



Republic of Rwanda
Ministry of Education



RTB | RWANDA
TVET BOARD

WOODEN FURNITURE FINISHING

WOTFF301

FINISH WOODEN FURNITURE

Competence

RQF Level: 3

Learning Hours



Credits: 4

Sector: Agriculture and Food Processing

Trade: Wood Technology

Module Type: Specific

Curriculum: AFPWOT3002- TVET Certificate 3 in Wood Technology

Copyright: © Rwanda TVET Board, 2022

Issue Date: June 2022

1200


















Purpose statement	This module describes employable and practicable skills, knowledge and right attitudes required by the student to describe wood finishing products, conduct pre-finishing activities, perform wood finishing, finish upholstered wooden furniture and finally refinish furniture. The contents provided in this course are packages reserved for a student pursuing TVET certificate III in wood technology. Graduates at this level will have knowledge and skills for initial work, community involvement and/or further learning.				
Delivery modality	Training delivery	100%	Assessment	Total 100%	
	Theoretical content	30%	Formative assessment	30%	
	Practical work:	70%		70%	50%
	<ul style="list-style-type: none"> Group project and presentation 20% Individual project /Work 50% 				
				Summative Assessment	50%




Elements of Competency and Performance Criteria

Elements of competency	Performance criteria
1. Describe wood finishing products	1.1. Finishing products are correctly identified as per the work requirements
	1.2. Wood finishing products are correctly categorized as per stains, lacquers, sanding sealers and varnishes
	1.3. Categories of finishing products are properly identified in accordance with their stages of use
2. Conduct pre-finishing activities	2.1. Furniture parts are constructively disassembled using hand tools
	2.2. Wood surface is well prepared by washing, removing scratches and imperfections and applying fillers for finish application.
	2.3. Finishing ingredients are appropriately selected and sourced based on work type, market supply and client tastes and preference
	2.4. Ingredients obtained are thoroughly mixed to achieve desired colors, shades
	2.5. Parts that need no finishing are properly masked and other accessories also removed
3. Perform wood finishing	3.1. Mixed stains are properly tested on the stain blocks and properly checked matched against design colors and shades
	3.2. Prepared surface is sufficiently stained by brushing, hand rubbing or spraying method
	3.3. Well stained surface is thoroughly treated with sanding sealer and consequently sanded for post treatment
	3.4. Light coat varnish is properly applied followed by oil-based varnish application as final treatment



4. Finish upholstered wooden furniture	4.1. Fabric requirement for the design is exhaustively identified and sourced
	4.2. Design measurements are thoroughly taken and cutting list of fabric made
	4.3. Fabrics are precisely cut as per made cutting lists
	4.4. Intended sewing lines are clearly marked out in chalk lines.
	4.5. Parts marked out are neatly sewn using a sewing machine
	4.6. Sewn fabric is tidily fitted on the furniture part
	4.7. Fabric is seamlessly tacked in using tacks nail or staples leaving out the profiles as designed
	4.8. Fabric joints are neatly done using sewing needle to give good finish.
5. Refinish furniture	5.1. Furniture is thoroughly examined to determine the extent of damage.
	5.2. Furniture accessories are keenly disassembled prior to finishing processes
	5.3. Old finishes and damaged or deteriorated parts are carefully removed by sanding
	5.4. Finishing is perfectly conducted to the furniture to restore the furniture to its original look

Course content

Learning outcomes	At the end of the module the learner will be able to: <ol style="list-style-type: none">1. Describe wood finishing products2. Conduct pre-finishing activities3. Perform wood finishing4. Finish upholstered wooden furniture5. Refinish furniture
Learning outcome 1: Describe wood finishing products	Learning hours: 5
Indicative content	
<ul style="list-style-type: none">• Identification of finishing products<ul style="list-style-type: none">✓ Wood finishing products:<ul style="list-style-type: none"> Wood Oils. Wood Preservers. Wood Stains. Wood Varnishes. Wood Waxes. Specially formulated and pH balanced for a variety of oiled, stained and varnished surfaces. Wood Paints. Wood Polishes.• Wood finishing products categorization as per stains, lacquers, sanding sealers and varnishes<ul style="list-style-type: none">✓ Stains:<ul style="list-style-type: none"> Oil-Based Stain Water-Based Stain Varnish Wood Stain Gel Stain Water-Soluble Dye Stain Lacquer Wood Stain Metal-Complex Dye Stain✓ Lacquers:<ul style="list-style-type: none"> Nitrocellulose Lacquer Acrylic Lacquer	

