with a a felt block in woodworking to rub out (polish) a finish. (Pumice is also the gritty additive in Lava soap.)</i>
Push Stick	<i>A tool used to safely push a board through a table saw or other power tool.</i>
Quarter-sawn	<i>A method of cutting lumber where the annual rings are relatively perpendicular to the face of the board. Quarter-sawn lumber tends to be more dimensionally stable than other forms of lumber, such as plain sawn.</i>
Rabbet	<i>A cut partway through the edge of a board that is used as a part of a joint.</i>
Radial Shrinkage	<i>Shrinkage in a piece of lumber that occurs across the growth rings as it begins to dry.</i>
Rail	<i>(1) A horizontal board that runs along the underside of a table. (2) The horizontal part of a raised panel door.</i>
Raised Panel	<i>A piece of wood that is the center of a frame and panel assembly.</i>
Ray	<i>A ribbon like figure caused by the strands of cells which extend across the grain in quarter sawn lumber.</i>

Reaction Wood -	<i>Abnormal wood tissue that was formed in a leaning tree. Reaction wood is very unstable and prone to warping and cupping when sawn into lumber.</i>
Ripcut (Ripping)	<i>A cut made parallel to the grain of a board.</i>
Rotary-cut Veneer	<i>Veneer which was cut from a log in one long sheet. Rotary cut veneer is cut from a log like a roll of paper towels.</i>
Rub Bearing	<i>A ball bearing rub collar near the top or bottom of a spindle shaper that is used to keep the workpiece a fixed distance away from the cutters.</i>
Rule Joint	<i>A joinery method used in drop leaf tables where the tabletop has a convex profile and the leaf has a concave cut. The two pieces are joined by a hinge.</i>
Runout	<i>The amount of wobble in a shaper or router.</i>
Sap -	<i>The water in a tree which is rich in minerals and nutrients.</i>
Sapwood	<i>The new wood in a tree that lies between the bark and the Heartwood. Sapwood is usually lighter in color and becomes heartwood as the tree ages.</i>
Scarf Joint	<i>A woodworking joint that is made by cutting or notching two boards at an angle and then strapping, gluing, or bolting them together.</i>
Seasoning	<i>The process of removing the moisture from green wood to improve its workability and stability.</i>
Selects	<i>In softwood, lumber which has been graded strictly for its appearance. In hardwood, lumber which is one grade below first and second.</i>
Sliding Dovetail Joints	<i>A sliding dovetail joint is similar to a tongue and groove joint except the tongue and groove are matching dovetails.</i>
Softwoods	<i>Generally lumber from a conifer such as pine or cedar. The name softwood does not refer to the density of the wood. There are some hardwoods, such as Balsa, which are softer than some softwoods, like Southern Yellow Pine.</i>
Sound	<i>A term referring to a board which has no or very few defects which will effect its strength</i>
Specific Gravity	<i>The ratio of the weight of wood to an equal volume of water. The higher the specific gravity, the heavier the wood.</i>
Spermatophyte	<i>Plants that reproduce by seeds. This includes almost all plant species.</i>
Spindle	<i>The threaded arbor on a shaper that holds the cutters.</i>
Spline	<i>A thin piece of wood that fits in the mating grooves cut into two pieces of wood.</i>
Squeeze-out	<i>A bead or drops of glue that are forced out of a joint when pressure is applied.</i>