-  Catalysed Lacquer
-  Waterborne Lacquer
-  Urushiol Based Lacquer

✓ Sanding sealers:

-  Lacquer with zinc stearate
-  Dewaxed shellac

✓ Varnishes:

-  Spirit Varnish
-  Acrylic Varnish
-  Exterior Varnish
-  Polyurethane Varnish
-  Yacht Varnish
-  Oil Varnish
-  Alkyd Varnish

• **Identification of categories of finishing products in accordance with their stages of use**

- ✓ Finishing categories
- ✓ Stages of finishing




Resources required for the learning outcome

Equipment	•
Materials	<ul style="list-style-type: none"> • Oil-Based Stain • Water-Based Stain • Varnish Wood Stain • Gel Stain • Water-Soluble Dye Stain • Lacquer Wood Stain • Metal-Complex Dye Stain • Nitrocellulose Lacquer • Acrylic Lacquer • Catalysed Lacquer • Waterborne Lacquer • Urushiol Based Lacquer • Lacquer with zinc stearate • Dewaxed shellac • Spirit Varnish • Acrylic Varnish • Exterior Varnish • Polyurethane Varnish

	<ul style="list-style-type: none"> • Yacht Varnish • Oil Varnish • Alkyd Varnish
Tools	<ul style="list-style-type: none"> • Books, internet
Facilitation techniques	<ul style="list-style-type: none"> • Group discussion • Trainer guided • Assignments • Presentation • Brainstorming
Formative assessment methods	<ul style="list-style-type: none"> • Written assessment • Performance assessment

Learning outcome 2: Conduct pre-finishing activities	Learning hours: 5
Indicative content	
<ul style="list-style-type: none"> ✓ Disassembling furniture parts using hand tools ✓ Disassembling techniques ✓ Hand tools types ✓ Preparation of wood surface ✓ Filling ✓ sanding, ✓ Preparing finishing ingredients ✓ Methods for preparation ✓ Mixing ingredients ✓ Mixing ratio • Masking parts that need no finishing and removing other accessories <ul style="list-style-type: none"> ✓ Masking methods ✓ Accessories types 	
Resources required for the indicative content	
Equipment	<ul style="list-style-type: none"> • mixer
Materials	<ul style="list-style-type: none"> • Wood finishing products
Tools	<ul style="list-style-type: none"> • Hand tools, buckets, drums.
Facilitation techniques	<ul style="list-style-type: none"> • Practical exercise • Group discussion

	<ul style="list-style-type: none"> • Brainstorming • Trainer guided
Formative assessment methods	<ul style="list-style-type: none"> • Written assessment • Performance assessment

Learning outcome 3: Perform wood finishing	Learning hours: 10
Indicative content	
<ul style="list-style-type: none"> • Testing mixed ingredients on test blocks and checking matching against design colors and shades <ul style="list-style-type: none"> ✓ Testing techniques ✓ Colours and shades checking techniques • Apply primer where applicable • Application of light coat of ingredients <ul style="list-style-type: none"> ✓ Methods and techniques of application <ul style="list-style-type: none">  Brushing  Spraying  Use of rollers 	
Resources required for the indicative content	
Equipment	<ul style="list-style-type: none"> • Spraying equipment, spraying booth , PPE
Materials	<ul style="list-style-type: none"> • Stains , Oil-Based Stain, Water-Based Stain, Varnish Wood Stain, Gel Stain • Water-Soluble Dye Stain • Lacquer Wood Stain • Metal-Complex Dye Stain • Nitrocellulose Lacquer
Tools	<ul style="list-style-type: none"> • Testing blocks, brushes, rollers, pieces of fabric , buckets (ingredient carriers)
Facilitation techniques	<ul style="list-style-type: none"> • Demonstration and simulation • Individual and group work • Practical exercise • Trainer guided • Group discussion
Formative assessment methods	<ul style="list-style-type: none"> • Written assessment • Performance assessment

Indicative content

- **Identifying and sourcing fabric requirement for the design**
 - ✓ Fabric layout
 - ✓ Fabric patterns
 - ✓ Furniture shape
- **Taking design measurements and making cutting list of fabric**
 - ✓ Cutting list
 - ✓ measurement techniques
- **Cutting fabrics**
 - ✓ Cutting steps
 - ✓ Manual cutting methods
 - ✓ Computerised methods
- **Marking out intended sewing lines**
 - ✓ Marking symbols
 - ✓ Marking techniques
 - ✓ Marking principles
- **Sewing parts marked out**
 - ✓ How to press
 - ✓ Staystitching
 - ✓ Clipping corners and curves
 - ✓ Sewing techniques
- **Fitting sewn fabric on the furniture part**
 - ✓ Fitting steps and procedures
 - ✓ Adjusting sewing lines
- **Tacking fabric**
 - ✓ Hand crochet stitch
 - ✓ Blanket stitch
 - ✓ Tear-way machine stitch
 - ✓ Overlooked stitch
- **Performing fabric joints using sewing needle**
 - ✓ Sewing needles
 - ✓ Types
 - ✓ Sizes of needles
 - ✓ Joining techniques

Resources required for the indicative content	
Equipment	<ul style="list-style-type: none"> • Sewing machine
Materials	<ul style="list-style-type: none"> • Fabric • Chalks • Sewing string
Tools	<ul style="list-style-type: none"> • Scissors • Needles • Tape measure • Hand crochet • Drill
Facilitation techniques	<ul style="list-style-type: none"> • Demonstration and simulation • Individual and group work • Practical exercise • Trainer guided • Group discussion
Formative assessment methods	<ul style="list-style-type: none"> • Written assessment • Oral presentation

Learning outcome 6: Refinish furniture	Learning hours: 10
Indicative content	
<ul style="list-style-type: none"> • Examining furniture to determine the extent of damage <ul style="list-style-type: none"> ✓ Growing mould ✓ Cracks and holes ✓ Worn out paint/varnish ✓ Swollen wood ✓ Weak furniture or flooring • Disassembling furniture accessories <ul style="list-style-type: none"> ✓ Techniques for disassembling ✓ Tools used for disassembling • Removing old finishes and damaged or deteriorated parts and replacing them <ul style="list-style-type: none"> ✓ Hazards associated to old parts ✓ Safety precautions ✓ Techniques for removing old parts • Perform final finishing <ul style="list-style-type: none"> ✓ Treating warped or stained surfaces ✓ Washing surfaces of parts ✓ Recoating of furniture 	
Resources required for the indicative content	
Equipment	<ul style="list-style-type: none"> • Testing equipment • Spray gun • PPE

Materials	<ul style="list-style-type: none"> • Washing materials • Fabric • Varnish. • Sand papers
Tools	<ul style="list-style-type: none"> • Claw hammer • Screw driver • Hand brush
Facilitation techniques	<ul style="list-style-type: none"> • Demonstration and simulation • Individual and group work • Practical exercise • Trainer guided • Group discussion
Formative assessment methods	<ul style="list-style-type: none"> • Written assessment • Oral presentation

Integrated/Summative assessment (For specific module)

Integrated situation

The Managing Director of Rwanda Wood Furniture Ltd located in Gasabo District is selected for a tender to supply upholstered furniture and non-upholstered furniture. In his workshop there is a shortage of people who are skilled in wooden furniture finishing and you had a chance to be one among the selected workers to perform that work. Nevertheless, new recruited personnel have to do a test before they are confirmed. It is in this regards that he is requesting you to do the finishing of one upholstered furniture and one non-upholstered furniture as a proof of your competences.

- The finishing of upholstered furniture is supposed to be done within 5 hours and
- The finishing for non-upholstered furniture is supposed to be done within 4 hours.

NB: The finishing materials for both upholstered and non-upholstered furniture are all available in the workshop.

Resources

Tools	<ul style="list-style-type: none"> • Tape Measure • Try square • Saws • Pencil • Hammer • Mallet • Screwdriver • Pincer • Pliers • Sewing needle • Scissors • Knife
-------	---

	<ul style="list-style-type: none"> • Spanners • Shaping tools • Clamps • Cutting tools • Rasps • Files
Equipment	<ul style="list-style-type: none"> • Paint mixer • Shaper machine, • Sanding machine • Sewing machine • Testing equipment • Spray gun • PPE
Materials/ Consumables	<ul style="list-style-type: none"> • Oil-Based Stain • Water-Based Stain • Varnish Wood Stain • Gel Stain • Water-Soluble Dye Stain • Lacquer Wood Stain • Metal-Complex Dye Stain • Nitrocellulose Lacquer • Acrylic Lacquer • Catalysed Lacquer • Waterborne Lacquer • Urushiol Based Lacquer • Lacquer with zinc stearate • Dewaxed shellac • Spirit Varnish • Acrylic Varnish • Exterior Varnish • Polyurethane Varnish • Yacht Varnish • Oil Varnish • Alkyd Varnish