Stain	<i>1) A discoloration in wood caused by a fungus or chemicals; 2) A dye or pigment used to color wood.</i>
Sticker	<i>A thin wood strip that is inserted between stacks of green wood to allow air to flow through the stack to ensure proper drying.</i>
Stile	<i>The vertical part of a raised panel door.</i>
Surfaced Lumber	<i>A piece of wood that has been planed smooth on one or more surfaces.</i>
Surfacing	<i>The way a piece of lumber has been prepared at the lumber mill.</i>
Tack Time	<i>The amount of time it takes for an adhesive to set-up before it can form a bond.</i>
Taper	<i>A piece of wood that has been cut so that it is wider on one edge than the other.</i>
Tearout	<i>The tendency for a blade to splinter the last part of a piece of wood during crosscutting.</i>
Tempered Hardboard	<i>Dense fiberboard that has been specially treated to increase its durability, strength, density, and moisture resistance.</i>
Template	<i>A pattern. Often a template is made of hardboard and used with a pilot bit to route a shape in a board.</i>
Template guide	<i>A jig mounted to the bottom of a router that is used to keep the router on the profile of a template when routing with a non-pilot bearing bit.</i>
Tenon	<i>A protrusion from a board that fits into a matching mortise to form a joint.</i>
Through Dovetail Joint	<i>A method of joining wood where the interlocking pins and tails of the dovetail joint go through the side of its mating piece.</i>
Tongue and Groove	<i>A joinery method where one board is cut with a protruding "groove" and a matching piece is cut with a matching groove along its edge.</i>
Torque	<i>The amount of force that is needed to turn an object such as a screw or bolt.</i>
Twist	<i>Warping in lumber where the ends twist in opposite directions. (Like twisting a towel)</i>
Underlayment	<i>A layer of plywood or other manufactured board used as a base material under finished flooring. Underlayment is often used as a substrate to increase the strength and/or smoothness of the flooring.</i>
Veneer	<i>A thin sheet of wood cut from a log.</i>
Veneer-core Plywood	<i>Plywood made from three or more pieces of veneer glued up in alternating grain patterns.</i>

Warp

A defect in lumber characterized by a bending in one or more directions.

Wormholes

Holes and channels cut in wood by insects.

UNDERSTANDING THE CODES IN THE MODULAR TRAINING PACKAGE

Each Learning Module of Instruction and Learning Elements in the Modular Training Package is uniquely coded for easy identification and links directly to the code of the units of competency in the Competency Standard for the qualification **FURNITURE FINISHER(SPRAYING)** Certificate Level III, from which it was developed.

Thus, the code of each Learning Module of Instruction links it to the unit of competency for which it was developed. It is divided in three components, i) the unit of competency code and ii) the module number and, iii) module version. Example:

Learning Module of Instruction: Recording Supporting Documents

CODE:	742.7421.031.001.01	001-01
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How are you going to interpret the code for this Learning Module of Instruction? It is explained in the table below:

742.7421.031.001.01	001	01
Unit of Competency Code	Module number	Module Version
Unit of Competency code for the unit title "Collect Supporting Documents" in the competency standard for FURNITURE FINISHER (SPRAYING) Level III	<p>1-Directly corresponds to the Unit Number-series number of the Unit of Competency for which this Learning Module of Instruction has been developed.</p> <p>01- This is the first module for this Unit of competency. A number of modules may be developed for a unit of competency</p> <p>In this case, it means that this learning module of Instruction has been developed for the 8th unit of competency in the competency standard for the qualification Certificate FURNITURE FINISHER (SPRAYING) Level III and this is the first Learning Module of Instruction.</p>	01- Means that this is the first version of this Learning Module of Instruction.

The code of each Learning Element links it to the Learning Module of Instruction for which it was developed. It is divided in three parts, i) the Learning Module of Instruction source code and ii) the Learning Element number, and iii) Issue no. Example:

Learning Element: Receiving Supporting Documents

CODE:	742.7421.031.01.001.01.	-01-01
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Issue No. 01

How are you going to interpret the code for this Learning Element? It is explained in the table below:

742.7421.031.001.01	01	01
Learning Module of Instruction Code	Learning Element number	Issue no.
Learning Module of Instruction code. Title "Recording Supporting Documents" in the competency standard for FURNITURE FINISHER (SPRAYING) Level III	01- This is the first Learning Element contained in this Learning Module of Instruction. A number of Learning Element may be contained in a Learning Module of Instruction.	01- Means that this is the first version of this Learning Element.

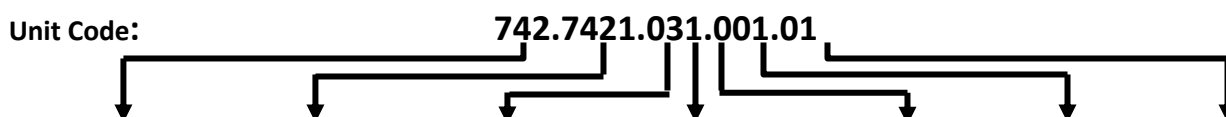
For further information the coding system for each unit of competency is explained below. You may choose to skip this section, otherwise it is recommended to examine this section for better appreciation of the codes in this Modular Training Package.

The code for each unit of competency is composed of numeric characters. It begins with a 3-digit numeric code based on the ISCO 88 occupational minor group code followed a 4-digit numeric code based on ISCO 88 occupational unit group code. After which is the competency field or functional area code in single digit. The various field of competency for this specific competency standard can be found in Table 1 below.

The remaining characters in the unit code, identifies the LNVQF level, type of competency, unit sequence and unit of competency version. The details of the coding system are shown in the chart below. The coding of each unit of competency refers to the format proposed by the STVET Project as follows: `

EXAMPLE:

Unit of Competency: Participate in workplace communication



SECTOR	SUB-SECTOR	SECTOR FIELD	LEVEL	GROUP	UNIT NUMBER	VERSION
ISCO 88 Occupational Minor Group Code	ISCO 88 Occupational Unit Group Code	Competency Field/ Functional Area	LNVQ level where the Unit of Competency was developed for.	Unit of Competency type	Series number of the Unit	Version number of the unit
742	7421	0	3	1	001	01

DEFINITION:

SECTOR	Three (3) digit numeric in Arabic. Refers to the ISCO 88 Occupational Minor Group code where the identified job could be classified under. Example: 742-wood treaters
SUB-SECTOR	Four(4) digit numeric in Arabic. Refers to the ISCO 88 Occupational Unit Group code where the identified job may correspond to. Example: 7421- FURNITURE FINISHER
SECTOR FIELD	Single digit numeric in Arabic. Identifies the competency field or functional area. Complete listing of identified field/functional area of the units of competency of this qualification is shown in Table 1. Example:3- Prepare surface for coating
LEVEL	Single digit numeric in Arabic. Identifies the competency standard LNVQ level where the unit of competency was originally developed for. The range is 1 to 5 corresponding to the levels in the LNVQF. Example: 3- This unit of competency was originally developed for Level 3 qualification

GROUP	<p>Single digit numeric in Arabic. Refers to the type of competency. The identified unit of competency maybe classified as follows:</p> <ul style="list-style-type: none"> 1- BASIC Units 2- COMMON Units 3- CORE Units <p>Example: 3- This unit of competency is a core competency</p>
UNIT NUMBER	<p>Three (3) digit numeric in Arabic. Refers to the series number of the unit of competency as listed in the competency standard.</p> <p>Example:010- The 10th unit of competency listed in this competency standard</p>
VERSION	<p>Two (2) digit numeric in Arabic. Refers to the version number of the unit, ranging from 01, 02, 03 and so on.</p> <p>Example:01- This is the 1st version on this unit of competency</p>

For this competency standard the identified field/functional area of the units of competency is shown below with the corresponding codes.

ACKNOWLEDGMENT

A. References

The Furniture TWG would like to acknowledge the following as a rich source of information and reference in making the competency standards in line with existing regional and international qualification standards:

1. Cabinet Maker (U.S)
2. Furniture and Cabinet Making (U.S.)
3. Furniture Making (Nigeria)
4. Furniture Making – Certificate II (Australia)
5. Furniture Finishing – Level II (New Zealand)
6. Furniture Finishing – Certificate II (Australia)
7. Generic Units of Competencies (ILO)
8. Regional Model Competency Standards, Generic Competencies, Basic Administration, Supervision, Health Safety and Scientific Skills, Regional Skills and Employability Programme in Asia and the Pacific ILO, Regional Office for Asia and the Pacific, 2010
9. Skill Standard for Carpenter (Lao PDR)
10. Training Regulation in Furniture Making (Finishing) – National Certification II (Philippines)
11. Training Regulation in Carpentry – National Certification II (Philippines)

B. Furniture Technical Working Group

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1. Furniture companies and association

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2. Lao Furniture Association

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3. Academic institutions – Beneficiary schools

- a) Phouthone Phothysay, Vice Expert, Pakpasak Technical School
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- e) Sileng Lithsounthone, Head of Unit, Vocational Education Development Center (VEDC)

4. National Training Council – Permanent Office

- a) Phouvong Onnavong, Head of Academic, NTC-PO

5. Vocational Education and Training Council

- a) Khouanchay Boribone, Head of Research and Analysis Office and Methodologist

6. ADB – STVET Consultants – Furniture Trade

- a) Dennis C. Montana
- b) Sisamouth Vesaphong