Assessable outcomes	Assessment criteria (Based on performance criteria)	Indicator	Observation		Marks allocation
			Yes	No	
Learning outcome 1:	1.1. Finishing products are correctly identified as per the work requirements	Finishing products are correctly identified.			4
Describe wood finishing products	1.2. 1.2. Wood finishing products are correctly categorized as per stains, lacquers, sanding sealers and varnishes	Wood finishing products are correctly categorized.			2

(10%)	1.3. 1.3. Categories of finishing products are properly identified in accordance with their stages of use	Categories of finishing products are properly identified			2
Learning outcome 2:	2.1. Furniture parts are constructively disassembled using hand tools	Furniture parts are constructively disassembled using hand tools			3
Conduct pre-finishing activities	2.2. Wood surface is well prepared by washing, removing scratches and imperfections and applying fillers for finish application.	Wood surface is well prepared by washing, removing scratches and imperfections and applying fillers for finish application.			1
(15%)	2.3. Finishing ingredients are appropriately selected and sourced based on work type, market supply and client tastes and preference	Finishing ingredients are appropriately selected and sourced based on work type, market supply and client tastes and preference			1
	2.4. Ingredients obtained are thoroughly mixed to achieve desired colors, shades	Ingredients obtained are thoroughly mixed			1
	2.5. Parts that need no finishing are properly masked and other accessories also removed	Parts that need no finishing are properly masked and other accessories also removed			2
Learning outcome 3:	3.1. Mixed stains are properly tested on the stain blocks and properly checked matched against design colors and shades	Mixed stains are properly tested on the stain blocks and properly checked matched against design colors and shades			2
Perform wood finishing	3.2. Prepared surface is sufficiently stained by brushing, hand rubbing or spraying method	Prepared surface is sufficiently stained by brushing, hand rubbing or spraying method.			3
(30%)	3.3. Well stained surface is thoroughly treated with sanding sealer and consequently sanded for post treatment	Well stained surface is thoroughly treated with sanding sealer and consequently sanded for post treatment			4
	3.4. Light coat varnish is properly applied followed by oil-based varnish application as final treatment	Light coat varnish is properly applied followed by oil-based varnish application			4
Learning outcome 4:	4.1. Fabric requirement for the design is exhaustively identified and sourced	Fabric requirement for the design is exhaustively identified and sourced			2
Finish upholstered wooden furniture	4.2. Design measurements are thoroughly taken and cutting list of fabric made	Design measurements are thoroughly taken and cutting list of fabric made			1
	4.3. Fabrics are precisely cut as per made cutting lists	Fabrics are precisely cut			2

(30%)	4.4. Intended sewing lines are clearly marked out in chalk lines.	Intended sewing lines are clearly marked out in chalk lines			1
	4.5. Parts marked out are neatly sewn using a sewing machine	Parts marked out are neatly sewn			2
	4.6. Sewn fabric is tidily fitted on the furniture part	Sewn fabric is tidily fitted on the furniture part			1
	4.7. Fabric is seamlessly tacked in using tacks nail or staples leaving out the profiles as designed	Fabric is seamlessly tacked in using tacks nail or staples leaving out the profiles			2
	4.8. Fabric joints are neatly done using sewing needle to give good finish.	Fabric joints are neatly done using sewing needle to give good finish.			2
Learning outcome 5: Refinish furniture (15%)	5.1. Furniture is thoroughly examined to determine the extent of damage.	Furniture is thoroughly examined to determine the extent of damage.			2
	5.2. Furniture accessories are keenly disassembled prior to finishing processes	Furniture accessories are keenly disassembled prior to finishing processes			2
	5.3. Old finishes and damaged or deteriorated parts are carefully removed by sanding	Old finishes and damaged or deteriorated parts are carefully removed by sanding			2
	5.4. Finishing is perfectly conducted to the furniture to restore the furniture to its original look	Finishing is perfectly conducted to the furniture to restore the furniture to its original look			2
Total marks					100
Percentage Weightage					100%
Minimum Passing line % (Aggregate): 70%					